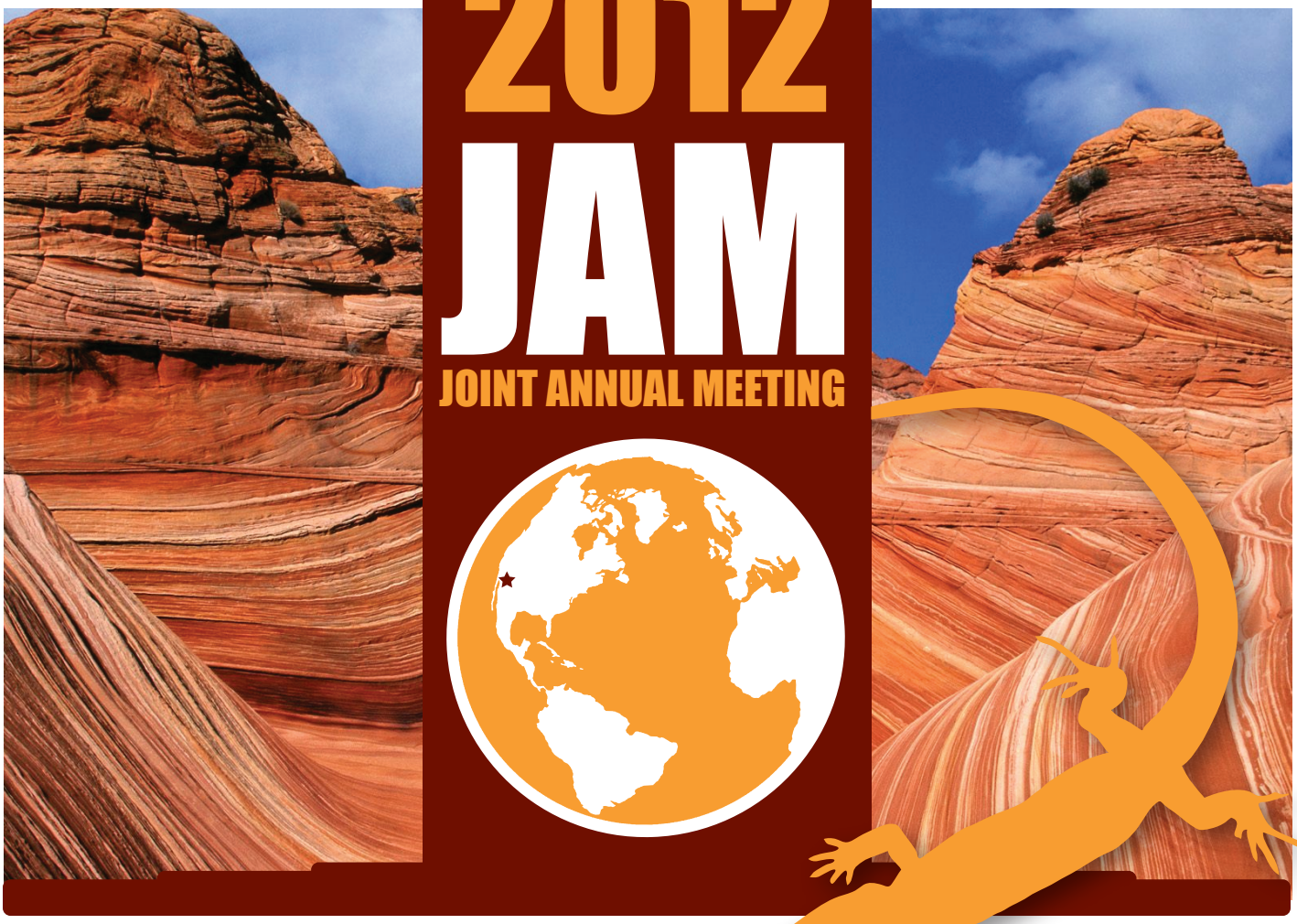

Conference Information and Scientific Program

ADSA® · AMPA · ASAS · CSAS · WSASAS

July 15–19, Phoenix, Arizona

http://jtmtg.org/2012

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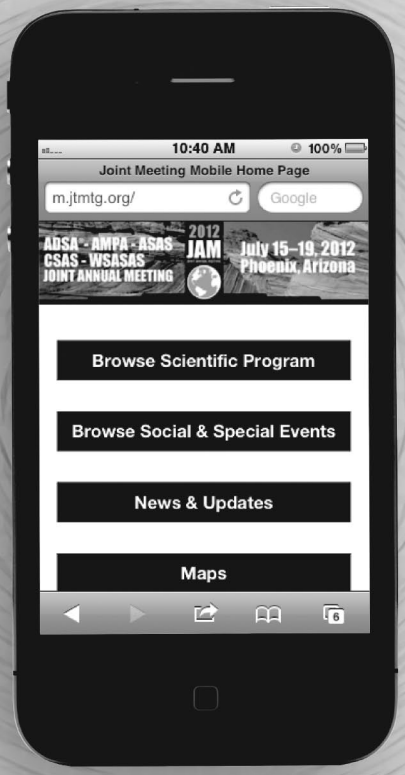

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WELCOME to JAM 2012!

Margaret Benson, ASAS President

Bob Roberts, ADSA President

Julie Small, CSAS President

Rafael Núñez Domínguez, AMPA President

Andrew Roberts, WSASAS President

On behalf of the participating societies, we welcome you to Phoenix and JAM 2012. This year, in addition to the American Society of Animal Science (ASAS) and the American Dairy Science Association® (ADSA®), we welcome the participation of the Canadian Society of Animal Science (CSAS), Western Section of the American Society of Animal Science (WSASAS), and the Asociación Mexicana de Producción Animal (AMPA), making this a truly international meeting. We encourage all attendees to take fullest advantage of this great opportunity to share ideas across species and societies, visit with each other in person, and make new acquaintances.

Many opportunities exist for interaction among society members, starting with the opening session and reception on Sunday, July 15, when a live interview with Dr. Temple Grandin will be the focus of the opening session. Other special events include the Triennial Reproduction Symposium, our second ASN-ADSA-ASAS pre-conference, the late-breaking abstract session, and close to 40 other symposia addressing topics of relevance to our diverse memberships. ASAS invites you to participate in several new and exciting events, including our inaugural National ASAS Academic Quadrathlon Championship, our one-year Animal Frontiers anniversary, the launch party for AnimalSmart.org, and an amazing overall beef program (5 symposia) hosted by WSASAS. This year, the Production and Dairy Foods divisions of ADSA have collaborated on a new symposium: the ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium: How Dairy Exporters Can Provide Food Security. In addition, ADSA will be exploring the creation of ADSA World Regions, starting with South America. Check the program schedule for time and place. In addition to their graduate student competitions, CSAS will be hosting a symposium titled "Are We Experiencing a Paradigm Shift in How We Feed Livestock As Industrial Agriculture Evolves in the 21st Century?"

The meeting program offers many educational and professional development opportunities. Over 2,200 abstracts were accepted for presentation and over 40 scientific symposia are scheduled. The program committee has produced an outstanding integrated program across species. See page 43 in this program for the full schedule of symposia at JAM 2012.

We are grateful to the many people involved with 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 Clint Krehbiel (chair), Jack Whittier, Tony Capuco, Geoff Dahl, Katharine Knowlton, and Alan Iwassa. We also thank the many others who contributed to this huge undertaking, including the FASS staff and staff of ADSA and ASAS.

Finally, thank you, our attendees, for participating in JAM 2012 and making it a grand success!

Margaret Benson
President, ASAS

Julie Small
President, CSAS

Andrew Roberts
President, Western Section ASAS

Bob Roberts
President, ADSA

Rafael Núñez Domínguez
President, AMPA

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http://www.jtmtg.org/2012

Important Message

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

Thank you for your cooperation.

General Meeting Information

Location

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

Schedule of Events

The 2012 Joint Annual Meeting (JAM) will be held July 15–19 (Sunday through Thursday). The opening session will be held on Sunday evening, July 15; scientific sessions will begin Monday morning, July 16, and run through noon on Thursday, July 19.

We have several pre-meeting events this year:

• A five-day workshop titled **Genomic Selection in Livestock** will be held July 9–13 at the Sheraton Phoenix; see page 42 for details.

• The American Society for Nutrition (ASN), ASAS, and ADSA are collaborating on a one-day pre-conference event: **Regulation of Nutritional Intake and Metabolism** on Sunday, July 15; see page 49 for details.

• The **Triennial Reproduction Symposium: Impediments to Fertility in Domestic Animals** will also be held on Sunday, July 15; see page 49 for details.

The 2012 opening session will feature a live interview with world-renowned animal scientist and ASAS member Temple Grandin. Janet Riley, Senior Vice President Public Affairs and Member Services, American Meat Institute, and long-time friend will illuminate Temple's remarkable achievements and contributions to animal science. Attendees will be encouraged to ask questions. Don't miss what promises to be the most inspiring and memorable opening session ever! After the session, enjoy a strolling mariachi band and snacks at the opening reception. The complete schedule of events can be found on page 35 of this program, or online at http://www.jtmtg.org/2012. Watch the website for updates.

Program Format for 2012

Poster sessions . . . . . 7:30 am–9:30 am
Scientific sessions . . . . . 9:30 am–12:30 pm
Lunch break . . . . . 12:30 pm–2:00 pm
Scientific sessions . . . . . 2:00 pm–5:00 pm

Meeting rooms will be equipped for electronic presentations and preloaded sessions. A cyber café will be available for attendees to keep up to date while at the meeting, and free wi-fi is available in the food court areas of the convention center.

Registration Hours

Registration will be located in the North Hall A-B Lobby of the Phoenix Convention Center. Registration hours for the 2012 Joint Meeting, including special symposia and other events, will be as follows:

Saturday, July 14 (preregistered only) . . . . . 3:00 pm–5:00 pm
Sunday, July 15 . . . . . 7:00 am–7:00 pm
Monday, July 16 . . . . . 6:30 am–5:15 pm
Tuesday, July 17 . . . . . 7:00 am–5:15 pm
Wednesday, July 18 . . . . . 7:00 am–5:15 pm
Thursday, July 19 . . . . . 8:00 am–1:00 pm

Important Phone Numbers

Hyatt Regency Phoenix (ADSA HQ) 602-252-1234
Sheraton Phoenix (ASAS HQ) 602-262-2500
Renaissance Phoenix (CSAS HQ) 602-333-0000
Springhill Suites (Student HQ). 602-307-9929

Media Check-In

Please check in at the Registration Desk in the North Hall A-B Lobby of the Phoenix Convention Center.

Speaker Ready Room

The Speaker Ready Room is located in Room 221A (adjacent to the Pre-Load room) of the Phoenix 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 Room 221C of the Phoenix Convention Center. This lounge will offer attendees an area to relax, network, and catch up with old friends. The hospitality lounge is also a great meet-up place when departing the convention center as a group.

Business Center

Located in the West Building of the Phoenix Convention Center, the UPS Store is there to make your work a little easier. The store offers many services. Binding, printing, business cards, copies, faxing, notary services, and many other services are available. The phone number for The UPS Store is (602) 251-0135.

Presentation Information

Oral and Invited Speakers

Oral sessions will begin at 9:30 am on Monday and Tuesday, 10:30 am on Wednesday, and 8:30 am on Thursday.

Onsite Upload Information

Onsite upload: Onsite presentation upload will be available; files can be delivered to the Preload Room (Room 221B) at the convention center (Sat: 3:00 to 5:00 pm; Sun-Wed: 7:00 am to 5:00 pm; Thur: 7:00 am to noon). **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 a two-hour block each morning to poster presentations. The "open poster" sessions will be from 7:30 to 9:30 am Monday, Tuesday, and Wednesday in the Convention Center, North Hall A-B.

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

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

Locating the Correct Poster Board

Each poster board number corresponds to the abstract number as noted in the program. For Monday posters an "M", Tuesday posters a "T", and for Wednesday posters a "W" precedes the board number.

Camera, Video Camera, and Cell Phone Policy

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.

ARPAS Continuing Education Units

The 2012 JAM has been approved for up to 21 continuing education units (CEUs) for the American Registry of Professional Animal Scientists (ARPAS) certification requirements. Check the schedule of events for times and location of the ARPAS exams.

Job Resource Center

The ADSA-ASAS Job Resource Center is located in the exhibit hall. The 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.

ASAS E-Career Tool Now Available Online

Whether you are an employer looking to fill a position or a potential employee looking for a job, the ASAS E-Career Tool has been developed to facilitate this communication. The ASAS E-career tool is free to use and very user friendly. Employers can take advantage of the "search employee" function to identify potential candidates and see where and when they will be presenting their work at the 2012 JAM. Job seekers may upload their CVs and cover letters for potential employers to peruse.

Wi-Fi and Cyber Café

The Phoenix Convention Center has free wi-fi in the North Building's Metro Marche area (food court) and the West Building's Metro Lounge area (food kiosk area), so you can keep in touch with work, family, and friends during JAM. Additionally, the cyber café will be located in the exhibit hall and available to all meeting attendees. The cyber café will also have a computer with a printer for limited printing during the meeting.

Mobile MyProgram— An Easier Way to Plan Your Schedule

The MyProgram planner is now mobile! Mobile MyProgram provides JAM attendees with convenient access to the conference schedule via smartphone. With Mobile MyProgram, the JAM program is more convenient than ever. Visit M.JtMtg.org today!

Headquarters Hotels

Hyatt Regency Phoenix
ADSA Headquarter Hotel
122 North Second St
Phoenix, AZ 85004

Renaissance Phoenix
CSAS Headquarter Hotel
50 East Adams
Phoenix, AZ 85004

Sheraton Phoenix Downtown
ASAS Headquarter Hotel
340 North Third St
Phoenix, AZ 85004

Welcome to Phoenix

Transportation in Phoenix

The JAM hotels and the convention center are approximately five miles from Phoenix Sky Harbor International Airport (PHX). The taxi ride will take approximately 15 minutes. The one-way fare for a taxi from the airport to the Phoenix Convention Center area will be approximately $20.00. A shuttle service (Airport Shuttle) is also available; go online to book a shuttle in advance (http://www.airportshuttle.com). The standard rate is $24.00 round-trip. A shuttle bus connects the airport to the the METRO Light Rail system, which runs to the downtown area.

While you're in Phoenix, you can get around with the METRO Light Rail, which runs from central Phoenix through downtown, Tempe and the ASU campus, to Mesa in the east. Stations are close to and run right by some of the area's top attractions, such as the Heard Museum, Phoenix Art Museum, the Arizona Science Center, Chase Field, US Airways Center, Sun Devil Stadium, and many more. A one-way pass costs $1.75 and an all-day pass is $3.50. Passes can be purchased at the ticket vending machines at each station. During the week, trains generally run every 12 minutes from 5 am to 11 pm. On weekends, they run about every 15 minutes from 5 am until 2 am. More information on routes, stops, and prices can be found on their website, http://routes.valleymetro.org/timetables/785/transit_route?type=1.

Phoenix Sightseeing Options

From the Phoenix Convention and Visitors Bureau (CVB):

> "Desert character. It can't be conjured, landscaped or kindled with twinkling bulbs. John Ford knew that. So did Frank Lloyd Wright and Louis L'Amour. Spend a few days in Greater Phoenix and you'll understand, too. America's sixth-largest city still has cowboys and red-rock buttes and the kind of cactus most people see only in cartoons. It is the heart of the Sonoran Desert and the gateway to the Grand Canyon, and its history is a testament to the spirit of Puebloans, ranchers, miners and visionaries. This timeless Southwestern backdrop is the perfect setting for family vacations, weekend adventures or romantic getaways. Each year, 13 to 15 million leisure visitors travel to Greater Phoenix. They enjoy resorts and spas infused with Native American tradition, golf courses that stay emerald green all year, mountain parks crisscrossed with trails and sports venues that host the biggest events in the nation. The best way to learn about America's sunniest metropolis, of course, is to experience it firsthand."

Visit the CVB (http://www.visitphoenix.com/) for ideas on what to do for fun in Phoenix!

Special Events

ASAS Undergraduate Academic Quadrathlon
Saturday, July 14, to Monday, July 16
Sheraton Phoenix
ASAS is excited to offer our undergraduates the chance to compete in a full Academic Quadrathlon (AQ) on a national level. The AQ students will join us in Phoenix to compete head-to-head in the quiz bowl. Please come out and support our undergraduates.

ADSA SAD-GSD Student Dairy Farm Tour
Saturday, July 14
1:00 – 5:00 pm
Bus departs from Springhill Suites
Departing from the lobby of the SAD hotel, we'll go via motor coach to a Phoenix area dairy farm. Ticket price includes transportation and refreshments.

SAD Student Informal Mixer: Majerle's Sports Grill
Saturday, July 14
7:00 pm
Meet in Springhill Suites lobby or Majerle's Sports Grill, 24 N 2nd Street
Meet in the lobby of Springhill Suites at 6:30 pm or at the restaurant at 7:00 pm. Jump-start the week with good food, good music, and good friends at the Saturday student mixer. Ticket price includes dinner.

SAD Undergraduate Midday Mixer and Lunch
Sunday, July 15
12:00 – 1:00 pm
Convention Center, 224AB
Join your fellow dairy club members for a fun hour of getting reacquainted and making new friends, and get to know your 2012–2013 officer candidates. Lunch includes southwestern fare and drinks. Registration is limited to undergraduate students and advisors.

SAD-Dairy Quiz Bowl Final Round
Sunday, July 15
5:30 – 6:00 pm
Convention Center, 231A
On Sunday, university teams from across North America will compete in the ADSA 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 2012 Dairy Quiz Bowl Winning Team.

ADSA Graduate Student Division Business Meeting and Open Forum
Sunday, July 15
6:00 – 6:45 pm
Convention Center, 231C
Attend to learn about the progress the GSD Advisory Council has made on the current GSD Strategic Plan, and the objectives that the Council has reached in the past year. The second portion of the meeting will be an open forum for graduate student members of the GSD to voice their opinions about the strategic plan, the advisory council, JAM events, and any other topics that might be of interest to members.

Opening Session
Sunday, July 15
7:00 – 8:15 pm
Convention Center, Symphony Hall
The 2012 opening session will feature a live interview with world-renowned animal scientist and ASAS member Temple Grandin. Janet Riley, Senior Vice President, Public Affairs and Member Services at the American Meat Institute, and long-time friend, will illuminate Temple's remarkable achievements and contributions to animal science. Attendees will be encouraged to ask questions. Don't miss what promises to be the most inspiring and memorable opening session ever!

Opening Reception
Sunday, July 15
8:15 – 10:00 pm
Convention Center, North 120A-D
Wind down the evening by joining us after the opening session for snacks, drinks, and some long-awaited socializing time with colleagues and friends. A strolling mariachi band will be on hand for entertainment.

The ASAS Undergraduate Pizza Party, sponsored by the ASAS Graduate Students
Monday, July 16
12:30 – 2:00 pm
Convention Center, 229A
The ASAS graduate students are excited to invite the undergraduates to a pizza party; the graduate students will host. Come and eat free pizza, meet more undergrads, grad students, and the Academic Quadrathlon team.

ADSA Graduate Student Division Career Insights Lunch
Monday, July 16
12:30 – 2:00 pm
Convention Center, 229B
Through informal conversations at each roundtable, graduate students will learn from table leaders (members with hiring responsibilities) and be able to ask frank questions about how to get an interview; best practices in winning them over in an interview; and once in the position, how to thrive. Stay the entire time or just as long as you can. All graduate students are welcome and preregistration for this event is required. Lunch is only $10 but you must preregister.

ASAS Talks Change
Monday, July 16
3:00 – 4:00 pm
Convention Center, 129AB
Join ASAS for a panel discussion on ASAS operational changes that have taken place this year. Dr. Margaret Benson will kick off the panel discussion by discussing details of some of the changes and associated cost savings and member benefits. Then, a panel of ASAS board members who served on operations subcommittees will answer questions concerning publications changes, database changes, IT changes, and the new office space.

ASAS President's Picks
Monday, July 16
6:30 – 7:00 pm
Sheraton Phoenix, Valley of the Sun foyer
ASAS wants to link the ASAS awards and science, so we are starting a new poster presentation: President's Picks! We will display 10 posters beginning 30 minutes before the ASAS Awards. The posters will represent science that the ASAS President finds innovative and exciting! Posters will be displayed outside the Valley of the Sun room and available for viewing before and after the awards (during the ASAS Awards Celebration). Come see what Dr. Benson thinks is new and exciting at JAM this year.

ASAS Awards Program
Monday, July 16
7:00 – 8:30 pm
Sheraton Phoenix, Valley of the Sun ABC
All meeting participants, families, and friends are welcome to attend the ASAS awards program. Please join us at this special event to recognize and congratulate the 2012 ASAS award winners. We will also announce the winner of our first-ever ASAS video conmpetition and unveil our living histories project. The 2012 Awards Celebration follows immediately after the awards ceremony.

ASAS Undergraduate Academic Quadrathlon Finals
Monday, July 16
8:30 pm (immediately following the ASAS Awards)
Sheraton Phoenix
ASAS is excited to offer our undergraduates the chance to compete in a full Academic Quadrathlon (AQ) on a national level. The AQ students will join us in Phoenix to compete head-to-head in the quiz bowl. Quiz Bowl finals will immediately follow the ASAS awards. Please come out and support our undergraduates.

ASAS Awards Celebration
Monday, July 16
8:30 pm
Sheraton Phoenix, Valley of the Sun DE
Come join ASAS after our awards to celebrate and congratulate all of the 2012 ASAS Award winners. ASAS and sponsors welcome you to this exciting new reception. We will have food and cash bars and designated areas where you can find award winners and colleagues.

Graduate Student Mixer, sponsored by ASAS
Monday, July 16
9:00 pm
Crescent Ballroom, 308 N. 2nd Ave., Phoenix
Join your fellow graduate students from ASAS at a mixer for all to enjoy. This event will provide an opportunity to catch up with old friends and make new ones, so don't miss it. Preregistration is highly recommended; all students are welcome.

ADSA-SAD Student Mixer
Monday, July 16
6:30 pm
Poolside, Springhill Suites, 802 East Van Buren Street
Celebrate a great week at ADSA! Rock the night away with good music, good food and good friends, all poolside on a balmy Arizona night – it doesn't get any better than this! Ticket price includes soft drinks and snacks. Don't miss this perennial highlight of the meeting!

SAD Career Roundtable
Tuesday, July 17
9:30 – 11:00 am
Convention Center, 232BC
Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan to visit industry reps in the exhibit hall for information about internships and job opportunities.

Spouse Event: Phoenix Architecture Tour
Tuesday, July 17
9:00 am – 1:00 pm
Meet in Hyatt Regency lobby
The Phoenix Architecture Tour with a stop at Taliesin West showcases the unique and Southwestern influence of architecture throughout the city. Many of the buildings in downtown Phoenix have a very distinctive style, adding to the beauty of the city. The State Capitol features a beautiful copper dome to reflect the copper industry that once thrived in Arizona. One of the most interesting stops on this tour is Frank Lloyd Wright's Taliesin West. Complimentary bottled water will be provided on this bus tour; lunch is not included. Preregistration for this event is required. Register early because capacity is limited!

SAD Awards Lunch
Tuesday, July 17
11:45 am – 2:00 pm
Convention Center, 224AB
Plan to attend this year's SAD awards lunch. 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.

ASAS Foundation Heritage Lunch
Tuesday, July 17
12:30 – 2:00 pm
Convention Center, 229B
The ASAS Foundation has chosen honorees for the second annual ASAS Foundation Heritage Lunch to be held at the convention center. The 2012 honorees are Lester Casida and Arthur Chapman. Please join us at this Foundation fundraiser to honor these two pioneers of animal science.

CSAS Annual General Meeting and Lunch
Tuesday, July 17
12:30 – 2:00 pm
Renaissance Phoenix, Salon 8
Plan to attend this year's AGM and lunch to learn more about the exciting activities planned for this year and next, as well as the current status of CSAS (e.g., finances, membership, *Canadian Journal of Animal Science*).

Northeast ASAS/ADSA Symposium, Business Meeting, Reception, and Awards
Tuesday, July 17
2:00 – 6:00 pm
Convention Center, 122C
Members of the Northeast ASAS Section/ADSA Branch are invited to the symposium followed by the business meeting, presentation of awards and reception.

ADSA Graduate Student Division Dairy Tales
Tuesday, July 17
3:00 – 4:30 pm
Convention Center, 231C
Please join our first-ever Graduate Student Division Dairy Tales to learn about hot topics in dairy science and foods from your fellow graduate students! During this new and exciting event, select graduate students will be giving short, TED-style talks about their fields of study, using terms that can be understood by students studying any field. The event is free, but please register to stay informed about the program. Cheese will be provided by the Wedge and Bottle.

ASAS JAS and Animal Frontiers Editorial Meeting, Open Forum, and Animal Frontiers Birthday Celebration
Tuesday, July 17
4:00 – 5:00 pm
Convention Center, 231A
Attendees, division editors, and associate division editors are invited to the *Journal of Animal Science* and *Animal Frontiers* Open Forum to discuss the current status of the journals and to help us celebrate the 1-year anniversary of the launch of *Animal Frontiers*. As fitting, we will have an *Animal Frontiers* birthday cake!

AnimalSmart.org Launch
Tuesday, July 17
5:00 – 6:00 pm
Convention Center, 222C
Times have changed and ASAS is working hard to keep and incorporate our traditional scientific values in a new world. AnimalSmart.org is our newest venture to serve external stakeholders in an attempt to positively educate and inform about the importance of animal agriculture and animal science. Join us for good food and a champagne toast as we launch this latest venture.

ADSA Awards Program
Tuesday, July 17
7:00 – 8:00 pm
Hyatt Regency Phoenix, Regency Ballroom
All meeting participants, families, and friends are welcome to attend the 2012 ADSA awards program. Please join us at this special event to recognize and congratulate the 2012 award winners at the Hyatt Regency Phoenix.

2012 JAM Ice Cream Social, sponsored by ADSA
Tuesday, July 17
8:15 – 9:30 pm
Hyatt Regency Phoenix, 2nd Floor Atrium
All meeting participants, families, friends, and award donors are invited to join us for the always-popular ice cream social.

ADSA Graduate Student Division Mixer
Tuesday, July 17
9:00 pm – 12:00 am
Brick, 455 North 3rd Street, Phoenix
Join your fellow graduate students and others at Brick, a fun, local wine bar, located within steps of the convention center. Registration is FREE and the first 100 to sign up receive a free drink ticket! We are giving away door prizes throughout the night, and a local DJ will play our favorite tunes. Make sure to pre-register for this very popular event.

WSASAS Graduate Student Lunch and Learn
Wednesday, July 18
12:30 – 2:00 pm
Convention Center, 229A
Please join ASAS members Allison Meyer (University of Wyoming), Greg Lardy (North Dakota State University), Larry Reynolds (North Dakota State University), and Kristi Cammack (University of Wyoming) as they discuss travel experiences from a graduate student perspective and ASAS scholarship applications and benefits; international travel experiences from an employer's perspective and the importance of meeting applicable university travel policies; international collaborations in Scotland, Italy, Poland, and Brazil; and the significance of "study abroad" programs and travel to regional, national, and international meetings for graduate students.

Global Networking Reception
Wednesday, July 18
4:30 – 6:00 pm
Convention Center, 224AB
All meeting participants, families, and friends are welcome to attend the closing reception on Wednesday evening. Again this year, attendees will have the opportunity to indicate their home affiliation on a world map; check the exhibit hall for the poster board before the reception. Don't miss the spectacular Yellow Tail Dancers performing a blend of Native American song and dance that highlights the heritage of the Southwest.

WSASAS Awards Banquet
Wednesday, July 18
6:00 – 10:00 pm
Alice Cooperstown, 101 E. Jackson
All Western Section members of ASAS are invited to the WSASAS Awards Banquet to congratulate our award winners.

CSAS Awards Banquet
Wednesday, July 18
6:00 – 9:00 pm
Renaissance Phoenix, South Ballroom
Please join us in honoring the 2012 CSAS award winners. All meeting participants, spouses, and friends are invited to attend this celebratory event. Make sure to purchase your tickets in advance, as a limited number of tickets will be available for purchase at the registration desk.

Alltech/CSAS Graduate Student Mixer
Wednesday, July 18
9:00 pm – 12:00 am
Renaissance Phoenix, South Ballroom
Please join us for some Kentucky hospitality at the Alltech/CSAS Graduate Student Mixer immediately following the awards banquet. This event is open to all CSAS members and CSAS graduate students. Refreshments will be served and a cash bar will be available

2012 ADSA Award Donors

ABS Global Inc.
ADSA Foundation
Alltech Biotechnology Center
American Feed Industry Association
Cargill Animal Nutrition
Cargill Flavor Systems
Dairy Management Inc.
DeLaval Inc.
Dupont Nutrition and Health
Elanco Animal Health–Eli Lilly and Company
Hoard's Dairyman
International Dairy Foods Association
Kraft Foods
Land O'Lakes Purina Feed LLC
Leprino Foods
National Milk Producers Federation
Nutrition Professionals Inc.
Pfizer Animal Health
Pioneer, A DuPont Company
Schreiber Foods
West Agro Inc.

2012 ASAS Award Donors

ABS Global Inc.
Agri-King
American Feed Industry Association
American Society of Animal Science
American Society of Animal Science Foundation
Bouffault Award Fund
Center for Regulatory Services Inc.
Cenzone Technology
Cromwell Appreciation Club
DSM Nutritional Products Inc.
Elanco
Fontenot Appreciation Club
Land O'Lakes
Merial Ltd.
Morrison Award Fund
Omega Protein Corp.
Pfizer Animal Health
Pond Appreciation Club
The Iams Company
Tucker Appreciation Club
Zinpro Corp.

2012 ASAS Awards Reception Sponsors

(as of May 16, 2012)

ASAS
Montana State University
North Carolina State University
Rutgers Equine Science Center
Texas Tech University
University of Arkansas
University of California-Davis
University of Guelph
University of Kentucky
University of Missouri
Virginia Polytechnic Institute and State University

2012 ASAS Academic Quadrathlon Sponsors

(as of May 16, 2012)

ABS Global Inc.
CEV Multimedia
ASAS
ASAS Foundation
National Block and Bridle
Select Sires
United Soybean Board
University of Arizona

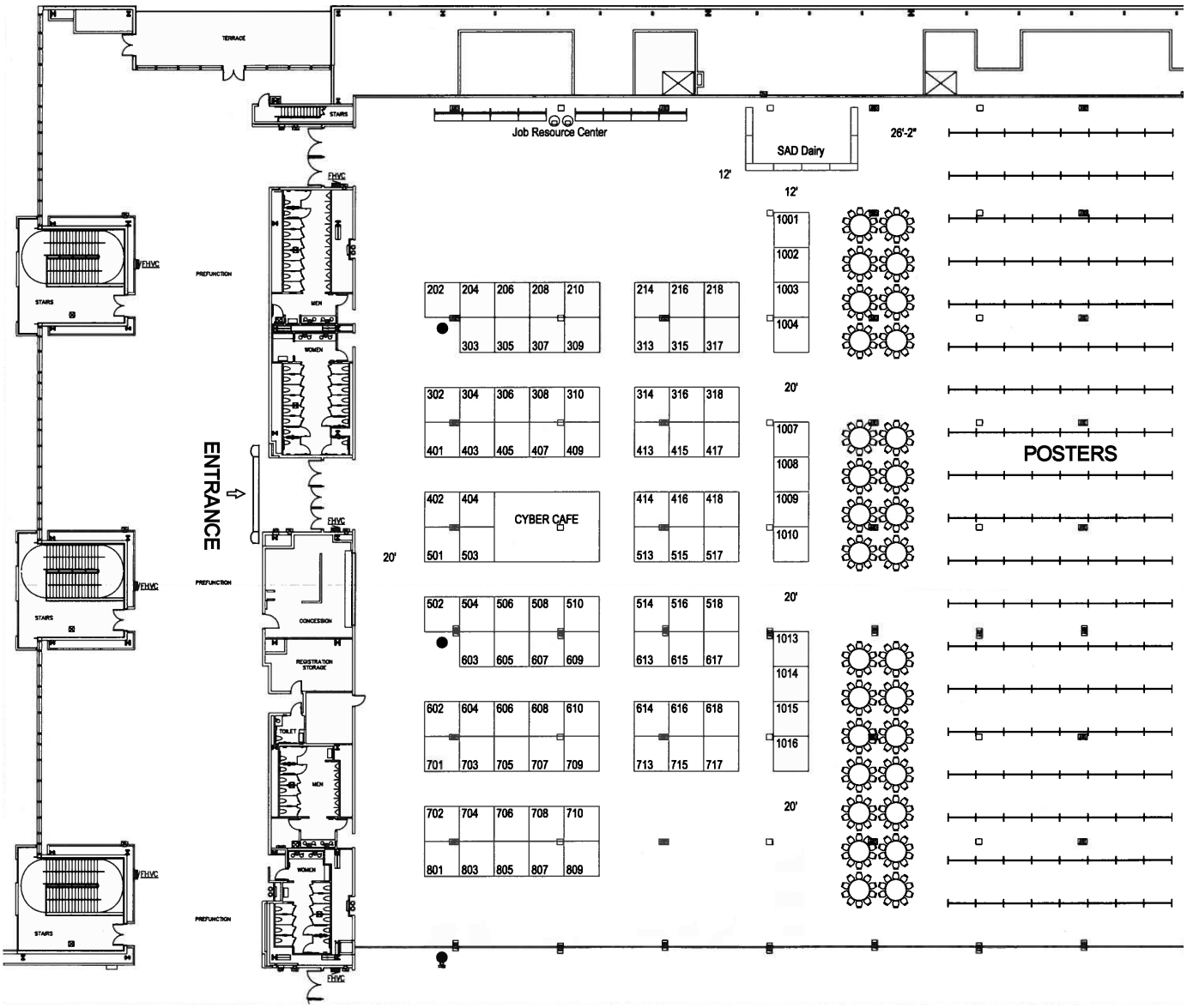
2012 Western Section ASAS Award Donors

AgResearch LLC
CHS
Diamond V
Elanco
Great Plains Consulting
IMI Global
Land O'Lakes Purina Feed
Padlock Ranches
PerFormix Nutrition
Pfizer Animal Health
Ranchway Feeds
Ridley Block
Strauss Feeds
Vigortone
Zinpro

Exhibit Schedule

Sunday July 15	Exhibit Set Up	10:00 am – 6:00 pm
Monday, July 16	Exhibits Open	8:00 am – 6:00 pm
	Exhibitor Reception	4:00 pm – 6:00 pm
Tuesday, July 17	Exhibits Open	8:00 am – 5:00 pm
Wednesday, July 18	Exhibits Open	8:00 am – 2:00 pm
	Exhibit Dismantle	2:00 pm – 5:00 pm

Exhibit Floor Plan



Guide to Exhibitors/Booth Numbers

A special thank you to our 2012 Joint Annual Meeting Exhibitors!

Exhibit Directory

AAALAC
5283 Corporate Dr Ste 203
Frederick, MD 21703-2879
http://www.aaalac.org
Booth(s): 404

AAALAC International offers accreditation and education services for agricultural animal research programs. Earning accreditation demonstrates dedication to responsible animal care. It also assures research partners, funding sources, and the public of a commitment to quality research and good science. More than 850 institutions in 33 countries have earned AAALAC accreditation.

Acadian Agritech
30 Brown Avenue
Dartmouth, NS, B3B 1X8, Canada
http://www.tasco.ca
Booth(s): 602

Tasco is a functional food designed to address critical production issues in today's livestock industry. All-natural Tasco helps modulate functions relative to health, productivity, and stress resistance. Tasco is generally regarded as safe (GRAS) in animal feeds.

Adisseo
4400 N Point Pkwy Ste 275
One Point Royal
Alpharetta, GA 30022-2429
http://www.adisseo.biz/
Booth(s): 1013, 1014

At Adisseo, we are nutritionists with a long tradition of applying our expertise to nutritional additives. We are dedicated to serving the animal production industry by helping premixers, feed manufacturers, and integrators to improve their performance and to become more competitive.

Ag Processing Inc.
PO Box 2047, 12700 West Dodge Road
Omaha, NE 68103-2047
(402) 492-3309
http://www.amino-plus.com
Booth(s): 518

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

Alltech
3031 Catnip Hill Rd
Nicholasville, KY 40356-8700
http://www.alltech.com
Booth(s): 214, 216, 313, 315

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

American Dairy Science Association (ADSA)
1800 S Oak St, Ste 100
Champaign, IL 61820-6974
http://www.adsa.org
Booth(s): 1003

Established in 1906, ADSA is an international organization of educators, scientists, industry, and government representatives who are committed to advancing the dairy industry. All are keenly aware of the vital role the dairy sciences play in fulfilling the economic, nutritive, and health requirements of the world's population. Together, ADSA members have discovered new methods and technologies that have revolutionized the dairy industry. Please visit www.adsa.org for more information.

American Registry of Professional Animal Scientists (ARPAS)
1800 S Oak St, Ste 100
Champaign, IL 61820-6974
http://www.arpas.org
Booth(s): 304

ARPAS is the organization that provides certification of animal scientists through examination, continuing education, and commitment to a code of ethics. Continual improvement of individual members is catalyzed through publications (including The Professional Animal Scientist journal) and by providing information on educational opportunities.

American Society of Animal Science (ASAS)
PO Box 7410
Champaign, IL 61820
http://www.asas.org
Booth(s): 706

Established in 1908, ASAS is a professional organization for animal scientists designed to help members provide effective leadership through research, extension, teaching, and service for the dynamic and rapidly changing livestock and meat industries. Please visit www.asas.org for more information.

Animal Frontiers
PO Box 7410
Champaign, IL 61820
Booth(s): 807

Animal Frontiers is a new review magazine published jointly by the American Society of Animal Science (ASAS), the Canadian Society of Animal Science (CSAS), and the European Federation of Animal Science (EAAP). Animal Frontiers will address current significant issues important to animal agriculture on the global stage. Each issue of Animal Frontiers will address a common theme with leading authors in those areas addressing various aspects of the theme. Animal Frontiers is published quarterly with an intended international readership of scientists, politicians, industry leaders and the general public seeking a scientific perspective on issues related to animal agriculture.

AnimalSmart.org
PO Box 7410
Champaign, IL 61820
Booth(s): 703

Times have changed and ASAS is working hard to keep and incorporate our traditional scientific values in a new world. AnimalSmart.org is our newest venture to serve external stakeholders in an attempt to positively educate and inform about the importance of animal agriculture and animal science. Visit AnimalSmart.org to learn more.

Ankom Technology
2052 O'Neil Rd
Macedon, NY 14502-8953
http://www.ankom.com
Booth(s): 603

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

Arm & Hammer Animal Nutrition
469 N Harrison St
Princeton, NJ 08540-3510
http://www.AHDairy.com
Booth(s): 1004

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

ASAS Foundation
PO Box 7410
Champaign, IL 61820
http://www.asas.org
Booth(s): 708

The ASAS Foundation was created by the ASAS Board of Directors to identify individual and corporate entities that seek to enhance and perpetuate the activities of the society. The Foundation seeks to create a nucleus of funds and investments from which its Board of Directors and its membership may address critical issues facing the profession. Moreover, we would encourage the funding of ventures into new areas that will assist the society and its members in obtaining excellence in a highly dynamic industry. We visualize a corpus of funds composed of gifts, grants, endowments, and appreciation clubs, each tailored to the needs and wishes of the donor and that are consistent with the mission of the society.

Balchem
PO Box 600 52 Sunrise Park
New Hampton, NY 10958-0600
http://www.balchem.com
Booth(s): 210, 309

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

Bar Diamond Inc
PO Box 60
Parma, ID 83660-0060
http://www.bardiamond.com
Booth(s): 1009

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

Bio Springer
321 De La Commune St. Ste 300
Montreal, PQ, H2Y 2E1, Canada
Booth(s): 607

Bio Springer, the global leader in yeast extracts, offers a large number of yeast extracts for dairy culture fermentation, including nucleotide and glutathione rich products. Our yeast extracts are also an important component in animal vaccine manufacturing and reduce viral contamination risks. Our state-of-the-art plant in Cedar Rapids, Iowa, reinforces our commitment to US customers.

Biomin
1846 Lockhill Selma Rd, Ste 101
San Antonio, TX 78213-1551
http://www.biomin.net
Booth(s): 310

Biomin is a customer-oriented company with the objective to enhance productivity and unlock the performance potential of livestock. Based on intense research, Biomin develops and produces feed additives and premixes in accordance with latest know-how and with state-of-the-art production technology. Our top brands are Biofix Plus and Biofix Select.

Brilliant Alternatives Inc.
11907 Old Hickory Ct.
Spotsylvania, VA 22553
http://www.brilliantalternativesinc.com
Booth(s): 1016

Bob Brill announces "Cloud" Feed Formulation Software. Like many other "Firsts", our Cloud Formulation will allow users to do much more. Additive sellers can use the software to show and tell what their products do for their clients. Universities are invited to use Brilliant's Software for teaching or "outreach projects". Laboratory Decision Maker (LDM) collects samples from NIR or your lab and gives statistical analysis from selected samples. After analysis, LDM allows an automatic update to formulation databases. Brilliant also provides support for Formulation Software. After years of leadership, Brilliant continues to serve the industry.

Bruker Optics Inc.
19 Fortune Dr
Billerica, MA 01821-3923
http://www.brukeroptics.com/solutions
Booth(s): 504

Save costs while improving quality by upgrading to the next generation of NIR analyzers. From improved control of feed ingredients to more precise testing of proximates, these analyzers have also been used to monitor blending processes and optimize mill operation. Existing calibrations and data are upwardly mobile. These FT-NIR systems feature the lowest cost of ownership with a 10-year warranty on the Rock Solid Interferometer, which is permanently aligned, eliminating time-consuming instrument standardization protocols. Samples can be measured as-is in seconds without time-consuming sample preparation.

Buchi Corporation
19 Lukens Dr, Ste 400
New Castle, DE 19720-2787
http://www.mybuchi.com
Booth(s): 614

For over 50 years, Buchi has been known as the market leader, inventor and innovator of lab instruments based on evaporation and vacuum technologies, and as the supplier of the Rotavapor rotary evaporators worldwide. In addition, Buchi Corporation is a proven North American provider of spray dryers for pharmaceutical and food agglomeration and microencapsulation, Kjeldahl and solvent extraction equipment for environmental and food analysis, NIR spectroscopy instruments for pharmaceutical and food quality control, modular flash chromatography systems, and other related laboratory equipment. Headquartered in New Castle, Delaware, Buchi Corporation is an affiliate of Buchi Labortechnik AG (Flawil, Switzerland).

CABI Bookshop
22883 Quicksilver Dr
Sterling, VA 20166-2019
http://www.styluspublishing.com
Booth(s): 308

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

CABI Publishing
Nosworthy Way
Wallingford, Oxfordshire, OX10 8DE, United Kingdom
http://www.cabi.org
Booth(s): 306

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

Cambridge University Press
32 Avenue of The Americas, Bldg 1
New York, NY 10013-2473
http://journals.cambridge.org
Booth(s): 307

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

CEV Multimedia
1020 SE Loop 289
Lubbock, TX 79404-6007
Booth(s): 608, 610, 707, 709

CEV is proud to introduce its NEW, online iCEV Agricultural Science site. This curriculum-on-demand delivery model allows for "anytime, anyplace" access to CEV's entire agricultural science library, including all animal science and animal/meat evaluation resources. With more than 20,000 minutes of video, the subscription-based product is organized into small segments, or learning objectives (i.e., 37 seconds to 18 minutes), and its sophisticated search feature makes searching for various agricultural science topics easy.

Chandler Analytical Laboratories
571 N 54th St
Chandler, AZ 85226
http://chandleranalytical.com
Booth(s): 617

We are a small privately owned forage testing laboratory, NFTA-certified for wet chemistry and NIRS. We analyze a variety of agricultural products including alfalfa hay and all alfalfa products, corn and other small grain silages, TMRs, whole grains, distiller grains and supplements. If you can grow it, chances are we can test it! We are also certified for aflatoxin determination in cotton and cottonseed products, and do water quality testing. We pride ourselves on providing quality analyses with a quick turn-around. Our goal is not just to meet but exceed your expectations.

Chr. Hansen
9015 W Maple St
Milwaukee, WI 53214-4213
http://www.chr-hansen.com
Booth(s): 302, 401

Chr. Hansen Animal Health & Nutrition has been ranked as the most trusted direct-fed microbial source by dairy nutritionists. As the "world's microbial experts," Chr. Hansen has been the leading supplier of lactic acid bacteria and other ingredients since 1874. A history rich in science, research, and product quality has produced products such as Probios, Biomate, Biomax, and BioPlus.

Cumberland Valley Analytical Services
14515 Industry Dr
Hagerstown, MD 21742-2410
http://www.foragelab.com
Booth(s): 1010

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

Dairy Records Management
313 Chapanoke Rd, Ste 100
Raleigh, NC 27603-3434
http://www.drms.org
Booth(s): 405, 407

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

Dairy Tech Inc.
352 North Shores Circle
Windsor, CO 80550-2614
http://www.dairytechinc.com
Booth(s): 502

Dairy Tech Inc. has been an industry leader in new calf technologies that support best management practices. The core of Dairy Tech has been batch pasteurization technology that has led the industry in innovation and research for the past 11 years. Just this year, the company has launched several products that have become cornerstones of colostrum management for calves.

Dalex Livestock Solutions LLC
240 Industrial Blvd
Waconia, MN 55387-1734
http://www.dalex.com
Booth(s): 506

Dalex Livestock Solutions LLC is the leading provider of ration formulation software and related livestock solutions. Dalex offers ration balancing for dairy, beef and swine and allows for the use of multiple nutritional models. Current programs include The Consulting Nutritionist and CN.Dalex. Additional programs of value to the livestock industry are currently under development. Dalex has provided a complete solution to formulate, analyze, and monitor livestock feeding situations since 1980.

DASCOR Inc.
PO Box 462885
Escondido, CA 92046-2885
http://www.dascor.com/ruminframe.html
Booth(s): 1008

DASCOR Inc. manufactures a series of autonomous data loggers for ruminal research measurements of temperature, pH, ORP, NH_4^+, and pressure for use in cannulated cattle, and as boluses for use in sheep and goats.

Diamond V Mills
PO Box 74570
Cedar Rapids, IA 52407
http://www.diamondv.com/
Booth(s): 702, 704, 801, 803

Diamond V, headquartered in Cedar Rapids, Iowa, provides nutritional fermentation products that optimize digestive function and nutrition key to animal and aqua health, productivity, efficiency and profitability. Our commitment to innovation, technology, and quality has earned Diamond V a global reputation of trust and reliability within the animal feed industry. We help our customers succeed by sharing knowledge, innovation and capability. The benefit is real, Diamond V investment and commitment is real. Diamond V's innovative brands—Original XPC, XP and YC, DiaMune Se, SelenoSource, and DV Aqua—are research proven and engineered to deliver results.

EAAP
Via G. Tomassetti
00161 Rome, Italy
http://www.eaap.org/
Booth(s): 316

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

E. I. Medical Imaging
348 N Jefferson Ave
Loveland, CO 80537-5647
http://www.eimedical.com
Booth(s): 701

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

Elsevier
1600 John F Kennedy Blvd Ste 1800
Philadelphia, PA 19103-2398
http://www.elsevierhealth.com
Booth(s): 218

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

Estrotect
PO Box 39
Spring Valley, WI 54767-0039
Booth(s): 517

AccuBreed is an advanced new wireless tool to track and monitor mounting activity in real time. With AccuBreed, you can determine peak mounting activity, breed when cows are in standing heat, and use available technology to increase pregnancy rates.

Evonik Degussa Corp
1701 Barrett Lakes Blvd NW Ste 340
Kennesaw, GA 30144-4509
http://www.aminoacidsandmore.com
Booth(s): 413, 415

Degussa is the only company in the world to supply, from a single source, all four of the important amino acids for animal nutrition: DL-methionine, Biolys (L-lysine), L-threonine, and L-tryptophan. Mepron, a rumen-protected DL-methionine, rounds off the company's product range as part of its "one source" strategy.

Federation of Animal Science Societies
1800 S Oak St, Ste 100
Champaign, IL 61820-6974
http://www.fass.org
Booth(s): 204

The Federation of Animal Science Societies (FASS) was formed in 1998 by three founding member societies: the American Dairy Science Association® (ADSA®), the American Society of Animal Science (ASAS), and the Poultry Science Association (PSA). FASS is unique in that we support common agricultural interests and, at the same time, streamline administrative expenses while preserving the societies' traditions and values. We specialize in providing a wide array of management services to small and medium-sized, not-for-profit associations. In additon, each year, PhD scientists in animal science compete for the opportunity to represent FASS in Congress through the Congressional Science Fellowship (CSF) Program. Many of these individuals stay on the Washington scene after their fellowship year and continue to serve animal agriculture in significant ways. Be sure to stop by the FASS booth to hear about DC activities from the 2011–2012 CSF.

Feed Management Systems
6120 Earle Brown Dr, Ste 300
Brooklyn Center, MN 55430-4101
http://www.feedsys.com
Booth(s): 318

Feed Management Systems provides integrated software solutions for feed manufacturers to manage their critical formula and production data. Ensure the quality of your feed supply by automating and optimizing formulas, pricing, ordering, inventory, labeling, delivery, traceability, reporting and financials. Solutions include Feed Mill Manager, Brill Formulation, Feed Ration Balancer, and Feed Tags.

Feedstuffs
12400 Whitewater Dr Ste 160
Minnetonka, MN 55343-4158
http://www.feedstuffs.com/
Booth(s): 403

Feedstuffs is the only weekly paid news source for agribusiness. Every week, we keep our subscribers informed on the important issues affecting the business of producing food for the world.

H.J. Baker & Bro., Inc.
228 Saugatuck Ave, Ste 1
Westport, CT 06880-6444
http://www.bakerbro.com
Booth(s): 513, 515

H.J. Baker offers university research proven products to increase efficiency for today's high producing dairy cows. MetaboLys® rumen by-pass, high intestinal digestiblity lysine delivers a high payload of lysine directly into the small intestine. PRO-LAK® specially formulated 72% rumen by-pass protein delivers the essential amino acid profile and supports maximum milk production. For more information, please visit www.bakerbro.com.

Hangzhou East Biochem Co., Ltd.
1705 Guangyin Bldg, 42 Fengqi Dong Rd
Hangzhou 310020, China
http://www.east-biochem.com
Booth(s): 1015

We are a Chinese producer of specialty feed additives. Based on our FAMI-QS certified factory, we provide betaine, sodium butyrate 30% coated, zinc oxide 50% coated, rumen protected choline chloride 25%, rumen-protected lysine HCl 30%, rumen-protected methionine 30%, Bacillus subtilis (5×10^{11} cfu/g) and Bacillus licheniformis (5×10^{11} cfu/g).

IFFCO (Malaysia) Sdn. Bhd.
Port Khalid, Shartah Shartah, United Arab Emirates
Booth(s): 616, 618

A full range of highest quality vitamin mineral premixes is available as per the standard formulations and as per custom made specifications. All premixes are currently being marketed in Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. All premixes are produced from highest quality raw material selected meticulously from reputed suppliers, weighed accurately and blended uniformly by highly trained and experienced personnel in extremely hygienic conditions (GMP compliant). All premixes are produced after receiving confirmed orders to ensure freshness and supplied on a monthly or fortnightly basis to avoid large inventories at the farm level.

IMMVAC Inc.
6080 East Bass Lane
Columbia, MO 65201-9735
http://www.immvac.com
Booth(s): 409

Endovac-Dairy and Endovac-Beef with Immune Plus®, manufactured by IMMVAC, provides your herd unprecedented protection against E. coli, Salmonella, and Pasteurella. IMMVAC, committed to science and service excellence, is the industry's most scientifically respected manufacturer of vaccines and serums that protect production and companion animals against common disease threats and virtually all gram-negative bacteria.

Jefo Nutrition
5020 Jefo Ave, Box 325
St-Hyacinthe, QC J2S 7B6, Canada
http://www.jefo.com
Booth(s): 1001, 1002

Jefo is an industry leader in non-medicated, high-performance feed additives, committed to the livestock feed industry since 1982. In the last 30 years, our involvement in research has resulted in innovation: products designed for the requirements of each species with an understanding of their differences to make a difference on farms.

Journal of Animal Science (JAS)
PO Box 7410
Champaign, IL 61820
http://jas.fass.org/
Booth(s): 715

The Journal of Animal Science (JAS) is the premier journal for animal science and serves as the leading source of new knowledge and perspective in this area. JAS publishes more than 400 peer-reviewed research articles, invited reviews, technical notes, and letters to the editor each year. According to ISI's Journal Citation Reports, JAS consistently ranks as one of the top journals (among 43 titles) in the category of Agriculture, Dairy, and Animal Sciences in terms of impact factor, immediacy index, and cited half-life and is in the top 1% of STM publishing (50,000+ titles) by total ISI citations.

Kemin Industries
2100 Maury St
Des Moines, IA 50317-1100
http://www.kemin.com
Booth(s): 508, 510

Kemin AgriFoods brings value to the feed industry by working in partnership with its customers. With fifty years of collective expertise in animal nutrition, Kemin AgriFoods has developed the Total Nutrition program offering nutritional solutions that contribute to the safe, efficient, and healthy production of animal protein. Proven scientific knowledge, reliable technology, and personalized service make Kemin the advisor you can count on.

Lallemand Animal Nutrition
6120 W. Douglas Avenue
Milwaukee, WI 53218-1548
http://www.lallemandanimalnutrition.com
Booth(s): 206

Lallemand Animal Nutrition offers a range of solutions for the dairy industry, including Levucell SC and Levucell SB active dry yeast, Biotal forage inoculants, Alkosel organic selenium yeast, Agrimos, and other mineral-enriched yeast supplements.

Micronutrients
1550 Research Way
Indianapolis, IN 46231
http://www.micro.net
Booth(s): 713

Micronutrients, based in Indianapolis, is dedicated to the development, production and marketing of trace minerals for livestock and companion animals. Current development has led to the creation of a new class of trace minerals, hydroxy trace minerals. Use of the first mineral, IntelliBond C (Micronutrients TBCC – tribasic copper chloride), has grown consistently for the past 15 years and is soon to be followed by zinc and manganese. Hydroxy trace minerals have been proven in over 70 research studies to deliver improved essential nutrient stability in feeds while significantly increasing the availability of the mineral to the animal.

Multimin USA, Inc.
2809 East Harmony Rd. #190
Fort Collins, CO 80528-3111
http://www.multiminglobal.com
Booth(s): 414

Multimin90 is an injectable fast acting pre-treatment of the trace minerals copper, zinc, manganese, and selenium. Dairy producers use Multimin90 in replacement heifers and cows at least 4 weeks before critical times of high trace mineral demand such as AI and calving and at dry-off to optimize immunity of the cow and her calf and reproductive performance of the cow.

National Animal Health Monitoring System (NAHMS)
2150 Centre Ave Bldg B-2E7 USDA:APHIS:VS:CEAH
Fort Collins, CO 80526-8116
http://nahms.aphis.usda.gov
Booth(s): 805

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.

Novus International
20 Research Park Dr
Saint Charles, MO 63304-5633
http://www.dairybalance.com
Booth(s): 303, 305

Novus is headquartered in St. Charles, Missouri, and serves customers in more than 80 countries. Novus is an industry leader in animal nutrition and health, and their products include Agrado feed ingredient, Alimet feed supplement, Activate nutritional feed acid, Acidomix preservative premixture, Mintrex organic trace minerals, Santoquin feed preservative, and other ingredients.

PetAg Inc.
255 Keyes Ave
Hampshire, IL 60140-9449
http://www.petag.com
Booth(s): 417

Bospro is an aspergillus mycelium product for ruminants that has demonstrated remarkable effects on increasing rumen function. Fermacto is an aspergillus mycelium product for monogastrics that has demonstrated in poultry increased maturity levels of the gastrointestinal tract of the immature bird. Please stop by our booth for data and samples.

Poultry Protein & Fat Council
1530 Cooledge Rd
Tucker, GA 30084-7303
http://www.poultryegg.org/ppfc/
Booth(s): 1007

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

Probiotech International Inc.
6225 Choquette Street St.
Hyacinthe, QC J25 8L2, Canada
http://www.probiotech.com
Booth(s): 418

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

QualiTech Inc.
318 Lake Hazeltine Dr
Chaska, MN 55318-1034
http://www.qualitechco.com
Booth(s): 202

QualiTech has been providing innovative solutions to dairy, beef, swine, poultry, equine, and companion animals for over 40 years. Our core technologies and products include SQM organic trace minerals, Feedbuds palatability enhancers, dispersibles, electrolytes, and protected vitamins. The foundation of our technology is over four decades of research conducted across species and under varying conditions with proven results. QualiTech is committed to helping animals, plants and people thrive. For more information about how QualiTech can benefit the animal species you work with, call us at (800) 328-5870, ext. 222, or visit us at www.qualitechco.com.

Rite in the Rain
2614 Pacific Highway E
Tacoma, WA 98424
(253) 522-5000
http://www.RiteintheRain.com
Booth(s): 503

Rite in the Rain is a patented, environmentally responsible, all-weather writing paper that sheds water and enables you to write anywhere, in any weather. From the torrential downpours in the Pacific Northwest to the blistering heat and humidity of a Florida summer day, Rite in the Rain is able to provide users around the world with an effective means with which to write, protect, and keep valuable information. Using a pencil or all-weather pen, Rite in the Rain ensures that your notes survive the rigors of the field, regardless of the conditions. Products include copier paper, field books, notebooks, loose leaf, grid sheets and all-weather pens. Custom printing is also available.

Saf Agri/Lesaffre Feed Additives
7475 W Main St
Milwaukee, WI 53214-1552
http://www.lfa-america.com
Booth(s): 604

Lesaffre Feed Additives provides innovative products produced by the Lesaffre Group, the world's oldest and largest yeast manufacturer, to livestock feed producers and pet food manufacturers throughout the Americas. The product line includes active dry yeast for pelleted and non-pelleted feeds, inactive dry yeast, mineral yeast, enzymes, and mannan oligosaccharides.

SGS North America
236 32nd Avenue
Brookings, SD 57006
Booth(s): 317

SGS is the world's leading inspection, verification, testing and certification company. SGS is recognized as the global benchmark for quality and integrity. With more than 70'000 employees, SGS operates a network of over 1,350 offices and laboratories around the world.

SoyBest
PO Box 157
West Point, NE 68788-0157
http://www.soybest.com
Booth(s): 402, 501

SoyBest high bypass soybean meal is bypass protein for dairy cows. Manufactured using a mechanical process, it contains no chemical solvents and is all natural. SoyBest includes fresh soy gums with lecithin and phosphatidyl-choline. Research shows these nutrients behave like rumen-protected fat, resulting in even more bypass protein with excellent intestinal digestibility.

SoyPLUS, SoyChlor (West Central)
PO Box 68
Ralston, IA 51459-0068
http://www.soyplus.com
Booth(s): 609

SoyPLUS is the industry leader, consistently delivering dairy bypass protein, unbeatable protein quality, and intestinal digestibility. SoyPLUS contains research proven higher energy and rumen inert fat. SoyChlor has proven itself in effectively balancing DCAD in herd health. SoyChlor's key ingredient is hydrochloric acid, the most palatable source of chloride available.

Unity Scientific Inc.
117 Old State Rd
Brookfield, CT 06804
Booth(s): 314

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

USDA–Animal Welfare Information Center
10301 Baltimore Ave, Rm 410
Beltsville, MD 20705-2326
http://www.nal.usda.gov
Booth(s): 605

The USDA is mandated by the Animal Welfare Act to provide information for the improved care and use of animals in research, testing, teaching, and exhibition. Staff at the Animal Welfare Information Center provide a variety of topical publications, literature searches, and training opportunities.

Varied Industries Corporation (Vi-COR)
905 S Carolina Ave, PO Box 1483
Mason City, IA 50401-5813
http://www.vi-cor.com
Booth(s): 514, 516, 613, 615

Vi-COR headquarters, located in Mason City, Iowa, was purchased in 1999 by Mark Holt, President, who changed the company into a world-class manufacturer of fermentation feed. An innovative company with many new discoveries in applied microbiology and fermentation chemistry put Vi-COR first in the market to develop a concentrated and liquid yeast culture and first to identify and guarantee metabolites associated with the benefits of yeast culture. This specialized process developing Celmanax can be seen in the health of your animals, production improvements, and return on investment and profitability. Vi-COR is currently doing business globally in over 40 countries.

Western Yeast Company
305 W Ash St
Chillicothe, IL 61523-1603
http://www.westernyeast.com
Booth(s): 416

Western Yeast Company was founded in 1932 and uses the Newhaven process for making yeast culture. This process makes live yeast cultures the old-fashioned way with no added carriers after double fermentation. Western Yeast Culture is an active, all-natural feed supplement designed specifically to improve animal nutrition.

Zinpro
10400 Viking Drive Suite 240
Eden Prairie, MN 55344
http://www.zinpro.com
Booth(s): 710, 809

Zinpro Performance Minerals are uniquely designed and manufactured to be the highest bioavailable trace mineral products on the market.

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ADSA Corporate Sustaining Members

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Wesfalia Surge Inc.
Zook Nutrition and Management Inc.

Thank you for your support!

NOTES

Downtown Phoenix

1. Hyatt Regency Phoenix
(ADSA HQ)

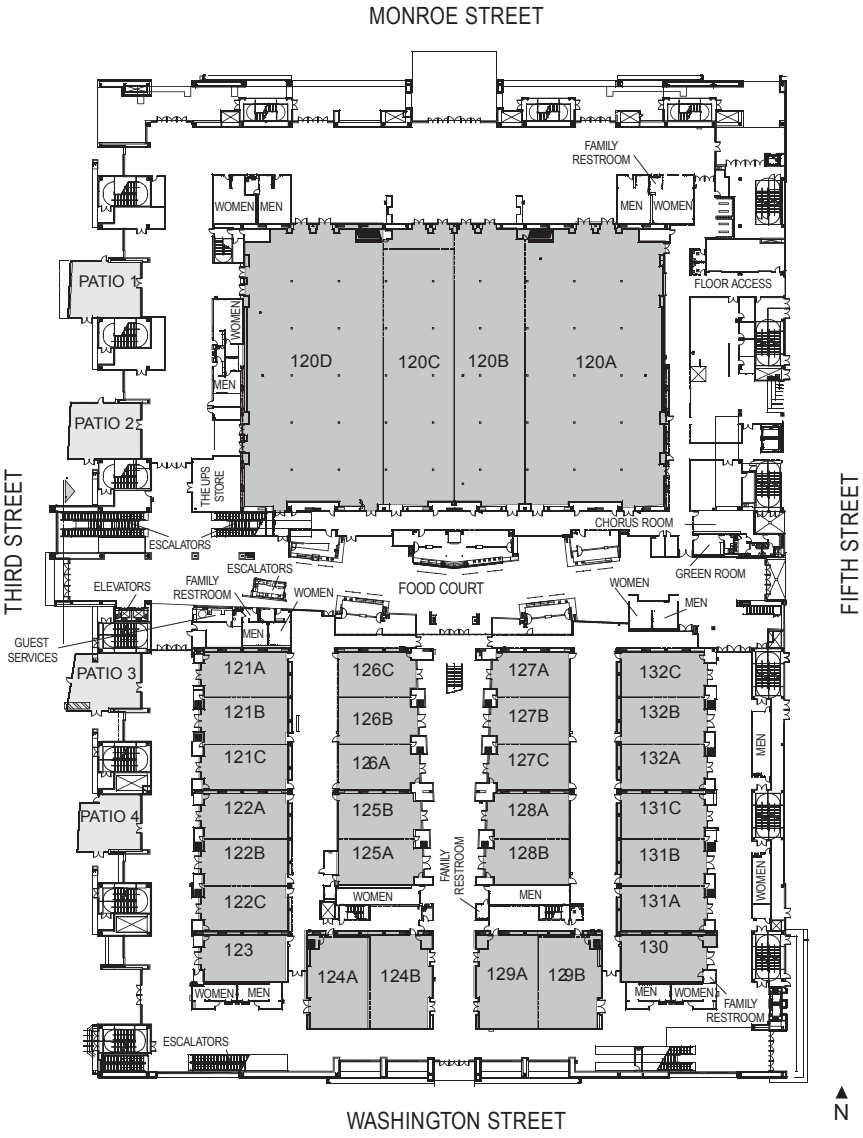
2. Sheraton Phoenix Downtown
(ASAS HQ)

3. Renaissance Phoenix
(CSAS HQ)

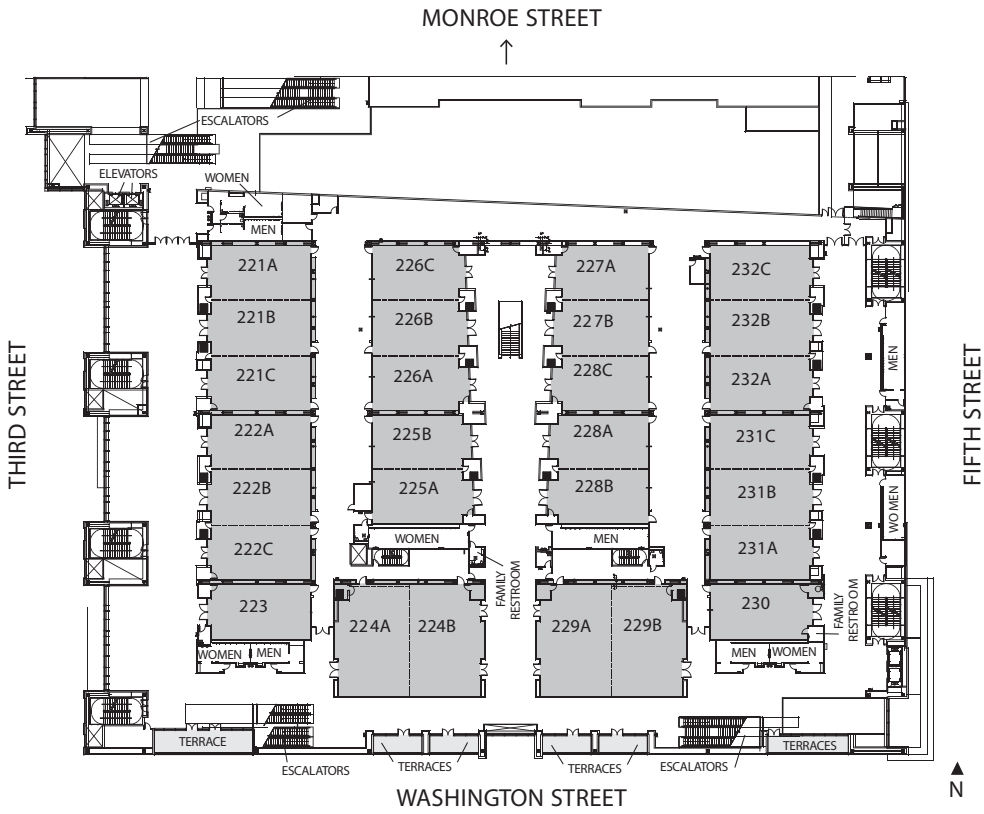
4. Springhill Suites
(Student HQ)

Phoenix Convention Center Map

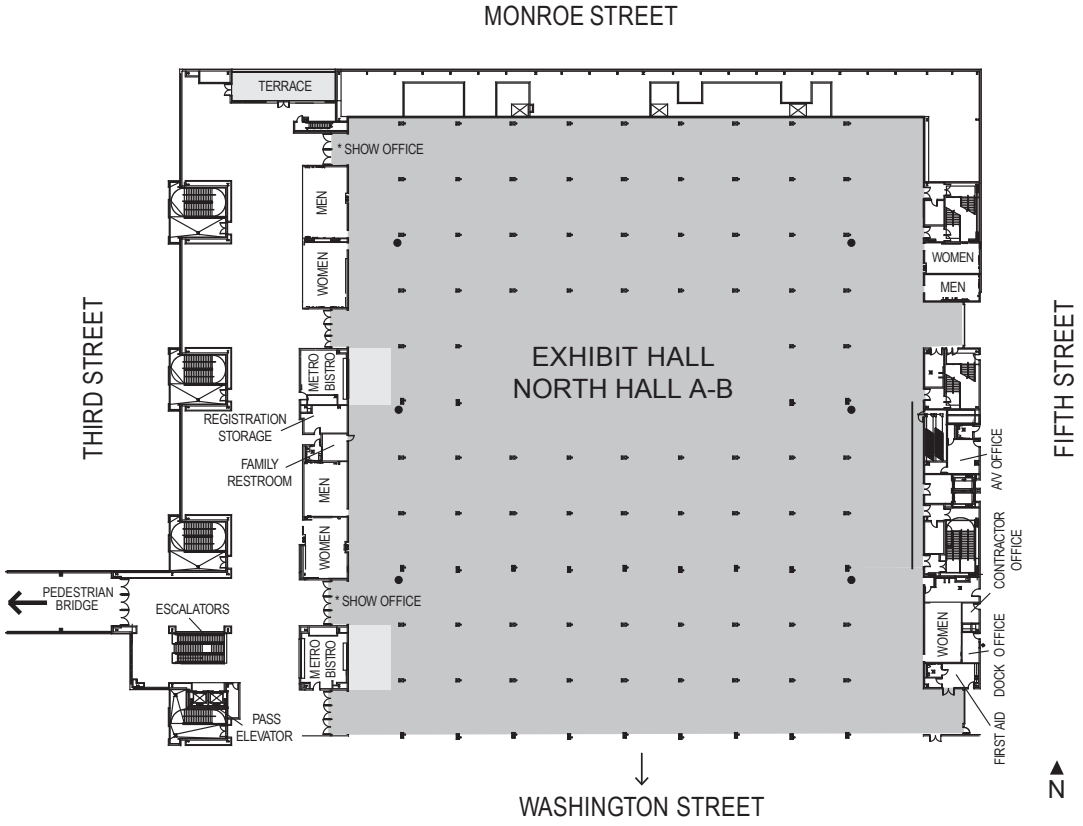
1st Floor



2nd Floor

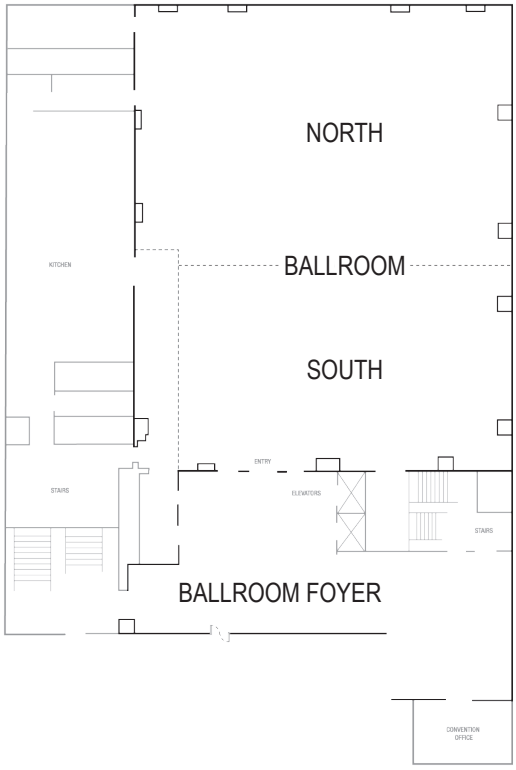


3rd Floor

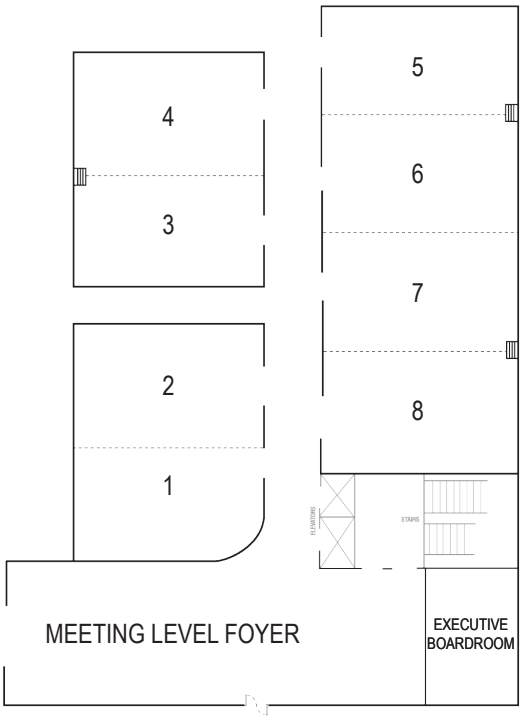


Renaissance Phoenix (CSAS HQ Hotel)

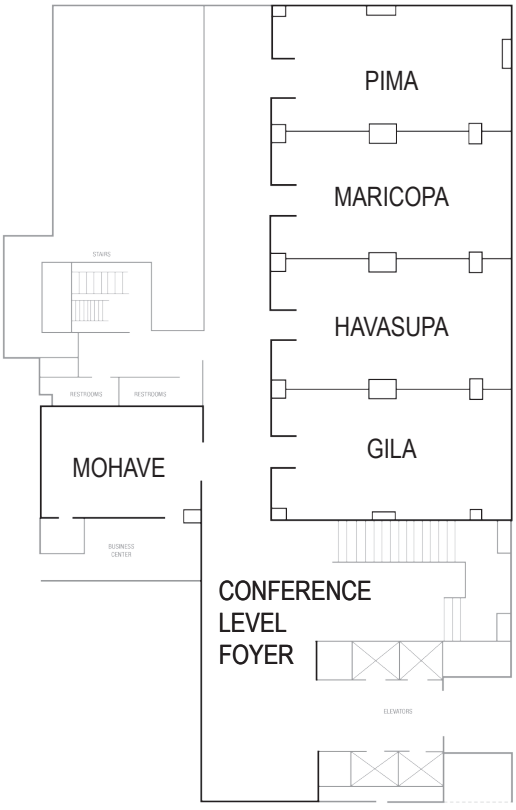
Ballroom Level



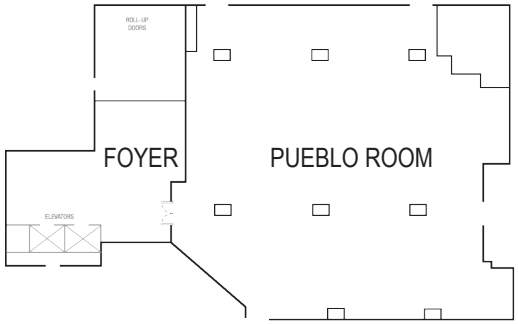
Meeting Level



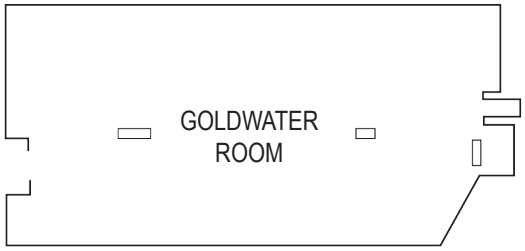
Conference Level



Street Level

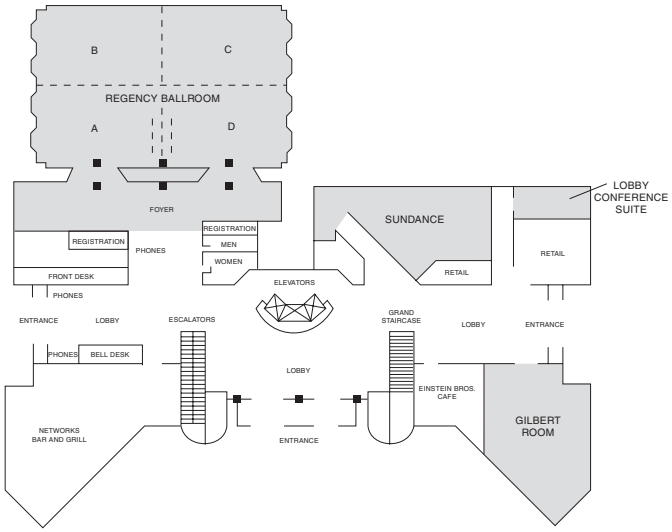


Lobby Level

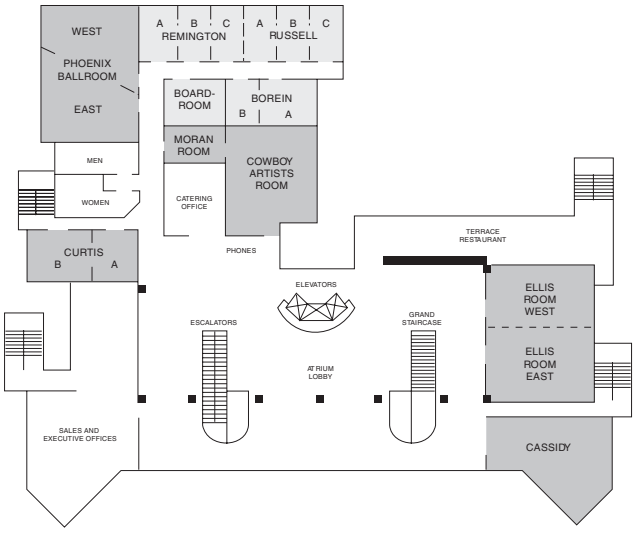


Hyatt Regency Phoenix (ADSA HQ Hotel)

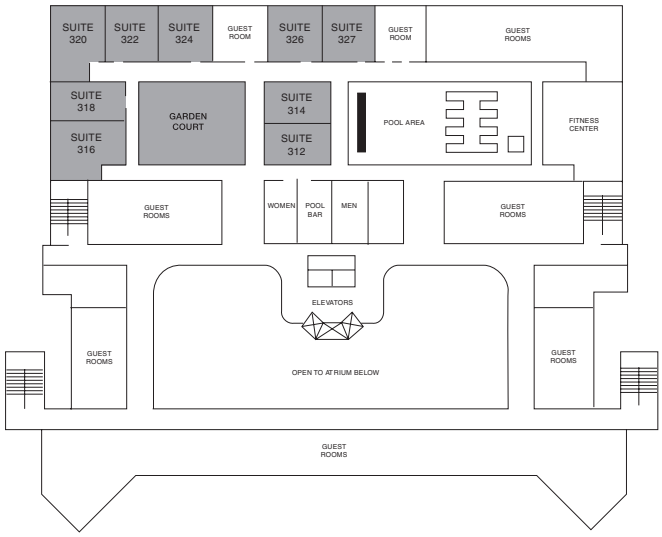
1st Floor



2nd Floor

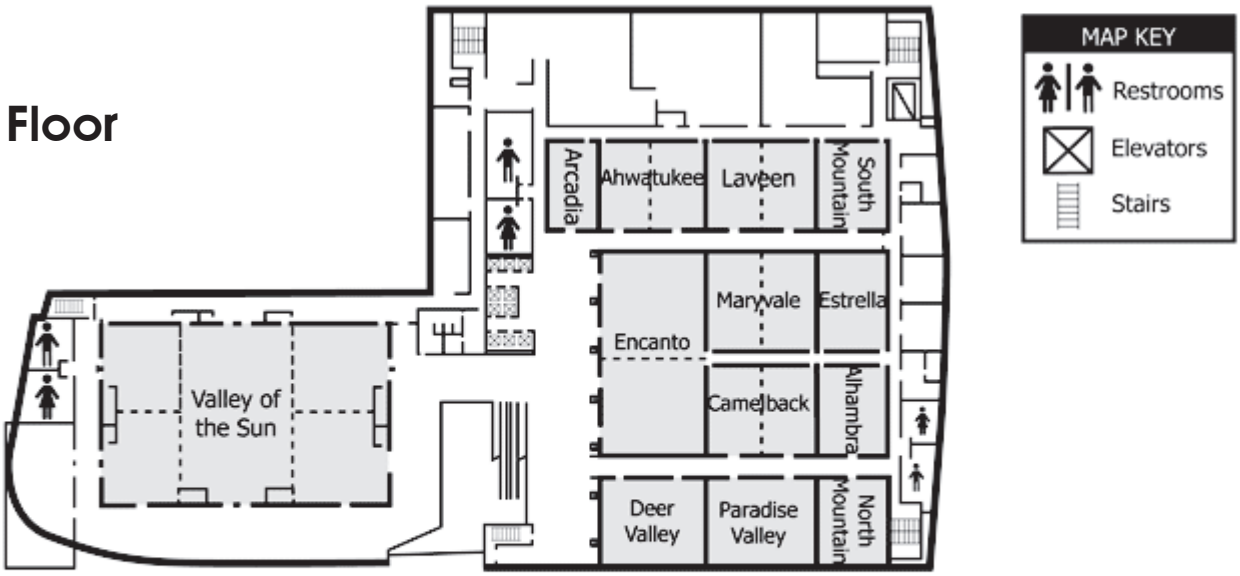


3rd Floor

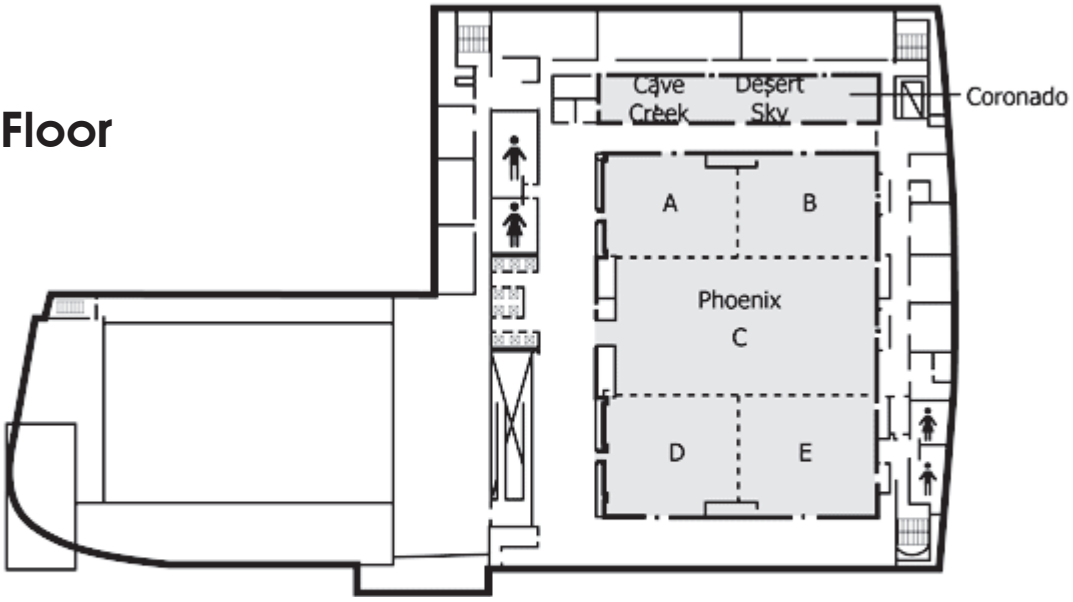


Sheraton Phoenix Downtown (ASAS HQ Hotel)

2nd Floor



3rd Floor



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American Society of Nutrition
American Society of Animal Science (ASAS)
ASAS Foundation
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Diamond V
United Soybean Board
USDA-National Institute of Food and Agriculture

Silver Level

American Registry of Professional Animal Scientists (ARPAS)
BASF
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West Central

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Adisseo
Ajinomoto Heartland Inc.
Archer Daniels Midland
Asociacion Argentina de Produccion Animal (AAPA)
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Western College of Veterinary Medicine, University of Saskatchewan

NOTES

Schedule of Events

Scheduling and locations are subject to change without notice.
Please check the onsite newsletter each morning for changes.

Monday, July 9 - Friday, July 13

8:00 am – 5:00 pm	Genetics course: Genomic Selection in Livestock	Sheraton Phoenix

Saturday, July 14

All day	ASAS Undergraduate Academic Quadrathlon	University of Arizona, Tucson
7:00 am – 8:00 am	ASAS Membership Committee Meeting	Sheraton Phoenix, South Mountain
7:30 am – 5:00 pm	ADSA Board of Directors Meeting	Hyatt Regency Phoenix, Sundance
8:00 am – 9:00 am	ASAS New Board Orientation	Sheraton Phoenix, South Mountain
9:30 am – 5:30 pm	ASAS Board of Directors Meeting	Sheraton Phoenix, Estrella
1:00 pm – 5:00 pm	ADSA-SAD-GSD Student Dairy Farm Tour	Springhill Suites Lobby
3:00 pm – 5:00 pm	Registration open (preregistered, badge and material pick-up only)	Convention Center, North Hall AB Lobbies
3:00 pm – 5:00 pm	ARPAS Executive Committee Meeting	Location TBD
5:00 pm – 8:00 pm	ARPAS Executive Committee Dinner	Location TBD
7:00 pm	ADSA-SAD Student Informal Mixer	Majerle's Sports Grill, 24 N 2nd St

Sunday, July 15

All day	ASAS Undergraduate Academic Quadrathlon	Sheraton Phoenix
7:00 am – 7:00 pm	Registration open	Convention Center, North Hall AB Lobbies
7:30 am – 10:00 am	ADSA New Board Orientation	Hyatt Regency Phoenix, Cassidy
8:00 am – 12:30 pm	ASAS Board of Directors Meeting	Sheraton Phoenix, Estrella
8:00 am – 5:00 pm	ARPAS Governing Board Meeting	Hyatt Regency Phoenix, Ellis East
8:00 am – 5:00 pm	Triennial Reproduction Symposium	Convention Center, 121AB
8:00 am – 5:00 pm	American Society for Nutrition (ASN), ASAS, and ADSA Pre-conference Symposium	Convention Center, 222AB and 222C
10:00 am – 6:00 pm	Exhibit Set Up	Convention Center, North Hall AB
10:00 am – 6:00 pm	Student Dairy Clubs Set Up Exhibits	Convention Center, North Hall AB
10:00 am – 11:00 am	ADSA-SAD Officers and Advisor Meeting	Convention Center, 231B
11:00 am – 12:00 pm	ADSA-SAD Quiz Bowl Officials Meeting	Convention Center, 231A
11:30 am – 12:00 pm	ADSA-SAD Quiz Bowl Seating Test	Convention Center, 224AB
12:00 pm – 5:00 pm	Hospitality Lounge open	Convention Center, 221C
12:00 pm – 1:00 pm	ADSA-SAD Student Midday Mixer	Convention Center, 224AB
12:00 pm – 1:00 pm	ADSA JDS Editors and Journal Management Committee Lunch	Hyatt Regency Phoenix, Ellis West
1:00 pm – 3:00 pm	2012 and 2013 Program Committee Meeting	Convention Center, 122C
1:00 pm – 5:00 pm	ADSA Journal Management Committee Meeting	Hyatt Regency Phoenix, Ellis West
1:00 pm – 5:00 pm	ADSA-SAD Quiz Bowl Seating/Preliminary Rounds	Convention Center, 231A and 231C
1:00 pm – 6:00 pm	CSAS Executive Committee Meeting	Renaissance Phoenix, Salon 1
2:00 pm – 3:00 pm	ADSA Production Division Council Meeting	Convention Center, 121C
2:00 pm – 4:00 pm	ADSA Foundation Board of Trustees Meeting	Hyatt Regency Phoenix, Cassidy
3:00 pm – 4:00 pm	ADSA Production Division Nominating Committee	Convention Center, 121C
3:00 pm – 5:00 pm	Late-Breaking Original Research Session	Convention Center, 122AB
3:00 pm – 6:00 pm	ASAS Department Heads Meeting	Sheraton Phoenix, Maryvale A
3:30 pm – 6:30 pm	WSASAS Executive Board Meeting	Sheraton Phoenix, Estrella
4:30 pm – 5:30 pm	ADSA-South American Branch (SAB) Discussion Group (open to all)	Convention Center, 122C
5:00 pm – 6:00 pm	ADSA Dairy Foods Division Council Meeting	Convention Center, 121C
5:30 pm – 6:00 pm	ADSA-SAD Quiz Bowl Final Round	Convention Center, 231A

6:00 pm – 6:45 pm	ADSA Graduate Student Division Business Meeting and Open Forum	Convention Center, 231C
7:00 pm – 8:15 pm	JAM Opening Session	Convention Center, Symphony Hall
8:15 pm – 10:00 pm	JAM Opening Reception.	Convention Center, North 120A-D

Monday, July 16

All day	ASAS Undergraduate Academic Quadrathlon	Sheraton Phoenix
6:30 am – 8:00 am	ADSA Dairy Specialists/Dairy-Related Participants Breakfast	Hyatt Regency Phoenix, Remington
6:30 am – 5:15 pm	Registration open	Convention Center, North Hall AB Lobbies
7:00 am – 8:15 am	ADSA-SAD Exhibit Set-Up.	Convention Center, North Hall AB
7:30 am – 9:30 am	Poster Presentations.	Convention Center, North Hall AB
8:00 am – 9:00 am	Johne's Disease Interest Group.	Convention Center, 230
8:00 am – 5:00 pm	Commercial Exhibits and ADSA-SAD Exhibits open	Convention Center, North Hall AB
8:00 am – 5:00 pm	Job Resource Center open	Convention Center, North Hall AB
8:00 am – 5:00 pm	Hospitality Lounge open	Convention Center, 221C
8:20 am – 5:00 pm	WSASAS Graduate Student Competition	Convention Center, 227AB
8:30 am – 9:15 am	ADSA-SAD Business Meeting	Convention Center, 231A
9:30 am – 10:30 am	ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports	Convention Center, 230
9:30 am – 10:30 am	ADSA-SAD Interviews for Outstanding Student and Advisor Awards	Convention Center, 231B
9:30 am – 10:30 am	Discover Conference Steering Committee	Convention Center, 229B
9:30 am – 10:45 am	ADSA-SAD Activities Symposium	Convention Center, 231A
9:30 am – 5:00 pm	Scientific Sessions	Convention Center
10:30 am – 12:30 pm	ARPAS Exam.	Convention Center, 130
11:00 am – 5:00 pm	ADSA-SAD Undergraduate Paper Presentations	Convention Center, 231A and 231C
12:30 pm – 2:00 pm	ADSA Graduate Student Division Career Insights Lunch.	Convention Center, 229B
12:30 pm – 2:00 pm	ASAS Past Presidents' Lunch	Sheraton Phoenix, Valley of the Sun D
12:30 pm – 2:00 pm	ADSA Past Presidents' Lunch	Hyatt Regency Phoenix, Cassidy
12:30 pm – 2:00 pm	ASAS Publications Committee Luncheon	Sheraton Phoenix, Valley of the Sun E
12:30 pm – 2:00 pm	ASAS Undergraduate Pizza Party	Convention Center, 229A
12:30 pm – 2:00 pm	American College of Animal Science Annual Meeting	Convention Center, 130
2:00 pm – 4:00 pm	ARPAS Exam.	Convention Center, 130
2:00 pm – 5:30 pm	Southern Branch ADSA Symposium and Business Meeting.	Convention Center, 225AB
3:00 pm – 4:00 pm	ASAS Talks Change	Convention Center, 129AB
5:00 pm – 6:00 pm	FASS Science Policy Program Update	Convention Center, 127C
5:00 pm – 6:00 pm	USDA-ARS Staff Update Session.	Convention Center, 222C
5:00 pm – 7:00 pm	Informal Calf Gathering	Hyatt Regency Phoenix, Phoenix
5:30 pm – 7:00 pm	ASAS Award Winners Dinner and Photo Session	Sheraton Phoenix, Deer Valley
6:30 pm	ADSA-SAD Student Mixer: Pool Party	Springhill Suites, Poolside
6:30 pm – 7:00 pm	ASAS President's Picks	Sheraton Phoenix, Valley of the Sun foyer
7:00 pm – 8:30 pm	ASAS Awards Program.	Sheraton Phoenix, Valley of the Sun ABC
8:00 pm – 11:00 pm	Iowa State Reception	Sheraton Phoenix, Paradise Valley
8:30 pm	ASAS Awards Celebration.	Sheraton Phoenix, Valley of the Sun DE
8:30 pm	ASAS Undergraduate Academic Quadrathlon Finals	Sheraton Phoenix
9:00 pm	ASAS Graduate Student Mixer	Crescent Ballroom, 308 N. 2nd Ave., Phoenix

Tuesday, July 17

6:30 am – 8:00 am	Penn State Breakfast.	Hyatt Regency Phoenix, Remington
6:30 am – 8:00 am	University of Illinois Breakfast	Sheraton Phoenix, Maryvale A

6:30 am – 8:00 am	Kentucky Breakfast	Sheraton Phoenix
6:30 am – 8:00 am	JDS Editorial Board Breakfast/Meeting	Hyatt Regency Phoenix, Curtis AB
7:00 am – 5:15 pm	Registration open	Convention Center, North Hall AB Lobbies
7:30 am – 9:30 am	Poster Presentations	Convention Center, North Hall AB
8:00 am – 9:00 am	ADSA Spokesperson/Media Training	Convention Center, 232A
8:00 am – 9:00 am	ASAS Investment Committee Meeting	Sheraton Phoenix, South Mountain
8:00 am – 5:00 pm	Commercial Exhibits and ADSA-SAD Exhibits open	Convention Center, North Hall AB
8:00 am – 5:00 pm	Job Resource Center open	Convention Center, North Hall AB
8:00 am – 5:00 pm	Hospitality Lounge open	Convention Center, 221C
8:30 am – 9:30 am	ADSA-SAD Business Meeting–Elec. of Officers	Convention Center, 231A
9:00 am – 1:00 pm	Spouse Event: Phoenix Architecture Tour	Meet in Hyatt Regency Lobby
9:30 am – 11:00 am	ADSA-SAD Career Roundtable	Convention Center, 232BC
9:30 am – 11:30 am	ASAS Foundation Board of Trustees Meeting	Sheraton Phoenix, South Mountain
9:30 am – 12:30 pm	ARPAS Symposium	Convention Center, 125AB
9:30 am – 5:00 pm	Scientific Sessions	Convention Center
11:30 am – 12:30 pm	ADSA Production Division Business Meeting	Convention Center, 231A
11:30 am – 12:30 pm	ADSA Dairy Foods Division Business Meeting	Convention Center, 121C
11:45 am – 2:00 pm	ADSA-SAD Awards Lunch	Convention Center, 224AB
12:30 pm – 2:00 pm	ASAS Foundation Heritage Lunch	Convention Center, 229B
12:30 pm – 2:00 pm	ADSA DF Division Milk Proteins and Enzyme Committee	Convention Center, 231B
12:30 pm – 2:00 pm	ARPAS Business Meeting	Convention Center, 125AB
12:30 pm – 2:00 pm	ADSA DF Division Program Planning Lunch	Convention Center, 232A
12:30 pm – 2:00 pm	ASAS Graduate Student Lunch and Learn	Convention Center, 229A
12:30 pm – 2:00 pm	CSAS Annual General Meeting and Lunch	Renaissance Phoenix, Salon 8
2:00 pm – 3:00 pm	ADSA-SAD Award and Club Photos	Convention Center, 232BC
2:00 pm – 4:00 pm	ARPAS Exam	Convention Center, 130
2:00 pm – 6:00 pm	NE ASAS/ADSA Symposium, Business Meeting, Reception & Awards	Convention Center, 122C
2:30 pm – 3:30 pm	ADSA-SAD Committee Meeting – Old and New Officers and Advisors	Convention Center, 231B
3:00 pm – 4:30 pm	ADSA Graduate Student Division Dairy Tales	Convention Center, 231A
4:00 pm – 5:00 pm	ASAS JAS/Animal Frontiers Editorial Meeting, Open Forum, and Animal Frontiers Birthday Celebration	Convention Center, 231C
5:00 pm – 6:00 pm	AnimalSmart.org Launch	Convention Center, 222C
5:00 pm – 6:00 pm	AMPA Meeting	Convention Center, 127C
5:00 pm – 6:30 pm	ADSA Award Donor Dinner	Hyatt Regency Phoenix, 2nd floor Atrium
7:00 pm – 8:00 pm	ADSA Awards Program	Hyatt Regency Phoenix, Regency Ballroom
8:15 pm – 9:30 pm	JAM Ice Cream Social, sponsored by ADSA	Hyatt Regency Phoenix, 2nd floor Atrium
9:00 pm – 12:00 am	ADSA Graduate Student Division Mixer	Brick, 455 North 3rd Street, Phoenix

Wednesday, July 18

6:30 am – 8:00 am	Purdue University Breakfast	Sheraton Phoenix
7:00 am – 5:15 pm	Registration open	Convention Center, North Hall AB Lobbies
7:30 am – 9:30 am	Poster Presentations	Convention Center, North Hall AB
8:00 am – 9:00 am	S-PAC Users Meeting	Convention Center, 232A
8:00 am – 2:00 pm	Job Resource Center open	Convention Center, North Hall AB
8:00 am – 2:00 pm	Commercial Exhibits open	Convention Center, North Hall AB
8:00 am – 5:00 pm	Hospitality Lounge open	Convention Center, 221C
9:30 am – 10:30 am	ASAS Business Meeting	Convention Center, 225AB
9:30 am – 10:30 am	ADSA Business Meeting	Convention Center, 223
10:30 am – 12:30 pm	ARPAS Exam	Convention Center, 130
10:30 am – 5:00 pm	Scientific Sessions	Convention Center
12:30 pm – 2:00 pm	WSASAS Graduate Student Lunch and Learn	Convention Center, 229A

12:30 pm – 2:30 pm	ADSA Board of Directors Meeting	Hyatt Regency Phoenix, Sundance
2:00 pm – 5:00 pm	Commercial Exhibits Dismantle	Convention Center, North Hall AB
2:30 pm – 4:30 pm	ASAS Board of Directors Meeting	Sheraton Phoenix, Estrella
4:30 pm – 6:00 pm	Global Networking Reception	Convention Center, 224AB
6:00 pm – 9:00 pm	CSAS Awards Banquet	Renaissance Phoenix, South Ballroom
6:00 pm – 10:00 pm	WSASAS Awards Banquet	Alice Cooperstown, 101 E. Jackson
9:00 pm – 12:00 am	Alltech/CSAS Graduate Student Mixer	Renaissance Phoenix, South Ballroom

Thursday, July 19

7:30 am – 9:30 am	WSASAS Business Meeting	Sheraton Phoenix, South Mountain
8:00 am – 1:00 pm	Registration open	Convention Center, North Hall AB Lobbies
8:30 am – 11:30 am	Scientific Sessions	Convention Center
8:30 am – 11:30 am	Breaking into NSF: Buzz words, key phrases, and what the National Science Foundation wants in a grant	Convention Center, 127C
10:00 am – 12:00 pm	WSASAS Executive Board Post-Conference Meeting	Sheraton Phoenix, Maryvale A
12:00 pm – 5:00 pm	W1010 Meeting	Sheraton Phoenix, Maryvale A
2:00 pm – 5:00 pm	NIFA-AFRI Animal Nutrition, Growth, and Lactation Awardee Meeting	Sheraton Phoenix, South Mountain

Friday, July 20

8:00 am – 5:00 pm	W1010 Meeting	Sheraton Phoenix, Maryvale A
8:00 am – 5:00 pm	NIFA-AFRI Animal Nutrition, Growth, and Lactation Awardee Meeting	Sheraton Phoenix, South Mountain

ADSA Student Affiliate Division Program
SAD Special Events

Saturday, July 14

ADSA SAD-GSD Student Dairy Farm Tour
Saturday, July 14
1:00 – 5:00 pm
Bus departs from Springhill Suites
Departing from the lobby of the SAD hotel, we'll go via motor coach to a Phoenix area dairy. Ticket price includes transportation and refreshments.

SAD Student Informal Mixer: Majerle's Sports Grill
Saturday, July 14
7:00 pm
Meet in Springhill Suites lobby or at Majerle's, 24 N. 2nd Street, Phoenix
Meet in the lobby of Springhill Suites at 6:30 pm or at the restaurant at 7:00 pm. Jump start the week with good food, good music, and good friends at the Saturday student mixer. Ticket price includes dinner.

Sunday, July 15

SAD Undergraduate Midday Mixer and Lunch
12:00 – 1:00 pm
Convention Center, 224AB
Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends, and get to know your 2012–2013 officer candidates. Lunch includes southwestern fare and drinks. Registration is limited to undergraduate students and advisors.

SAD-Dairy Quiz Bowl Final Round
5:30 – 6:00 pm
Convention Center, 231A
On Sunday, university teams from across North America will compete in the ADSA 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 2012 Dairy Quiz Bowl Winning Team.

Monday, July 16

ADSA-SAD Student Mixer
6:30 pm
Poolside, Springhill Suites
802 East Van Buren Street
Celebrate a great week at ADSA! Rock the night away with good music, good food and good friends, all poolside on a balmy Arizona night – it doesn't get any better than this! Ticket price includes soft drinks and snacks. Don't miss this perennial highlight of the meeting!

Tuesday, July 17

SAD Career Roundtable
9:30 – 11:00 am
Convention Center, 232BC
Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan to visit industry reps in the exhibit hall for information about internships and job opportunities.

SAD Awards Lunch
11:45 am – 2:00 pm
Convention Center, 224AB
Plan to attend this year's SAD awards lunch. 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.

SAD Schedule of Events

Scheduling and location are subject to change without notice.
Consult the meeting website (http://www.adsa.org/sad.asp) for the latest program information.

Saturday, July 14

1:00 – 5:00 pm	ADSA SAD-GSD Student Dairy Tour: Shamrock Farms	Meet in Springhill Suites lobby
3:00 pm – 5:00 pm	Registration Open (preregistered, badge and material pick-up only)	Convention Center
7:00 pm	SAD Informal Gathering	Majerle's Sports Grill, 24 N 2nd Street

Sunday, July 15

7:00 am – 7:00 pm	Registration Open	Convention Center, North Hall AB lobbies
10:00am – 6:00 pm	SAD Dairy Clubs Set Up Exhibits	Convention Center, North Hall AB
10:00 am – 11:00 am	SAD Officers and Advisor Meeting	Convention Center , 231B
11:00 am – 12:00 pm	Dairy Quiz Bowl Officials Meeting	Convention Center, 231A
11:30 am – 12:00 pm	Dairy Quiz Bowl Seating Test	Convention Center, 224AB

12:00 pm – 1:00 pm	SAD Midday Mixer & Pizza Party	Convention Center, 224AB
1:00 pm – 5:00 pm	Dairy Quiz Bowl Preliminary Rounds	Convention Center, 231A and 231C
5:30 pm – 6:00 pm	Dairy Quiz Bowl Final Round	Convention Center, 231A
7:00 pm	ADSA Opening Session & Reception	Convention Center, Symphony Hall and North 120A-D

Monday, July 16

7:00 am - 8:15 am	SAD Dairy Clubs Set Up Exhibits	Convention Center, North Hall AB
7:30 am – 9:30 am	Poster Presentations	Convention Center, North Hall AB
8:00 am – 6:00 pm	Commercial Exhibits and ADSA-SAD Exhibits Open	Convention Center, North Hall AB
8:30 am – 9:15 am	SAD Business Meeting	Convention Center, 231A
9:30 am – 10:30 am	SAD Judging of Yearbooks, Scrapbooks and Annual Reports	Convention Center, 230
9:30 am – 10:30 am	SAD Interviews for Outstanding Student and Advisor Awards	Convention Center, 231B
9:30 am – 10:45 am	SAD Activities Symposium	Convention Center, 231A
9:30 am – 5:00 pm	Scientific Sessions	Convention Center
11:00 am – 5:00 pm	SAD Undergraduate Paper Presentations	Convention Center, 231A and 231C
6:30 pm	SAD Mixer	Springhill Suites, Poolside

Tuesday, July 17

7:30 am – 9:30 am	Poster Presentations	Convention Center, North Hall AB
8:00 am – 5:00 pm	Commercial Exhibits and ADSA-SAD Exhibits Open	Convention Center, North Hall AB
8:30 am – 9:30 am	SAD Business Meeting – Election of Officers	Convention Center, 231A
9:30 am - 11:00 am	SAD Career Roundtable	Convention Center, 232BC
11:45 pm – 2:00 pm	SAD Awards Luncheon	Convention Center, 224AB
2:00 pm – 3:00 pm	SAD Award & Club Photos	Convention Center, 232BC
2:00 pm – 5:00 pm	Tear-down SAD Exhibits	Convention Center, North Hall AB
2:30 pm – 3:30 pm	SAD Committee Meeting – Old and New Officers & Advisors	Convention Center, 231B
3:00 pm – 5:00 pm	Open to attend Scientific Sessions	Convention Center
7:00 pm – 8:00 pm	ADSA Awards Ceremony	Hyatt Regency Phoenix, Regency Ballroom
8:15 pm – 9:30 pm	Ice Cream Social	Hyatt Regency Phoenix, 2nd floor Atrium

ADSA Dairy Foods Division Schedule of Events

All rooms are at the Convention Center, unless otherwise noted.
Scheduling and location are subject to change without notice. Please check the onsite newsletter each morning for changes.

Sunday, July 15

5:00 pm – 6:00 pm	ADSA Dairy Foods Division Council Meeting, 121C

Monday, July 16

7:30 am – 9:30 am	Posters: Dairy Foods, Exhibit Hall
7:30 am – 9:30 am	Posters: Graduate Student Competition: ADSA Dairy Foods Poster Competition, Exhibit Hall
9:30 am – 12:30 pm	Dairy Foods: Cheese and products processing, 121C
9:30 am – 12:30 pm	Graduate Student Competition: ADSA Dairy Foods Oral Competition, 122C
11:00 am – 12:30 pm	ADSA-SAD Dairy Foods Undergraduate Competition, 231A
2:00 pm – 5:00 pm	Symposium: Dairy Foods: Maximizing value of milk proteins – Manufacture, applications and market opportunities for milk protein concentrate, 121AB

Tuesday, July 17

7:30 am – 9:30 am	Posters: Dairy Foods: Cheese and dairy products, Exhibit Hall
11:30 am – 12:30 pm	ADSA Dairy Foods Division Business Meeting, 121C
12:30 pm – 2:00 pm	ADSA DF Division Program Planning Lunch, 232A
12:30 pm – 2:00 pm	ADSA DF Division Milk Protein and Enzyme Committee, 231B
2:00 pm – 5:00 pm	Symposium: Dairy Foods: Bioactive Components in Milk and Dairy Products: Recent International Perspectives and Progress in Different Dairy Species, 122AB

Wednesday, July 18

7:30 am – 9:30 am	Posters: Dairy Foods: Microbiology and chemistry, Exhibit Hall
9:30 am – 12:30 pm	Dairy Foods: Microbiology and chemistry, 122AB
9:30 am – 12:30 pm	Dairy Foods: Physicochemical properties, 122C
2:00 pm – 5:00 pm	Symposium: Dairy Foods: Advances in yogurt manufacture and product functionalities, 122AB

2012 ASAS National Academic Quadrathlon

July 13

Teams meet in Tucson, Arizona. University of Arizona will provide dinner and evening entertainment.

July 14

Lab practicum and written exam competitions. Teams meet at University of Arizona Livestock Facilities.

July 15

Oral presentations and Western Section Quiz Bowl. Teams meet on second floor of Sheraton Phoenix Downtown.

July 16

Morning: National Quiz Bowl Competition. Meet on second floor of Sheraton Phoenix Downtown.
Afternoon: Student pizza lunch organized by the ASAS Graduate Student Directors.
Evening: National Quiz Bowl Finals at Sheraton Phoenix after ASAS Awards Ceremony.

Workshop on Genomic Selection in Livestock

July 9-13, 2012

Sheraton Hotel, Phoenix, AZ
Course instructors: Dorian Garrick, Rohan Fernando, and Jack Dekkers (Iowa State University).
The purpose of the course is to provide graduate students and professionals in animal breeding and genetics with the basic theory and practical application of using whole genome SNP data for genetic evaluation and genome-wide association studies, using mixed linear and Bayesian methods. This course contributes to a graduate-level distance delivery curriculum in animal breeding and genetics, which is being developed with funding from the USDA-NIFA Higher Education Challenge Grants Program. Over the next three years, a consortium of seven universities (Virginia Tech, Colorado State, Iowa State, North Carolina State, and Kansas State Universities, and Universities of Nebraska-Lincoln and Georgia) will be engaged in the design and delivery of a series of asynchronous online courses, and several summer short-courses, focused on the integration of quantitative and molecular aspects of genetics. For information about the curriculum, contact Ron Lewis (rmlewis@vt.edu) or visit the website: http://jtmtg.org/2012/genomic.asp

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Sunday, July 15

SYMPOSIA AND ORAL SESSIONS

ASN-ADSA-ASAS Preconference
Regulation of Nutritional Intake and Metabolism
Chairs: James L. Sartin, President Elect, ASAS, and Teresa A. Davis, President Elect, ASN
Sponsors: ASAS Foundation, ASN, EAAP, and United Soybean Board
222AB

8:00 AM		**Opening and Welcome.** J. L. Sartin[1] and T. A. Davis[2], [1]*American Society of Animal Science*, [2]*American Society for Nutrition*.
8:10 AM	1	**Role of the central melanocortin system in appetite regulation and nutrient homeostasis.** B. L. Panaro and R. D. Cone*, *Department of Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN*.
9:00 AM	2	**The regulation of hepatic glucose uptake in vivo.** A. Cherrington*, *Vanderbilt University School of Medicine, Nashville, TN*.
9:50 AM	3	**EAAP-ASAS Speaker Exchange Presentation: Active and reactive amino acid homeostasis during feeding, lactation, and disease.** G. E. Lobley*, *Obesity and Metabolic Health Division, Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, UK*.
10:40 AM		**Break**
11:00 AM	4	**Adipose and endocrine integration of metabolism.** P. E. Scherer*, *UT Southwestern Medical Center, Dallas, TX*.
11:50 AM		**Lunch and Graduate Student Poster Competition.**
1:20 PM	5	**Heat stress and post-absorptive metabolic perturbations.** L. H. Baumgard*[1] and R. P. Rhoads[2], [1]*Iowa State University, Ames*, [2]*Virginia Polytechnic Institute and State University, Blacksburg*.
2:10 PM	6	**Linoleic acid and inflammation: Evidence-based research from human clinical studies.** K. L. Fritsche*[1] and G. H. Johnson[2], [1]*University of Missouri, Columbia*, [2]*Johnson Nutrition Solutions, Kalamazoo, MI*.
3:00 PM		**Break**
3:20 PM	7	**Microbial hydrogen metabolism in colonic health and disease.** H. R. Gaskins*, *University of Illinois, Urbana-Champaign*.
4:10 PM	8	**Characterizing the cellular mechanisms of postprandial thermogenesis in skeletal muscle.** B. A. Henry* and I. J. Clarke, *Department of Physiology, Monash University, Victoria, Australia*.
5:00 PM		**Closing Comments.** J. L. Sartin[1] and T. A. Davis[2], [1]*American Society of Animal Science*, [2]*American Society for Nutrition*.

Triennial Reproduction Symposium
Impediments to Fertility in Domestic Animals
Chair: Gregory Lewis, USDA-ARS
Sponsors: ASAS Foundation, Elanco Animal Health, and Pfizer Animal Health
121AB

8:00 AM		**Introduction**
8:10 AM	9	**The obstacle course to successful establishment of pregnancy in domestic livestock species.** M. D. Utt and M. L. Day*, *Department of Animal Sciences, The Ohio State University, Columbus*.
8:55 AM	10	**Sperm characteristics that limit success of fertilization.** W. L. Flowers*, *North Carolina State University, Raleigh*.

9:40 AM		**Break**
10:00 AM	11	**The ovarian follicular reserve in ruminants: What regulates its formation and size?** J. E. Fortune*, M. Y. Yang, and J. J. Allen, *Cornell University, Ithaca, NY*.
10:45 AM	12	**Influence of follicle characteristics at ovulation on early embryo survival.** T. W. Geary*[1], M. F. Smith[2], M. D. MacNeil[1], M. L. Day[3], G. A. Bridges[4], G. A. Perry[5], F. M. Abreu[3], J. A. Atkins[2], K. G. Pohler[2], E. M. Jinks[3], and C. A. Roberts[1], [1]*USDA-ARS, Fort Keogh, Miles City, MT*, [2]*Division of Animal Sciences, University of Missouri, Columbia*, [3]*Department of Animal Science, Ohio State University, Columbus*, [4]*Department of Animal Science, University of Minnesota, Grand Rapids*, [5]*Department of Animal and Range Sciences, South Dakota State University, Brookings*.
11:30 AM		**L. E. Casida Award Presentation**
12:00 PM		**Lunch**
1:30 PM	13	**Deficiencies in the uterine environment and failure to support embryo development.** G. A. Bridges*, *University of Minnesota, Grand Rapids*.
2:15 PM	14	**Interactions of the embryo, uterus and corpus luteum for sustenance of embryos.** T. R. Hansen*, A. Q. Antoniazzi, J. J. Romero, R. L. Ashley, and R. C. Bott, *Animal Reproduction and Biotechnology Laboratory, Department of Biomedical Sciences, Colorado State University, Fort Collins*.
3:00 PM		**Break**
3:20 PM	15	**Limitations in uterine and conceptus physiology that lead to fetal losses.** J. L. Vallet*, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.
4:05 PM	16	**The spectrum of factors that impede pregnancy in dairy cows.** R. L. A. Cerri*[1], J. E. P. Santos[2], W. W. Thatcher[2], and J. L. M. Vasconcelos[3], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Florida, Gainesville*, [3]*Sao Paulo State University, Botucatu, SP, Brazil*.
4:50 PM		**General Discussion**

Monday, July 16

POSTER PRESENTATIONS

Animal Health I
Sponsors: Elanco Animal Health and Pfizer Animal Health

M1 **Immunological and metabolic responses of Holstein and Jersey cows according to body condition score change prepartum.**
R. C. Chebel, L. G. D. Mendonça, P. R. B. Silva, and J. G. N. Moraes*, *Department of Veterinary Population Medicine, University of Minnesota, St. Paul*.

M2 **Treatment outcomes for clinical mastitis caused by *E. coli* in a Wisconsin dairy herd.**
M. J. Fuenzalida*[1], W. Oliveira[1], J. Gaska[2], and P. L. Ruegg[1], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*Gaska Dairy Health Services, Columbus, WI*.

M3 **Differential expression of the hepatic and adipose transcriptome in peripartal Friesian cows with endometritis.**
H. Akbar*[1], J. M. Khan[1], S. Meier[2], C. Burke[2], S. McDougall[3], M. Mitchell[4,5], S. L. Rodriguez-Zas[1], R. E. Everts[1], H. A. Lewin[1], J. R. Roche[2], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*DairyNZ Limited, Hamilton, New Zealand*, [3]*Cognosco, Animal Health, Morrinsville, New Zealand*, [4]*Liggins Institute, University of Auckland, Auckland, New Zealand*, [5]*University of Queensland Centre for Clinical Research, Brisbane, St. Lucia, Australia*.

M4 **A comparison of two antibiotics on growth performance in beef cattle treated for bovine respiratory disease (BRD).**
N. O. Minton*[1], L. L. Hawkins[2], and M. S. Kerley[1], [1]*University of Missouri, Columbia*, [2]*Bayer HealthCare, Animal Health, Shawnee Mission, KS*.

M5 **Feedback on data entry errors effect on the maintenance of accurate and consistent dairy health records.**
S. K. Giebel*[1], J. R. Wenz[1], S. A. Poisson[1], C. S. Schneider[2], and D. A. Moore[1], [1]*Department of Veterinary Clinical Sciences, Washington State University, Pullman*, [2]*College of Agricultural and Life Sciences, University of Idaho, Moscow*.

M6 **Impact of water and feed deprivation on physiological parameters in steers.**
J. A. Daniel*[1], P. H. Walz[2], J. A. Carroll[3], T. H. Elsasser[4], and B. K. Whitlock[5], [1]*Berry College, Mount Berry, GA*, [2]*Auburn University, Auburn, AL*, [3]*USDA-ARS Livestock Issues Research Unit, Lubbock, TX*, [4]*USDA-ARS Bovine Functional Genomics Laboratory, Beltsville, MD*, [5]*University of Tennessee, Knoxville*.

M7 **Implementation of health data entry protocols effect on time for data management.**
S. K. Giebel*[1], J. R. Wenz[1], S. A. Poisson[1], C. S. Schneider[2], and D. A. Moore[1], [1]*Department of Veterinary Clinical Sciences, Washington State University, Pullman*, [2]*College of Agricultural and Life Sciences, University of Idaho, Moscow*.

M8 **Transcriptome analysis of liver tissue from calves infected with bovine viral diarrhea virus and *Mannheimia haemolytica*.**
R. L. Mills*[1,2], L. Carlos-Valdez[2], L. O. Burciaga-Robles[2], D. Stein[2], D. L. Step[2], R. W. Fulton[2], U. DeSilva[2], and C. R. Krehbiel[2], [1]*Austin Peay State University, Clarksville, TN*, [2]*Oklahoma State University, Stillwater*.

M9 **Ecology of subclinical ketosis in transition dairy cattle.**
J. A. A. McArt*[1], D. V. Nydam[1], and G. R. Oetzel[2], [1]*Cornell University, Department of Population Medicine and Diagnostic Science, Ithaca, NY*, [2]*School of Veterinary Medicine, University of Wisconsin, Madison*.

M10 **Changes in biomarkers of the nitrooxidative stress response and prolactin signal transduction elements to *E. coli* infection in the mammary gland.**
T. H. Elsasser*[1], A. V. Capuco[1], M. Rinaldi[2], and S. Kahl[1], [1]*USDA-ARS, Beltsville, MD*, [2]*Ghent University, Ghent, Belgium*.

M11 **Associations among subclinical hypocalcemia, neutrophil function, and incidence of uterine disease in dairy cows of low or high risk of developing metritis.**
N. Martinez*[1], F. S. Lima[1], R. S. Bisinotto[1], L. F. Greco[1], E. S. Ribeiro[1], F. Maunsell[2], K. N. Galvão[2], C. A. Risco[2], and J. E. P. Santos[1], [1]*Department of Animal Sciences, University of Florida, Gainesville*, [2]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

M12 **Hepatic and peripheral interferon responses to bovine respiratory disease in feedlot steers.**
J. O. Baggerman*, C. A. Gifford, and C. R. Krehbiel, *Oklahoma State University, Stillwater*.

M13 **Meta-analysis of *Trypanosoma* prevalence in livestock in the Americas.**
Z. J. Simoni[1], H. E. Rodulfo[1], M. De Donato*[1,2], M. I. Takeet[3], S. O. Peters[2,4], and I. G. Imumorin[2], [1]*IIBCA, Universidad de Oriente, Cumana, Venezuela*, [2]*Dept. Animal Science, Cornell University, Ithaca, NY*, [3]*Dept. Veterinary Microbiology & Parasitology, Federal University of Agriculture, Abeokuta, Nigeria*, [4]*Dept. Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria*.

M14 **Cytokine production of isolated CD4+ T-cells from high and low immune responder dairy cows during the peripartum period.**
M. A. Paibomesai* and B. Mallard, *University of Guelph, Guelph, Ontario, Canada*.

M15 **Space allowance influences Holstein bull calf innate immunity after castration.**
L. E. Hulbert[1], M. S. Calvo*[1], M. A. Ballou[2], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

M16 **Effects of *Bacillus cereus* var. *toyoi* (Toyocerin) on the immune system of calves.**
A. Aris*[1], A. Serrano[1], M. Terré[1], G. Jiménez[3], M. Castillo[3], and A. Bach[1,2], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*, [3]*Rubinum SA, Rubí, Spain*.

M17 **Space allowance influences the innate immune responses of Holstein calves during weaning.**
L. E. Hulbert*[1], M. S. Calvo[1], M. A. Ballou[2], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

M18 **Group-housed Holstein bull calves have decreased innate immune responses compared to individually housed calves after surgical castration.**
L. E. Hulbert[1], M. S. Calvo[1], R. A. Kurzbard*[1], M. A. Ballou[1], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

M19 **A transient receptor potential channel 4 (TRPC4) gene to study response to gastrointestinal nematode infection in parasite-resistant goats.**
M. M. Corley* and J. Ward, *Virginia State University, Petersburg*.

M20 **Use of selected blood parameters to identify markers of heat-sensitivity in Angus and Romosinuano heifers.**
R. Chaffin*, B. A. Scharf, J. S. Johnson, J. Bryant, D. Kishore, P. A. Eichen, and D. E. Spiers, *University of Missouri, Columbia*.

M21 **Variation in innate immune parameters in Holstein calves is influenced by housing environment and physiological period.**
M. D. Sellers*, D. L. Hanson, A. R. Pepper-Yowell, C. J. Cobb, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

M22 **Intravaginal administration of lactic acid bacteria modulated innate immune responses of periparturient dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

M23 **Intravaginal administration of a mixture of lactic acid bacteria lowered the incidence of clinical diseases in transition dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

M24 **Acute phase response intensity is related to the metabolic and immunologic statuses of early postpartum dairy cattle.**
C. R. Nightingale*, M. D. Sellers, A. R. Pepper-Yowell, D. L. Hanson, C. J. Cobb, B. S. Obeidat, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

M25 **Isolation and analysis of transient receptor potential channel (TRPC) genes in goats: Implications for study of gastrointestinal nematode infection.**
M. M. Corley and J. Ward*, *Virginia State University, Petersburg*.

Breeding and Genetics
Fertility and Early-Life Traits

M26 **The relationship of herd-average conception rates and calving interval with sire predicted transmitting ability for three fertility traits.**
E. S. Benner and C. D. Dechow*, *Penn State University, University Park*.

M27 **Effect of body condition score at open period on reproductive traits of dairy cows in Hokkaido.**
J. Hirose*, Y. Masuda, and M. Suzuki, *Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.

M28 **Cyclicity and fertility of Holstein, Jersey, and crossbred cows in a fall-calving, pasture-based dairy.**
K. Glosson* and S. Washburn, *North Carolina State University, Raleigh*.

M29 **Genomic differences between highly fertile and sub-fertile Holstein dairy heifers.**
A. E. Navarrette*[1], C. A. Gill[1], T. E. Spencer[2], and T. R. Bilby[1,3], [1]*Department of Animal Science, Texas A&M University, College Station*, [2]*Department of Animal Sciences, Washington State University, Pullman*, [3]*Texas Agrilife Research and Extension, Stephenville*.

M30 **The quality and yield of embryos from Holstein dairy cows in relation to inbreeding.**
J. Bezdicek*[1], A. Makarevich[2], R. Holasek[2], E. Kubovicova[2], Z. Hegedusova[2], and F. Louda[2], [1]*Agroresearch Rapotin, Ltd., Vikyrovice, Czech Republic*, [2]*Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic*.

M31 **Antioxidants in bovine semen cryopreservation.**
M. F. Duarte-Junior, L. K. Hatamoto-Zervoudakis*, J. T. Zervoudakis, P. P. Tsuneda, P. H. D. Gomes, F. M. Wingert, F. A. P. B. Arguello, and W. A. S. Marinho, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

M32 **Extender supplementation with vitamin E and cryopreservation of bull sperm.**
P. P. Tsuneda, L. K. Hatamoto-Zervoudakis*, J. T. Zervoudakis, L. C. M. Soares, M. F. Duarte-Junior, P. H. D. Gomes, and F. M. Wingert, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

M33 **Multibreed genetic evaluation of calving ease and birth weight using a threshold-linear model in Brangus.**
S. Tsuruta*, A. H. Nelson, J. K. Bertrand, and I. Misztal, *University of Georgia, Athens*.

M34 **Expression profiling of testicular sense and antisense RNA transcripts of Brahman bulls.**
K. K. Adams*[1], L. R. Chenault[1], J. Valenta[1], R. N. Vaughn[1], A. K. Torres[1], K. J. Kochan[1], T. H. Welsh[1], R. D. Randel[2], F. M. Rouquette[2], A. D. Herring[1], and P. K. Riggs[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, Overton*.

M35 **Model comparison for genetic parameter estimation of birth and weaning weight traits in beef cattle.**
S. O. Peters*[1,5], K. Kizilkaya[2,3], D. J. Garrick[2], R. L. Fernando[2], E. J. Pollak[4], M. De Donato[1,6], E. Chaffee[1], T. Hussain[7], and I. G. Imumorin[1], [1]*Cornell University, Ithaca, NY*, [2]*Iowa State University, Ames*, [3]*Adnan Menderes University, Aydin, Turkey*, [4]*US Meat Animal Research Center, Clay Center, NE*, [5]*Federal University of Agriculture, Abeokuta, Nigeria*, [6]*Universidad de Oriente, Cumana, Venezuela*, [7]*University of Veterinary and Animal Sciences, Lahore, Pakistan*.

M36 **Genetic parameters of the reproductive traits in Nelore beef cattle.**
C. C. P. Paz*[1,2], H. L. Moreira[2], M. E. Buzanskas[3], L. El Faro[1], R. B. Lôbo[2,4], and D. P. Munari[3], [1]*SAA/APTA, Ribeirão Preto, SP, Brazil*, [2]*USP/FMRP, Ribeirão Preto, SP, Brazil*, [3]*UNESP/FCAV, Jaboticabal, SP Brazil*, [4]*ANCP, Ribeirão Preto, SP, Brazil*.

M37 **Genetic trends for growth-related traits and calving ease of Simmental beef cattle.**
H. M. Saad*[1], W. Shafer[2], and R. M. Enns[1], [1]*Department of Animal Sciences, Colorado State University, Fort Collins*, [2]*American Simmental Association, Bozeman, MT*.

M38 **Estimates of genetic parameters for female fertility traits of Canadian Simmentals.**
J. Jamrozik*[1], S. McGrath[2], R. A. Kemp[2], B. Holmquist[3], and S. P. Miller[1], [1]*CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*RAK Genetic Consulting Ltd., Lethbridge, AB, Canada*, [3]*Canadian Simmental Association, Calgary, AB, Canada*.

M39 **Polymorphisms in FSH-β ESR and BF genes and their relationship with reproductive traits in Yorkshire pigs.**
C. Liu[1], J. Shen[1], S. Zhu[1], W. Shi[2], and Y. Yu*[1], [1]*China Agricultural University, Beijing, China*, [2]*Animal Husbandry and Veterinary Station of Beijing, Beijing, China*.

M40 **Genetic parameters for lifetime number of piglets born alive and length of productive life using a linear censored model.**
C. Y. Chen*[1], A. C. Clutter[2], and S. Tsuruta[3], [1]*Newsham Choice Genetics, Chesterfield, MO*, [2]*Agricultural Research Division, University of Nebraska, Lincoln*, [3]*Department of Animal and Dairy Science, University of Georgia, Athens*.

M41 **Genome-wide association study of age at puberty in swine.**
J. F. Schneider*, D. J. Nonneman, R. T. Wiedmann, and G. A. Rohrer, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

M42 **Survival in crossbred lambs: Individual, maternal, heterosis, and breed effects.**
V. C. Ferreira*[1,2], D. L. Thomas[1], and G. J. M. Rosa[1], [1]*University of Wisconsin-Madison, Madison*, [2]*Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*.

M43 **Efficiency of breeding Pantaneiro bulls by libido test.**
J. R. B. Sereno*[1], V. G. Ueno[2], C. H. Bucher[3], U. G. P. Abreu[4], R. S. Juliano[4], and J. V. Malaquias[1], [1]*Embrapa Cerrados, Planaltina, DF, Brazil*, [2]*Centro Paula Souza, Adamantina, SP, Brazil*, [3]*Med. Vet. Autônomo, Campo de Goytacazes, RJ, Brazil*, [4]*Embrapa Pantanal, Corumbá, MS, Brazil*.

M405 **Models' predictive ability of breeding values for a small data set of genotyped animals.**
F. M. Rezende*[1], J. B. S. Ferraz[1], F. V. Meirelles[1], J. P. Eler[1], and N. Ibañéz-Escriche[2], [1]*Faculdade de Zootecnia e Engenharia de Alimentos-Universidade de São Paulo, Pirassununga, São Paulo, Brazil*, [2]*Genètica i Millora Animal-IRTA, Lleida, Cataluña, Spain*.

Companion Animals
Sponsors: Hill's Science Diet and Procter and Gamble

M44 **Vitamin E and seminal quality in Rottweiler dogs.**
L. K. Hatamoto-Zervoudakis*[1], C. A. Baptista-Sobrinho[3], M. Nichi[2], A. K. S. Cavalcante[4], V. H. Barnabé[2], R. C. Barnabé[2], and C. N. M. Cortada[5], [1]*Federal University of Mato Grosso, Cuiabá, Brazil*, [2]*University of São Paulo, São Paulo, Brazil*, [3]*Brazilian Army, Osasco, São Paulo, Brazil*, [4]*Federal University of Bahia Reconcavo, Cruz das Almas, Brazil*, [5]*Tecpar, Curitiba, Brazil*.

M45 **Proximate analysis of commercially available whole prey for small captive exotic cats.**
K. R. Kerr*[1], L. M. Garner[2], and K. S. Swanson[1,2], [1]*Division of Nutritional Sciences, University of Illinois, Urbana*, [2]*Department of Animal Sciences, University of Illinois, Urbana*.

M46 **In vitro digestion characteristics of expanded porkskin- and rawhide-based chews.**
S. Hooda*[1], L. G. Ferreira[1], L. L. Bauer[1], G. C. Fahey[1], M. A. Latour[2], and K. S. Swanson[1], [1]*Department of Animal Sciences, University of Illinois, Urbana*, [2]*Department of Animal Science, Purdue University, West Lafayette, IN*.

Dairy Foods

M47 **Use of caseinomacropeptide index as indicator of adulteration of milk powder in Brazil.**
M. O. Leite, M. C. P. P. Oliveira*, L. M. Fonseca, M. M. O. P. Cerqueira, M. R. Souza, C. F. A. M. Penna, and T. Rosa, *Department of Food Technology and Inspection, Veterinary School, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil*.

M48 **Effects of vacuum-deaeration on reconstituted milk flavor made from whole milk powder.**
H. J. Kang*, Y. K. Shin, and S. C. Baick, *Institute of Dairy Food Research, Seoul Dairy Cooperative, Ansansi, Kyunggi, South Korea*.

M49 **Evaluating the efficacy of a typical CIP protocol for cleaning membrane biofilms under in vitro conditions.**
D. Singh* and S. Anand, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M50 **Effect of transglutaminase treatment on the functionality of MPC and MCC: Process cheese product slice formulations.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M51 **Radio frequency dielectric heating treatment of NDM affects whey protein nitrogen index and solubility.**
M. Michael[1], C. Chen[1], R. Phebus[1], K. Schmidt*[1], H. Thippareddi[2], and J. Subbiah[2], [1]*Kansas State University, Manhattan*, [2]*University of Nebraska, Lincoln*.

M52 **Effect of transglutaminase treatment on the functionality of MPC and MCC. III. Imitation mozzarella cheese formulations.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M53 **Effect of transglutaminase treatment on the functionality of MPC and MCC: Process cheese product loaf formulations.**
P. Salunke*, C. Marella, and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M54 **Influence of fat replacement by inulin on rheological properties and kinetics of milk coagulation and syneresis of milk gels.**
O. Arango, H. M. Taterka*, A. J. Trujillo, B. Guamis, and M. Castillo, *Centre Especial de Recerca Planta de Tecnologia dels Aliments (CERPTA), Departament de Ciència Animal i dels Aliments, Facultat de Veterinària, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

M55 **Effects of season and locality on amino acid composition of raw milk in dairy cows.**
J. X. Zhang[1,2], J. Q. Wang*[1], Y. X. Yang[1], D. P. Bu[1], P. Sun[1], L. Y. Zhou[1], Q. J. Luo[2], and J. H. Yang[1], [1]*Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*Xinjiang Agricultural University, Urumqi, China*.

M56 **Qualitative analysis of fatty acids variation in milk of different farms in China.**
J. H. Yang, J. Q. Wang*, Y. X. Yang, D. P. Bu, P. Sun, L. Y. Zhou, T. J. Yuan, and J. X. Zhang, *Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M57 **Qualitative identification of cow, buffalo, and yak milks using near infrared spectroscopy (NIRS).**
J. H. Yang, J. Q. Wang*, Y. X. Yang, D. P. Bu, P. Sun, L. Y. Zhou, T. J. Yuan, and J. X. Zhang, *Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M58 **Transfer of conjugated linoleic acid from milk to ice cream.**
G. A. Gagliostro*[1], L. E. Antonacci[1], G. Genero[1], M. R. Williner[2], and C. A. Bernal[2], [1]*INTA, Balcarce, Buenos Aires, Argentina*, [2]*UNL, Sante Fé, Argentina*.

M59 **Assessment of adulteration by urea addition to milk by Fourier transform infrared methodology (FTIR).**
M. C. P. P. Oliveira*, R. S. Conrrado, L. M. Fonseca, M. M. O. P. Cerqueira, and M. O. Leite, *Department of Food Technology and Inspection, School of Veterinary Medicine, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil*.

M60 **Freezing point of raw milk by Fourier transform infrared methodology (FTIR).**
R. S. Conrrado, M. C. P. P. Oliveira*, L. M. Fonseca, L. R. Borges, M. M. O. P. Cerqueira, M. O. Leite, R. Rodrigues, M. R. Souza, and C. F. A. M. Penna, *Department of Food Technology and Inspection, School of Veterinary Medicine, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil*.

M61 **Identification of a high γ-aminobutyric acid-producing *Lactobacillus plantarum* from traditional dairy products in Inner Mongolia of China.**
Y. Guo[2], Y. Shan[1], C. Man[1], S. Yang[2], Y. Xue[2], Y. Liu[2], X. Dong[2], J. Wang[2], M. Guo*[3], and Y. Jiang[1,2], [1]*National Dairy Engineering and Technology Research Center, Northeast Agricultural University, Harbin, Heilongjiang, China*, [2]*Department of Food Science, Northeast Agricultural University, Harbin, Heilongjiang, China*, [3]*Department of Nutrition and Food Sciences, The University of Vermont, Burlington*.

M62 **Whey protein isolate affects cysteine content and gel quality of yogurt.**
S. Bala and K. Schmidt*, *Kansas State University, Manhattan*.

Forages and Pastures I

M63 **Body growth and first-lactation milk production of pregnant Holstein heifers reared on pasture or conventional diets.**
R. R. Peters*[1], S. W. Fultz[2], J. W. Semler[3], and R. A. Erdman[1], [1]*University of Maryland, College Park*, [2]*University of Maryland Extension, Frederick*, [3]*University of Maryland Extension, Boonesboro*.

M64 **Antioxidant activity and blood parameters in early weaned calves fed yeasts and fermented apple pomace.**
C. Rodríguez-Muela*, P. Mancillas-Flores, C. Arzola, D. Díaz-Plascencia, O. Viramontes, G. Corral, A. Grado-Ahuir, and A. Ramírez-Godínez, *Universidad Autonoma de Chihuahua, Chihuahua, México*.

M65 **Use of yeasts and fermented apple pomace in the diet of early weaned calves.**
P. Mancillas-Flores*, C. Rodríguez-Muela, C. Arzola, D. Díaz-Plascencia, A. Grado-Ahuir, O. Viramontes, A. Flores, and A. Ramírez-Godínez, *Universidad Autonoma de Chihuahua, Chihuahua, México*.

M66 **Performance and carcass traits of steers grazing annual ryegrass supplemented with increasing levels of flaxseed.**
N. Fanego[1,2], L. B. Pouzo[2,4], F. J. Santini[1], J. Killefer[5], and E. Pavan*[1], [1]*Unidad Integrada Balcarce (INTA, EEA Balcarce-UNMdP, FCA), Balcarce, Bs. As., Argentina*, [2]*Comisión Investigaciones Científicas, Buenos Aires, Argentina*, [3]*Universidad Nacional de La Plata, La Plata, Buenos Aires, Argentina*, [4]*Consejo Nacional de Investigaciones Científicas y Tecnologícas, Argentina*, [5]*Oregon State University, Corvallis*.

M67 **Evaluating grazing performance and forage quality differences between AC-Saltlander green wheatgrass (*Elymus hoffmannii*) and smooth bromegrass (*Bromus inermis*).**
A. D. Iwaasa*, H. Steppuhn, and E. Birkedal, *Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada*.

M68 **Continuous versus rotational stocking of rye and ryegrass pastures at different stocking rates and forage allowance.**
F. Rouquette*, J. Kerby, G. Nimr, and K. Norman, *Texas AgriLife Research and Extension Center, Overton*.

M69 **Improving calf performance by extending the grazing season with warm season grasses and brassica forages.**
S. J. Filley* and J. Hunter, *Oregon State University, Corvallis*.

M70 **beef steer performance when grazing native warm season grasses.**
H. T. Boland[1,2], B. J. Rude*[2], J. A. Martin[3], S. K. Riffell[3], and L. W. Burger[3], [1]*Prairie Research Unit, Mississippi Agricultural and Forestry Experiment Station, Prairie*, [2]*Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State*, [3]*Department of Wildlife, Fisheries and Aquaculture, Mississippi State University, Mississippi State*.

M71 **Animal performance on pastures managed at two forage heights to produce grass finished beef.**
M. J. Baker*[1], M. L. Thonney[1], L. O. Tedeschi[2], G. Jacimovski[1], and L. M. Furman[1], [1]*Cornell University, Ithaca, NY*, [2]*Texas A&M University, College Station*.

M72 **Nutritive value of plants and milk production from crossbreed cows grazing Tanzania guinea grass subjected to rotational stocking managements.**
M. L. P. Lima*[1], F. F. Simili[1], A. Giacomini[2], C. C. P. Paz[1], L. C. Roma[1], and E. G. Ribeiro[2], [1]*SAA Agencia Paulista de Tecnologia dos Agronegocios APTA, Ribeirao Preto, Sao Paulo, Brazil*, [2]*Instituto de Zootecnia, Nova Odessa, Sao Paulo, Brazil*.

M73 **Sward structural characteristics, herbage accumulation of Tanzania guinea grass subjected to rotational stocking managements.**
M. L. P. Lima*[1], F. F. Simili[1], A. Giacomini[2], C. C. P. Paz[1], L. C. Roma[1], and E. G. Ribeiro[2], [1]*SAA Agencia Paulista de Tecnologia dos Agronegocios APTA, Ribeirao Preto, Sao Paulo Brazil*, [2]*Instituto de Zootecnia, Nova Odessa, Sao Paulo, Brazil*.

M74 **Simulation of the effect of stocking rate on forage harvest efficiency under New Zealand intensive grazing systems.**
P. Gregorini*[1], A. J. Romera[1], J. R. Galli[2], P. C. Beukes[1], and H. H. Fernandez[3], [1]*DairyNZ, Hamilton, New Zealand*, [2]*Facultad de Ciencias Agrarias, Universidad Nacional de Rosario, Rosario, Santa Fe, Argentina*, [3]*Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina*.

M75 **Nitrogen fertilizer management to improve forage production in south-central Vietnam.**
K. C. McRoberts[1], D. Parsons[2], J. H. Cherney[1], Q. M. Ketterings[1], and D. J. R. Cherney*[1], [1]*Cornell University, Ithaca, NY*, [2]*University of Tasmania, Hobart, Tasmania, Australia*.

M76 **Anatomy and histochemistry of lignin in *Festulolium* and its progenitors.**
J. M. Vargas-Romero[1], H. A. Zavaleta-Mancera[2], S. S. González-Muñoz*[2], J. Burgueño-Ferreira[3], M. Meneses-Mayo[2], and B. Alarcón-Zúñiga[4], [1]*Universidad Autónoma Metropolitana-Iztapalapa, México D. F., México*, [2]*Colegio de Postgraduados, Montecillo, Estado de México, México*, [3]*CIMMYT, Estado de México, México*, [4]*Universidad Autónoma Chapingo, Chapingo, Estado de México, México*.

M77 **The n-alkane technique provides a reliable estimate of fescue and clover composition in mixed forages.**
N. Vargas Jurado*, A. E. Tanner, S. R. Blevins, H. M. McNair, and R. M. Lewis, *Virginia Polytechnic Institute and State University, Blacksburg*.

M78 **Assessment of stockpiling methods to increase late summer and early fall forage biomass.**
A. L. Hickman*, A. O. Abaye, B. F. Tracy, C. D. Teutsch, and D. A. Fiske, *Virginia Polytechnic Institute and State University, Blacksburg*.

M79 **Soil nutrients in tall fescue (*Festuca arundinacea* L.) paddocks managed under different outdoor hog systems.**
S. Pietrosemoli*[1] and J. T. Green[2], [1]*Animal Science Department, North Carolina State University, Raleigh*, [2]*Crop Science Department, North Carolina State University, Raleigh*.

M80 **Effect of outdoor swine management systems on tall fescue (*Festuca arundinacea* L.) ground cover and animal performance.**
S. Pietrosemoli*[1] and J. T. Green[2], [1]*Animal Science Department, North Carolina State University, Raleigh*, [2]*Crop Science Department, North Carolina State University, Raleigh*.

M81 **Effect of outdoor swine management systems on the botanical composition of tall fescue (*Festuca arundinacea*) paddocks.**
S. Pietrosemoli*[1], J.-M. Luginbuhl[2], and J. T. Green[2], [1]*Animal Science Department, North Carolina State University, Raleigh*, [2]*Crop Science Department, North Carolina State University, Raleigh*.

M82 **Endophyte-infected fescue seed causes constriction of the palmar and uterine arteries in pregnant mares.**
K. J. McDowell*, M. A. Stickney, E. Delaney, and D. A. Hestad, *University of Kentucky, Lexington*.

M83 **Consumption of endophyte-infected tall fescue seed causes constriction of the palmar artery and vein but does not alter estradiol, progesterone, or estrous cycle length in nonpregnant mares.**
D. A. Hestad* and K. J. McDowell, *University of Kentucky, Lexington*.

M84 **Changes in bovine vascular contraction and constriction relative to time off endophyte-infected tall fescue.**
J. R. Bussard*[1], G. E. Aiken[3], J. R. Strickland[3], K. R. Brown[3], B. M. Goff[1], A. P. Foote[2], and J. L. Klotz[3], [1]*Department of Plant and Soil Sciences, University of Kentucky, Lexington*, [2]*Department of Animal and Food Sciences, University of Kentucky, Lexington*, [3]*USDA-ARS, FAPRU, Lexington, KY*.

M85 **Lateral saphenous vein responses to serotonergic and α-adrenergic receptor agonists increase with time off endophyte-infected tall fescue.**
J. L. Klotz*[1], J. R. Bussard[2], G. E. Aiken[1], A. P. Foote[3], D. L. Harmon[3], K. R. Brown[1], B. M. Goff[2], and J. R. Strickland[1], [1]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*, [2]*Department of Plant and Soil Sciences, University of Kentucky, Lexington*, [3]*Department of Animal and Food Sciences, University of Kentucky, Lexington*.

M86 **Validation of a housekeeping gene for use in bovine vascular gene expression studies.**
J. L. Klotz*[1], K. R. Brown[1], J. C. Matthews[2], J. A. Boling[2], and J. R. Strickland[1], [1]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*, [2]*Department of Animal and Food Sciences, University of Kentucky, Lexington*.

M87 **Tiller appearance in pastures of Guinea grass 'Tanzania' managed with different frequencies and defoliation severities.**
D. Nascimento Júnior*[1], A. M. Zanine[2], B. M. L. Sousa[1], and W. L. Silva[3], [1]*Univsersidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Rondonópolis, MT, Brazil*, [3]*Universidade Estadual Paulista, Jaboticabal, SP, Brazil*.

M88 **Aerial tiller density in pastures *Pennisetum purpureum* submitted to different post-grazing heights.**
B. M. L. Sousa, D. Nascimento Júnior*, H. C. F. Monteiro, F. C. Gomes, C. Z. Assis, and C. S. Almeida, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

M89 **Tiller density stability of Piatâ palisadegrass swards deferred with different initial heights.**
B. M. L. Sousa[1], D. Nascimento Júnior*[1], M. E. R. Santos[2], H. H. Vilela[1], M. C. T. Silveira[3], G. O. Rocha[1], B. D. Faria[1], and C. A. S. Freitas[1], [1]*Univsersidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Faculdade de Medicina Veterinaria e Zootecnia, Uberlândia, MG, Brazil*, [3]*Empresa Brasileira de Pesquisa Agropecuária - Pecuária Sul, Bagé, RS, Brazil*.

M90 **Tiller density in Piatâ palisadegrass deferred in different seasons and initial heights.**
B. M. L. Sousa[1], D. Nascimento Júnior*[1], H. H. Vilela[1], M. E. R. Santos[2], C. Z. Assis[1], G. O. Rocha[1], and B. D. Faria[1], [1]*Univsersidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Faculdade de Medicina Veterinaria e Zootecnia, Uberlândia, MG, Brazil*.

M91 **Animal productivity on brachiaria grass deferred at different heights[1].**
M. C. T. Silveira[1], D. M. Fonseca[2], D. Nascimento Júnior*[2], M. E. R. Santos[3], V. M. Gomes[2], F. K. Gomes[2], V. L. N. Brandâo[2], G. O. Rocha[2], B. M. L. Sousa[2], A. Deus[2], R. L. Albino[2], L. S. Moura[2], and G. A. Borges[2], [1]*CPPSU-Embrapa Pecuária Sul, Bagé, RS, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [3]*Faculdade de Medicina Veterinaria e Zootecnia-UFU, Uberlândia, MG, Brazil*.

M92 **The effect of cutting at different stages of maturity on yield and quality of nine forage oat varieties in the peace region of Alberta.**
T. A. Omokanye*[1] and K. S. Gill[2], [1]*Peace Country Beef and Forage Association, Fairview, Alberta, Canada*, [2]*Smoky Applied Research and Demonstration Association, Falher, Alberta, Canada*.

Graduate Student Competition:
ADSA Dairy Foods Division Graduate Poster Competition
Chair: Stephanie Clark, Iowa State University

M93 **Structural properties of milk protein concentrate (MPC) dispersions and emulsions as influenced by presence of small molecule components.**
Y. Liang*[1,2], H. Patel[1], L. Matia-Merino[2], A. Ye[3], and M. Golding[2,3], [1]*Fonterra Research Centre, Palmerston North, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand*, [3]*Riddet Institute, Massey University, Palmerston North, New Zealand*.

M94 **Application of bixin as an alternative colorant for Cheddar cheese.**
X. Li*, T. J. Smith, and M. A. Drake, *North Carolina State University, Raleigh*.

M95 **Cold enzymatic bleaching of fluid whey and retentate.**
R. E. Campbell* and M. A. Drake, *North Carolina State University, Raleigh*.

M96 **The effect of milk pasteurization temperature on the bleaching of fluid whey.**
E. Kang* and M. A. Drake, *North Carolina State University, Raleigh*.

M97 **The effect of acidification of retentate on the flavor of spray-dried whey protein concentrate.**
C. W. Park*[1], E. Bastian[2], B. Farkas[1], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Glanbia Nutritionals, Twin Falls, ID*.

M98 **Sensory properties and composition of permeate and permeate fractions.**
K. Frankowski* and M. A. Drake, *North Carolina State University, Raleigh*.

M99 **Effect of SO-TEC clear whey on physico-chemical characteristics of Cheddar cheese and its whey.**
A. C. Biswas* and L. E. Metzger, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

M100 **Effectiveness of ultrasonication in inactivating spores of *Bacillus* spp. in skim milk.**
S. Khanal*[1], S. Anand[1], and K. Muthukumarappan[2], [1]*Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings*, [2]*Agricultural and Biosystems Engineering Department, South Dakota State University, Brookings*.

M101 **Screening of different enzymes for modification of the enzyme cleaning step of an existing membrane CIP protocol.**
D. Singh* and S. Anand, *Dairy Science Department, Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

Graduate Student Competition:
ADSA Production Division Poster Competition, MS Division
Chair: Barry Bradford, Kansas State University

M102 **Meta-analysis: Impact of corn silage harvest practices on intake, digestion, and milk production by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison, Madison*.

M103 **Response to different concentrations and sources of dietary protein on blood urea nitrogen concentrations and plasma amino acid utilization for milk production.**
I. P. Acharya*, D. J. Schingoethe, K. F. Kalscheur, and D. P. Casper, *South Dakota State University, Brookings*.

M104 **Effects of adjustable and stationary fans with misters on core body temperature and resting behavior of lactating dairy cows in a semi-arid climate.**
S. D. Anderson*[1], B. J. Bradford[2], J. P. Harner[2], C. B. Tucker[3], J. D. Allen[1], L. W. Hall[1], S. Rungruang[1], E. Rajapaksha[3], R. J. Collier[1], and J. F. Smith[1], [1]*The University of Arizona, Tucson*, [2]*Kansas State University, Manhattan*, [3]*University of California, Davis*.

M105 **Evaluation of fc receptor gene variants in cow genomic DNA.**
J. Williams* and M. Worku, *North Carolina Agricultural and Technical State University, Greensboro, North Carolina*.

M106 **Quantitative calcium determination from an ashed feed sample.**
D. J. LaMay*, J. L. Squire, K. D. Baldock, and D. L. Smith, *Eastern New Mexico University, Portales*.

M107 **Cow comfort in dry lots: Lameness, leg injuries and lying times on dairy farms in Texas and New Mexico.**
A. K. Barrientos*[1], D. M. Weary[1], E. Galo[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Novus International Inc., St. Louis, MO*.

M108 **The effect of temperature on performance of Keto-Test strips.**
J. Shire*[1], J. L. Gordon[2], and E. L. Karcher[1], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada*.

M109 **Effects of prepartum grouping strategy on immune parameters of peripartum dairy cows.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], A. A. Scanavez[1], G. Nakagawa[1], M. I. Endres[2], M. A. Ballou[3], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*, [2]*Department of Animal Science, University of Minnesota, St. Paul*, [3]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

M110 **Detection of clinical and subclinical mastitis using reticulorumen temperatures.**
A. E. Sterrett*, K. N. Brock, B. I. Kiser, J. D. Clark, D. L. Ray, and J. M. Bewley, *University of Kentucky*.

M404 **Effect of precision processing barley grain on dry matter intake, milk production, rumen pH and nutrient digestibility in lactating dairy cows.**
N. Schlau*[1], L. Duineveld[1], W. Z. Yang[2], T. A. McAllister[2], and M. Oba[1], [1]*University of Alberta, Edmonton, AB Canada*, [2]*Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB Canada*.

Graduate Student Competition:
ADSA Production Division Poster Competition, PhD Division
Chair: Barry Bradford, Kansas State University

M111 **Effects of energy supplementation for pasture forages on in vitro ruminal fermentation in continuous cultures.**
C. T. Noviandi*[1], M. N. McDonald[1], D. R. ZoBell[1], J.-S. Eun[1], M. D. Peel[2], and B. L. Waldron[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Forage and Range Research Laboratory, USDA-ARS, Logan, UT*.

M112 **Evaluation of feed delivery methods for prepubertal dairy heifers during the growing period.**
T. S. Dennis*, J. E. Tower, and T. D. Nennich, *Purdue University, West Lafayette, IN*.

M113 **Prediction of pregnancy outcome using machine learning algorithms.**
S. Shahinfar*[1], K. Weigel[1], D. Page[2], J. Gunter[1], V. Cabrera[1], and P. Fricke[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*Department of Biostatistics and Medical Informatics, and Department of Computer Science, University of Wisconsin-Madison, Madison*.

M114 **Genes for lysine catabolism in lactating dairy cows are responsive to postruminal lysine supply.**
H. A. Tucker*[1], M. D. Hanigan[2], J. Escobar[3], P. H. Doane[4], and S. S. Donkin[1], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg*, [3]*Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg*, [4]*Archer Daniels Midland Company, Decatur, IL*.

M115 **Evaluation of rumen protected lysine supplementation to lactating dairy cows consuming increasing amounts of DDGS.**
H. A. Paz*[1], M. de Veth[2], R. Ordway[2], and P. J. Kononoff[1], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Balchem Corp., New Hampton, NY*.

M116 **Integrating nutritional and reproductive models to improve reproductive efficiency in dairy cattle.**
S. L. Shields*[1], H. Woelders[2], M. Boer[2,3], C. Stötzel[4], S. Röeblitz[4], J. Plöntzke[4], and J. P. McNamara[1], [1]*Department of Animal Sciences, Washington State University, Pullman*, [2]*Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Lelystad, the Netherlands*, [3]*Adaptation Physiology Group, Department of Animal Sciences, Wageningen University, Wageningen, the Netherlands*, [4]*Computational Systems Biology Group, Zuse Institute Berlin, Berlin, Germany*.

M117 **Variation of mucosal innate immune genes expression in the gastrointestinal tract of dairy calves fed with or without calf starter during weaning transition.**
N. Malmuthuge*, M. Oba, and L. L. Guan, *University of Alberta, Edmonton, AB, Canada*.

M118 **Web forums as a method for engagement on contentious issues in dairying: Should dairy calves be separated from the cow within the first few hours after birth?**
B. A. Ventura*, M. A. G. von Keyserlingk, C. A. Schuppli, and D. M. Weary, *Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*.

M119 **A cluster analysis to describe profitability on Wisconsin dairy farms.**
M. Dutreuil*[1], V. E. Cabrera[1], R. Gildersleeve[2], C. A. Hardie[1], and M. Wattiaux[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Wisconsin Extension, Dodgeville*.

Growth and Development I

M120 **Effect of protein supplementation in the last trimester of gestation in Nellore cows on subsequent growth of their bull calves submitted or not submitted to creep-feeding.**
F. M. da Rocha[3], A. V. Pires[2], R. Sartori[2], D. D. Nepomuceno[2], M. V. Biehl*[3], I. Susin[2], E. M. Ferreira[2], M. V. C. Ferraz Junior[3], J. R. S. Goncalves[4], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*, [4]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*.

M121 **Protein supplementation of Nellore cows in the last trimester of gestation and consequent performance of their heifer calves in creep feeding.**
D. D. Nepomuceno[2], A. V. Pires[2], R. Sartori[2], F. M. da Rocha[3], M. V. Biehl*[2], I. Susin[2], E. M. Ferreira[3], M. V. C. Ferraz Junior[3], J. R. S. Goncalves[4], F. M. Abreu[1], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*, [4]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*.

M122 **Identification of key amino acids associated with fetal skeletal muscle growth in sheep.**
F. A. Sales*[1,4], B. P. Treloar[1], D. Pacheco[1], H. T. Blair[2], P. R. Kenyon[2], G. Nicholas[3], M. Senna-Salerno[3], and S. A. McCoard[1], [1]*Agresearch Grasslands, Palmerston North, New Zealand*, [2]*Sheep Research Centre, Massey University, Palmerston North, New Zealand*, [3]*Agresearch Ruakura, Hamilton, New Zealand*, [4]*Instituto de Investigaciones Agropecuarias, Punta Arenas, Chile*.

M123 **Is placental functionality different between singletons and twins in sheep?**
D. S. van der Linden* and S. A. McCoard, *Animal Nutrition Team, AgResearch Grasslands Limited, Palmerston North, New Zealand*.

M124 **Placental efficiency at birth has no effects on postnatal muscle development.**
T. A. Wilmoth*[1], C. S. Perkins[2], Z. E. Kerley[2], Z. D. Callahan[2], M. E. Wilson[1], and B. R. Wiegand[2], [1]*West Virginia University, Morgantown*, [2]*University of Missouri, Columbia*.

M125 **Effects of metabolizable protein supply during late gestation on ovine offspring growth and development.**
C. A. Schwartz*[1], K. R. Maddock-Carlin[1], C. O. Lemley[1], L. E. Camacho[1], W. L. Keller[1], J. S. Caton[1], R. D. Yunusova[1], C. S. Schauer[2], and K. A. Vonnahme[1], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Hettinger Research Extension Center, North Dakota State University, Hettinger*.

M126 **Vascularization in ovine utero-placental tissues during early pregnancy: Effects of assisted reproductive technology (ART).**
P. P. Borowicz*, L. P. Reynolds, D. A. Redmer, and A. T. Grazul-Bilska, *Department of Animal Sciences, and Center for Nutrition and Pregnancy, North Dakota State University, Fargo*.

M127 **Influence of *Bos indicus* genetics on pregnancy-associated glycoproteins (PAG) and their association with fetal development.**
P. M. Mercadante*[1], K. M. Bischoff[2], V. R. G. Mercadante[2], G. C. Lamb[2], and A. D. Ealy[1], [1]*University of Florida, Gainesville*, [2]*University of Florida, North Florida Research and Education Center, Marianna*.

M128 **Fetal size and pregnancy-associated glycoprotein concentrations are influenced by *Bos indicus* genetics during early gestation.**
C. M. Waits*, P. M. Mercadante, S. E. Johnson, A. D. Ealy, and J. V. Yelich, *University of Florida, Gainesville*.

M129 **Effects of nutrient restriction in beef cows during early gestation on maternal and fetal small intestinal and hepatic mass and in vitro oxygen (O2) consumption.**
L. D. Prezotto*, L. E. Camacho, C. O. Lemley, J. S. Caton, K. A. Vonnahme, M. Kapphahn, M. Van Emon, R. S. Goulart, R. D. Yunosova, T. J. Swanson, and K. C. Swanson, *Animal Science Department, North Dakota State University, Fargo*.

M130 **The effects of intrauterine growth retardation (IUGR) due to poor maternal nutrition on muscle development in lambs.**
M. L. Hoffman*, M. A. Rokosa, S. Neupane, K. K. McFadden, S. M. Tornaquindici, S. A. Zinn, and K. E. Govoni, *Department of Animal Science, University of Connecticut, Storrs*.

M131 **Maternal diet interactions with fetal sex in beef cattle.**
C. Fitzsimmons*[1,2], K. Wood[3], F. Paradis[1,2], B. McBride[3], S. Miller[3], I. Mandell[3], and K. Swanson[4], [1]*Agriculture and Agri-Food Canada, Edmonton, Alberta, Canada*, [2]*Dept. of Animal, Food, and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

M132 **Lamb growth in response to the duration of maternal undernutrition during gestation in twin sheep pregnancies.**
M. E. Field*, R. V. Anthony, T. E. Engle, S. L. Archibeque, and H. Han, *Colorado State University, Fort Collins*.

Lactation Biology I

M133 **Nursing frequency alters circadian patterns of mammary gene expression in lactating mice.**
D. L. Hadsell*, W. Olea, and L. W. Rottman, *Baylor College of Medicine, Houston, TX.*

M134 **Functional analysis of swine mammary gland transcriptome during late gestation using two bioinformatics approaches.**
W. S. Zhao*[1,2], K. Shahzad[1], D. E. Graugnard[1], J. Luo[2], J. J. Loor[1], and W. L. Hurley[1], [1]*University of Illinois, Urbana*, [2]*Northwest A & F University, YangLing, Shaanxi, China*.

M135 **Changes in milk composition of Holstein dairy cows within a milking.**
D. E. Rico*, E. R. Marshall, and K. J. Harvatine, *Penn State University, University Park*.

M136 **Osteopontin secretion in milk is correlated to the presence of DNA polymorphisms in the secreted phosphoprotein 1 (*SPP1*) gene.**
P.-L. Dudemaine*[2] and N. Bissonnette[1,2], [1]*Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Center, Sherbrooke, QC, Canada*, [2]*Université de Sherbrooke, Sherbrooke, QC, Canada*.

M137 **Growth hormone influences mTORC1 and IGF-1 signaling in the lactating bovine mammary gland.**
S. McCoard*, Q. Sciascia, and D. Pacheco, *Animal Nutrition Team, AgResearch Grasslands Limited, Palmerston North, New Zealand*.

M138 **First demonstration of decorin, an extracellular matrix molecule, in bovine mammary tissue.**
K. M. O'Diam*[1], S. G. Velleman[1], V. A. Swank[1], S. Ellis[2], A. V. Capuco[3], and K. M. Daniels[1], [1]*Department of Animal Sciences, The Ohio State University, OARDC, Wooster*, [2]*Animal and Veterinary Sciences Department, Clemson University, Clemson, SC*, [3]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD*.

M139 **MicroRNA expression patterns are affected by stage of lactation in dairy cattle mammary gland.**
M. Z. Wang*[1,2], S. Moisa[2], D. Bu[1], J. Wang[1], and J. J. Loor[2], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*University of Illinois, Urbana*.

M140 **Proteomic analysis in MAC-T cells reveals proteins involved in *cis*-9, *trans*-11 CLA de novo synthesis.**
T. Wang*, J. J. Oh, D. C. Piao, J. H. Hwang, Y. C. Jin, S. B. Lee, K. H. Lee, J. N. Lim, H. S. Kang, and H. G. Lee, *Department of Animal Science, Pusan National University, Miryang, Gyeongnam, Korea*.

M141 **Potent growth promoting activity of prolactin and estrogen to E-cadherin/β-catenin adhesion molecules in bovine mammary gland: Modulation of Wnt signaling.**
J.-J. Tong, Q.-Z. Li*, X.-J. Gao, N. Zhang, and Y. Lin, *Key Lab of Dairy Science, Ministry of Education, Northeast Agriculture University,, Harbin, Heilongjiang, China*.

Meat Science and Muscle Biology I

M142 **Effect of power ultrasound on the physicochemical properties of beef longissimus dorsi muscle.**
C. Valenzuela-Gonzalez*[1], A. D. Alarcon-Rojo[1], E. Santellano[1], and A. Quintero-Ramos[2], [1]*Universidad Autonoma de Chihuahua, Facultad de Zootecnia y Ecologia, Chihuahua, Mexico*, [2]*Universidad Autonoma de Chihuahua, Facultad de Ciencias Quimicas, Chihuahua, Mexico*.

M143 **Diffusion of sodium chloride in bovine meat treated with power ultrasound in continuous and pulse modes.**
E. B. Ordaz-Portillo, A. D. Alarcon-Rojo, and C. Valenzuela-Gonzalez*, *Universidad Autonoma de Chihuahua, Chihuahua, Mexico*.

M144 **Meat traits of steers fed with whole cottonseed.**
D. P. Borges da Costa*[1], R. de Oliveira Roça[2], Q. P. Borges da Costa[3], L. da Silva Cabral[4], D. P. D. Lanna[5], E. da Silva Lima[3], D. G. Fagundes[1], and N. L. Filho[1], [1]*Instituto Federal de Mato Grosso, Campo Novo do Parecis, Brazil*, [2]*Faculty of Agricultural Sciences, Universidade Estadual Paulista, Botucatu, Brazil*, [3]*Faculty of Veterinary Medicine, Universidade Estadual Paulista, Botucatu, Brazil*, [4]*Universidade Federal de Mato Grosso, Cuiabá, Brazil*, [5]*Escola Superior de Agricultura "Luiz de Queiroz,"Universidade de São Paulo, Piracicaba, Brazil*.

M145 **Lipid peroxidation and color of meat from young bulls fed different levels of crude glycerin.**
M. M. Ladeira*, J. R. R. Carvalho, M. L. Chizzotti, E. M. Ramos, P. D. Teixeira, M. C. L. Alves, P. E. P. Barros, and O. R. Machado Neto, *Federal University of Lavras, Lavras, MG, Brazil*.

M146 **The use of visible and near infrared spectroscopy for quality control of organic and conventional beef stored under protective atmospheres.**
M. Ólivan[1], V. Sierra[1], G. Fiorentini*[2,4], N. Prado[3], P. González[3], B. Álvarez[3], J. Díaz[3], and K. Osoro[1], [1]*Servicio Regional de Investigación y Desarrollo Agroalimentario (SERIDA), Asturias, Spain*, [2]*Universidade Estadual Paulista (UNESP), Jaboticabal, SP, Brazil*, [3]*Asociación de Investigación de Industrias Cárnicas del Principado de Asturias (ASINCAR), Polígono de la Barreda, Noreña, Spain*, [4]*Bolsista Processo nº2469-11-1 - CAPES, Setor Bancário Norte, Brasília, Brazil*.

M147 **Fatty acid composition of cattle fattened with tropical forage at rainy and drought season.**
M. E. E. Rodríguez*[1], G. Corral-Flores[1], B. S. Solorio[2], A. D. R. Alarcón[1], J. A. Grado-Ahuir[1], C. Rodríguez-Muela[1], L. P. Cortés[1], and V. E. B. Segovia[1], [1]*Facultad de Zootecnia y Ecología. UACH, Chihuahua, México*, [2]*Fundación Produce Michoacán A. C., Morelia, México*.

M148 **Genetic parameters for fat thickness measured in different anatomical points of *Longissimus* muscle in Nellore cattle.**
M. N. Bonin*[1], F. J. Novais[1], S. L. Silva[1], R. C. Gomes[2], A. S. Figueiredo[1], P. F. Torralvo[1], L. G. Figueiredo[1], P. A. B. McLean[1], V. N. Barbosa[1], J. H. A. Campo[1], T. V. Solpelsa[1], M. H. A. Santana[1], F. M. Rezende[1], and J. B. S. Ferraz[1], [1]*College of Animal Science and Food Engineering, University of Sao Paulo, Pirassununga, Brazil*, [2]*State University of Londrina, Londrina, Brazil*.

M149 **Comparative effects of two beta adrenergic agonists on Warner-Bratzler and slice shear force of USDA Choice strip steaks from calf-fed Holsteins.**
A. J. Garmyn*[1], J. N. Martin[1], J. C. Brooks[1], R. J. Rathmann[1], J. M. Hodgen[2], K. D. Pfieffer[2], C. L. Armstrong[2], D. A. Yates[2], J. P. Hutcheson[2], and M. F. Miller[1], [1]*Texas Tech University, Lubbock*, [2]*Merck Animal Health, DeSoto, KS*.

M150 **Carcass characteristics of Nellore steers receiving protected linseed oil during different periods of feedlot.**
T. M. Pivaro*[1], W. Henrique[2], A. A. M. Sampaio[1], J. L. V. Coutinho Filho[2], E. A. Oliveira[1], B. L. Rosa[1], and V. G. Carvalho[1], [1]*FCAV/Unesp, Jaboticabal, SP, Brazil*, [2]*APTA, São José do Rio Preto, SP, Brazil*.

M151 **Meat fatty acids profile of Nellore steers receiving protected linseed oil during different periods of feedlot.**
T. M. Pivaro*[1], W. Henrique[2], E. A. Oliveira[1], A. A. M. Sampaio[1], B. L. Rosa[1], J. L. V. Coutinho Filho[2], and V. G. Carvalho[1], [1]*FCAV/Unesp, Jaboticabal, SP, Brazil*, [2]*APTA, São José do Rio Preto, SP, Brazil*.

M152 **Meat quality of crossbred cattle finished at feedlot and fed increasing levels of linseed oil.**
E. A. Oliveira*[1,3], B. L. Rosa[1], T. M. Pivaro[1], M. B. P. Costa[1], V. G. Carvalho[1], A. T. Andrade[1], W. Henrique[2], and A. A. M. Sampaio[1], [1]*FCAV/Unesp, Jaboticabal, SP, Brazil*, [2]*APTA, São José do Rio Preto, SP, Brazil*, [3]*FAPESP Post-doctorate fellowship, São Paulo, SP, Brazil*.

M153 **A study of the variance in tenderness and carcass traits of pasture and feedlot finished beef cattle.**
L. A. Goonewardene*[1,2], J. A. Basarab[1], Z. Wang[2], R. W. Seneviratne[2], W. N. P. Yalingasinghe[2], P. S. Mir[3], J. L. Aalhus[4], and E. K. Okine[2], [1]*Alberta Agriculture and Rural Development, Edmonton, Alberta, Canada*, [2]*University of Alberta, Edmonton, Alberta, Canada*, [3]*Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [4]*Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada*.

M154 **Partitioning of energy into muscle and fat in relation to beef composite type and age at harvest.**
N. P. Y. Welegedara*[1], E. K. Okine[1], J. A. Basarab[2], Z. Wang[1], C. Li[3], H. Bruce[1], S. Markus[2], J. Stewart-Smith[4], and L. A. Goonewardene[1,2], [1]*University of Alberta, Edmonton, Alberta, Canada*, [2]*Alberta Agriculture and Rural Development, Edmonton, Alberta, Canada*, [3]*Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada*, [4]*BeefBooster Inc., Calgary, Alberta, Canada*.

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M155 **Influence of energy concentration of the diet and terminal sire line on growth performance and carcass and meat quality of pigs slaughtered at 115 kg of BW.**
G. Coca[1], M. P. Serrano[1], L. Cámara[1], P. Guzmán[1], J. D. Berrocoso[1], J. Coma[2], and G. G. Mateos*[1], [1]*Animal Science Department, Universidad Politécnica de Madrid, Madrid, Spain*, [2]*Vall Company, Lleida, Spain*.

M156 **The utilization of energy by pigs differing in estimated growth potential.**
A. D. Beaulieu*[1], D. A. Gillis[1], J. N. Shea[1], J. P. Marriott[1], and J. F. Patience[2], [1]*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, [2]*Iowa State University, Ames*.

M157 **Effect of starch level in pig diets on digestible energy value of crude glycerin using the mobile nylon bag technique.**
C. A. Ordoñez-Gomez*[1,2], C. Ariza-Nieto[1], and G. Afanador-Tellez[2], [1]*CORPOICA, Bogota, Colombia*, [2]*Universidad Nacional de Colombia, Bogota, Colombia*.

M158 **Dynamic changes in blood flow, oxygen consumption and metabolite responses to acute arginine supplementation in growing-finishing pigs.**
B. E. Tan[1], Y. L. Yin*[1], X. F. Kong[1], and G. Y. Wu[1,2], [1]*Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Department of Animal Science, Texas A&M University, College Station*.

M159 **Dietary valine:lysine ratios of 0.80 and 0.85 did not differ performance of primiparous sow and nursing large litters.**
S. M. Hong*, P. Y. Zhao, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

M160 **Sequence of apparent ileal digestible lysine for growing-finishing gilts.**
G. C. Rocha*[1], F. C. O. Silva[2], R. F. M. Oliveira[1], L. Alebrante[1], A. Saraiva[1], and J. L. Donzele[1], [1]*Federal University of Viçosa, Viçosa, MG, Brazil*, [2]*EPAMIG, Viçosa, MG, Brazil*.

M161 **Feed efficiency and carcass grade can be improved in finishing pigs by increasing the standardized ileal digestible lysine to metabolizable energy ratio.**
J. A. Jendza* and S. K. Baidoo, *University of Minnesota, Waseca*.

M162 **Chemical composition of dietary fat affects fat and energy digestibility when supplemented to lactating sows.**
D. S. Rosero*[1], J. Odle[1], R. D. Boyd[2], and E. van Heugten[1], [1]*Department of Animal Sciences, North Carolina State University, Raleigh*, [2]*Hanor Company Inc., Franklin, KY*.

M163 **Feeding phytonutrients to chickens: the relationship between energy availability and growth performance.**
D. Bravo*[1], V. Pirgosliev[2], and S. P. Rose[3], [1]*Pancosma, Geneva, Switzerland*, [2]*Avian Science Research Centre, Scottish Agricultural College, Ayr, UK*, [3]*National Institute of Poultry Husbandry, Harper Adams University College, Newport, UK*.

M164 **An evaluation of glutamine feed supplementation on the immune response, intestinal morphology, and growth performance of broilers at various stages of development.**
S. Khempaka* and W. Molee, *School of Animal Production Technology, Institute of Agricultural Technology, Suranaree University of Technology, Muang, Nakhon Ratchasima, Thailand*.

M165 **Velocity of l-methionine incorporation into the blood plasma of broiler chickens at the first week of age.**
A. C. Stradiotti*[1,4], C. Ducatti[2], J. R. Sartori[1], J. A. Bendassolli[3], V. C. Pelícia[1], P. C. Araujo[1], M. K. Maruno[1], L. V. C. Girão[1], F. G. Luiggi[1], R. Fasanaro[1], M. M. P. Sartori[2], J. C. Denadai[2], E. T. Silva[2], C. R. Souza-Kruliski[2], A. C. Pezzato[1], [1]*São Paulo State University, Faculty of Veterinary Medicine and Animal Science, Botucatu Campus, Botucatu, Brazil*, [2]*São Paulo State University, Institute of Bioscience, Botucatu Campus, Botucatu, Brazil*, [3]*University of São Paulo, Center of Nuclear Energy in Agriculture, "Luiz de Queiroz" Campus, Piracicaba, Brazil*, [4]*FAPESP*.

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Enzymes
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M166 **Influence of dietary Quantum phytase on bone strength and bone phosphorus contents of weaned pigs.**
S. K. Baidoo*[1], Q. Yang[1], G. He[1], T. D. Crenshaw[2], C. L. Wyatt[3], and J. A. Jendza[1], [1]*University of Minnesota, SROC, Waseca*, [2]*Department of Animal Science, University of Wisconsin, Madison*, [3]*AB Vista Feed Ingredient, Stillwell, KS*.

M167 **Dietary effects of Quantum phytase on performance and phosphorus utilization of weaned pigs.**
S. K. Baidoo*[1], Q. Yang[1], G. He[1], C. L. Wyatt[2], and J. A. Jendza[1], [1]*University of Minnesota, SROC, Waseca*, [2]*AB Vista Feed Ingredients, Stillwell, KS*.

M168 **Evaluation of phytase with different calcium and phosphorous density diet on the growth performance, nutrient digestibility, blood characteristics, and fecal noxious gas emission in growing pigs.**
L. Yan*[1], S. Zhang[1], D. S. Nam[2], and I. H. Kim[1], [1]*Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Nonghyup Feed Co. Ltd., Seoul, South Korea*.

M169 **Nutritional balance of broilers at starter and grower phase fed diets containing multienzyme complex and lipid sources.**
G. do Valle Polycarpo*[1], V. C. da Cruz[2], J. C. M. Cravo[3], P. de Assunção Pimenta Ribeiro[3], C. C. do Valle Polycarpo[1], and A. C. Pezzato[1], [1]*São Paulo State University, Botucatu, Brazil*, [2]*São Paulo State University, Dracena, Brazil*, [3]*University of São Paulo, Pirassununga, Brazil*.

M170 **Performance of 1- to 42-day-old broilers fed diets supplemented with multienzyme complexes.**
V. C. da Cruz*[1], G. A. M. Pasquali[1], P. A. B. Aiello[1], G. do Valle Polycarpo[2], R. Crivellari[1], R. F. de Oliveira[1], A. Barbieri[1], L. H. Zanetti[1], and C. C. do Valle Polycarpo[3], [1]*São Paulo State University, Dracena campus, Dracena, Brazil*, [2]*University of São Paulo, Pirassununga campus, Pirassununga, Brazil*, [3]*São Paulo State University, São José do Rio Preto campus, São José do Rio Preto, Brazil*.

M171 **Effects of Crina Poultry Plus and Ronozyme ProAct supplementation on growth performance, nutrient digestibility, relative organ weight, blood profiles, fecal microflora, and fecal noxious gas emission in broilers.**
Z. F. Zhang*[1], B. R. Lee[1], A. V. Rolando[2], D. H. Yoo[3], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*DSM Nutritional Products Philippines Inc., Bonifacio Global City, Taguig, Philippines*, [3]*All The Best Ltd., Seoul, South Korea*.

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Weanling Pig
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M172 **Effects of freeze-dried *Lactobacillus reuteri* on growth performance, serum indices, and intestinal microflora of weaned pigs.**
D. Y. Zhang, H. F. Ji*, J. Wang, S. X. Wang, H. Liu, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

M173 **Effects of two kinds of lactic acid bacteria on productive performance and intestinal microflora of weaned piglets.**
H. Liu, H. F. Ji*, S. X. Wang, J. Wang, D. Y. Zhang, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

M174 **Assessment of probiotic properties of *Enterococcus faecalis* isolated from gastrointestinal tract of piglet and its effect on growth performance of weaned pigs.**
J. Wang, H. F. Ji*, F. M. Wang, S. X. Wang, D. Y. Zhang, H. Liu, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

M175 **Digestibility of feed containing energy and protein ingredients to substitute dried whey and lactose for weanling pigs.**
L. V. C. Girão*[1], F. G. Luiggi[1], G. Mello[1], A. C. Stradiotti[1], C. C. E. J. Villela[1], N. B. Athayde[1], V. S. Cantarelli[2], R. Fasanaro[1], and D. A. Berto[1], [1]*São Paulo State University, Faculty of Veterinary Medicine and Animal Science, Botucatu Campus, Botucatu, SP, Brazil*, [2]*University Federal of Lavras, Lavras, MG, Brazil*.

M176 **Dietary clay does not negatively affect growth performance, nitrogen and iron status, or diarrhea score of weanling pigs.**
M. Song*[1], B. G. Kim[2], O. Osuna[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Konkuk University, Seoul, Korea*, [3]*Milwhite Inc., Brownsville, TX*.

M177 **Effects of dry matter content of milk replacer on intake and growth in suckling pigs.**
S. M. Mendoza*[1], E. van Heugten[1], P. Hock[2], D. McKilligan[3], and R. D. Boyd[2], [1]*Department of Animal Science, North Carolina State University, Raleigh*, [2]*Hanor Company Inc., Franklin, KY*, [3]*TechMix Inc., Stewart, MN*.

M178 **The protein-to-energy ratio is a main driver of growth performance in piglets.**
S. A. Guzmán-Pino, D. Solà-Oriol, J. Figueroa*, and J. F. Pérez, *Universitat Autònoma de Barcelona, Bellaterra, Spain*.

M179 **Nucleotides in weanling pig diets.**
C. Andrade*[1], V. V. Almeida[1], M. Sbardella[1], D. P. Perina[1], F. L. Silva[1], P. L. Y. C. Chang[2], B. Berenchtein[3], L. B. Costa[4], and V. S. Miyada[1], [1]*USP/ESALQ, Piracicaba, SP, Brazil*, [2]*University of North Carolina, Raleigh*, [3]*USP/CENA, Piracicaba, SP, Brazil*, [4]*UESC, Ilhéus, BA, Brazil*.

M180 **Time-related changes of serum amino acids in weanling piglets.**
Y. Xiao*, T. Wu, A. Chen, L. Yang, and C. Yang, *College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*.

M181 **Comparing different copper sources at pharmacological levels in nursery pigs.**
J. Zhao*[1], G. Allee[2], M. Vazquez-Anon[1], and R. J. Harrell[1], [1]*Novus International Inc., St. Charles, MO*, [2]*University of Missouri, Columbia*.

M182 **Effects of steam-processed rice, natural vitamin E, and glutamine in diets for weaning piglets.**
G. J. M. M. Lima*[1], M. Kutschenko[2], and E. T. Nogueira[2], [1]*Embrapa, Concordia, SC, Brazil*, [2]*Ajinomoto, Sao Paulo, SP, Brazil*.

Physiology and Endocrinology I

M183 **Cortisol levels during roping acclimation in rodeo calves.**
K. Comeaux, B. Pousson, A. Greathouse, D. Terro, J. Browning, and C. E. Ferguson*, *McNeese State University, Lake Charles, LA*.

M184 **Improving reproductive performance of Ossimi ewes using hormonal and enzymatic treatments.**
E. B. Abdalla*[1], A. Q. Al-Momani[2], F. A. Khalil[1], H. M. Gado[1], and F. S. Al-Barakeh[3], [1]*Ain Shams University, Cairo, Egypt*, [2]*Ministry of Agriculture, Amman, Jordan*, [3]*National Center for Agricultural Research and Extension, Al- Baq'a, Al-Balqa, Jordan*.

M185 **Prostaglandin-$F_{2\alpha}$ may not be necessary in short-term progesterone-based estrous synchronization protocols in cyclic ewes.**
K. N. D'Souza*, S. L. Rastle-Simpson, Q. S. Baptiste, and M. Knights, *West Virginia University, Morgantown*.

M186 **Is a CIDR as effective as a sponge in a novel follicle wave emergence and estrus synchronization protocol in anestrous ewes?**
M. B. Gordon[1], M. Bidarimath[1], M. Moggy[1], M. Camara[1], J. A. Small[3], P. M. Bartlewski[2], and D. M. W. Barrett*[1], [1]*Department of Plant & Animal Science, Nova Scotia Agricultural College, Truro, NS, Canada*, [2]*Ontario Veterinary College, University of Guelph, Guelph, ON, Canada*, [3]*Atlantic Food & Horticulture Research Centre, Agriculture & Agri-Food Canada, Truro, NS, Canada*.

M187 **Effects of parity and litter size on body reserves dynamics across a complete physiological year in Romane ewes reared under extensive grazing conditions.**
E. González-García*[1], V. Gozzo de Figuereido[2], D. Foulquie[3], E. Jousserand[3], A. Tessniere[1], F. Bocquier[1], and M. Jouven[1], [1]*INRA UMR868 Systèmes d'Èlevage Méditerranéens et Tropicaux (SELMET), 34060 Montpellier, France*, [2]*Escola Superior de Agricultura, São Paulo, Brazil*, [3]*INRA UE0321, Domaine de La Fage, 12250 Roquefort-sur-Soulzon, France*.

M188 **Pregnancy per AI (P/AI) after presynchronizing estrous cycles with Presynch-10 or PG-3-G before Ovsynch-56 in four dairy herds.**
J. S. Stevenson* and S. L. Pulley, *Kansas State University, Manhattan*.

M189 **Effect of bovine somatotropin (bST) injected at fixed-timed insemination of Holstein cows exposed to an ovsynch protocol.**
A. Reyes-Gomez, C. F. Arechiga*, M. A. Lopez-Carlos, J. I. Aguilera, R. R. Lozano, R. M. Rincon, F. De la Colina, and F. J. Escobar, *Autonomous University of Zacatecas, Zacatecas, Mexico*.

M190 **Effect of adding a GnRH or $PGF_{2\alpha}$ between the Presynch and Ovsynch program for first AI in lactating dairy cows.**
R. G. S. Bruno*[1,2], A. M. Farias[1], J. A. Hernández-Rivera[1], A. E. Navarrette[1], D. E. Hawkins[2], and T. R. Bilby[1], [1]*Texas A&M University, College Station*, [2]*West Texas A&M University, Canyon*.

M191 **Application of progesterone insert for the induction of lactation in nonpregnant dairy cows or heifers.**
F. Rivera-Acuña*[1], R. C. Fierros[1], E. M. Prado[1], P. Luna-Nevarez[1], J. G. Aceves[1], L. R. Avendaño[2], and A. C. Correa[2], [1]*Instituto Tecnológico de Sonora, Ciudad Obregón, México*, [2]*Universida Autónoma de Baja California, Mexicali, México*.

M192 **Enhancing endogenous progesterone during growth of the ovulatory follicle is positively associated with fertility in dairy cows treated with Presynch-11/Ovsynch, Double Ovsynch, and G6G/Ovsynch.**
F. Jiminez-Krassel*, J. P. Martins, B. S. Raghavendra, M. Kron, and J. R. Pursley, *Michigan State University, East Lansing*.

M193 **Effect of progesterone (P4) supplementation after AI on circulating P4 and development of the corpus luteum (CL) in dairy cattle.**
P. L. J. Monteiro*[1], F. L. M. Silva[1], M. Borsato[1], G. P. Nogueira[2], G. B. Mourão[1], L. D. Silva[1], M. C. Wiltbank[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*São Paulo State University, Araçatuba, SP, Brazil*, [3]*University of Wisconsin-Madison, Madison, WI*.

M194 **Reproductive performance of lactating dairy cows managed for first service using timed artificial insemination with or without detection of estrus using an accelerometer system.**
P. M. Fricke*, A. Valenza, J. O. Giordano, M. C. Amundson, and G. Lopes, *University of Wisconsin, Madison*.

M195 **Accuracy of pregnancy diagnosis outcomes using transrectal ultrasonography 29 days after artificial insemination in lactating dairy cows.**
J. O. Giordano* and P. M. Fricke, *University of Wisconsin-Madison, Madison*.

M196 **Early detection of pregnancy-specific protein B (PSPB) following conception in Holstein heifers.**
J. Howard*[1,2], C. Autran[1], J. Branen[2], G. Sasser[2], and A. Ahmdzadeh[1], [1]*University of Idaho, Moscow*, [2]*BioTracking LLC, Moscow, ID*.

M197 **Possible associations between ova-embryos characteristics in early lactating cows and subsequent reproductive performance.**
R. L. A. Cerri*[1], W. W. Thatcher[2], and J. E. P. Santos[2], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Florida, Gainesville*.

M198 **Effects of induced clinical and subclinical mastitis on oocyte developmental competence in bovine.**
S. Asaf[1], O. Furman[1], G. Leitner[2], D. Wolfenson[1], and Z. Roth*[1], [1]*The Robert H. Smith Faculty of Agriculture, Food and Environment, the Hebrew University, Rehovot, Israel*, [2]*The Veterinary Institute, Bet Dagan, Israel*.

M199 **Assessing the relationships of prostaglandin E2 in uterine flush fluid, peripheral blood prostaglandin E2 and progesterone with pregnancy outcome in dairy cattle.**
J. L. Fain*[1], M. W. Overton[2], D. J. Hurley[2], and G. P. Birrenkott[1], [1]*Clemson University, Clemson, SC*, [2]*University of Georgia, Athens*.

M200 **Effect of oral or subcutaneous administration of vitamin E and selenium on milk quality and reproductive function of Holstein cows.**
C. Garcia-Barrios, M. Rodriguez-Loera, C. F. Arechiga, M. A. Lopez-Carlos, J. I. Aguilera, R. M. Rincon, H. Rodriguez-Frausto, D. Rodriguez-Tenorio, and Z. Cortes*, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

M201 **Effects of supplementation with different PUFA during the postpartum periods of early lactating dairy cows, estradiol concentration and luteal function.**
E. Dirandeh[1], A. Towhidi*[1], S. Zeinoaldini[1], M. Ganjkhanlou[1], Z. Ansari Pirsaraei[2], and T. Saberifar[1], [1]*Department of Animal Science, Faculty of Agricultural Science and Engineering, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, Faculty of Animal Science and Fishery, Sari University of Agricultural and Natural Resources, Sari, Mazandaran, Iran*.

M202 **Hepatic patatin-like phospholipase domain-containing protein 3 mRNA expression is increased during feed restriction and in transition dairy cows.**
M. E. Viner*[1], S. S. Donkin[2], and H. M. White[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Department of Animal Sciences, Purdue University, West Lafayette, IN*.

M203 **Changes of the serum and milk proteome in lactating dairy cows duodenal infused with α-linolenic acid.**
J. H. Yang, J. Q. Wang*, T. J. Yuan, D. P. Bu, Y. X. Yang, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M204 **Investigation of the relationship between resumption of ovarian cyclicity and plasma nutritional markers in lactating dairy cows.**
A. Ahmadzadeh[1], J. Spencer*[1], B. Shafii[1], C. Johnson[1], J. Dalton[2], K. Carnahan[1], and S. Reeds[1], [1]*University of Idaho, Moscow*, [2]*University of Idaho R & E Center, Caldwell*.

M205 **Insulin responses in dairy cows with different fat mobilization during early lactation.**
U. Kautzsch[1], B. Kuhla[1], M. Röntgen[1], S. Görs[1], R. M. Bruckmaier[2], C. C. Metges[1], and H. M. Hammon*[1], [1]*Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*, [2]*Veterinary Physiology, Vetsuisse Faculty, Bern, Switzerland*.

M206 **Effects of heat stress and plane of nutrition on adipose tissue metabolism-related gene expression in lactating Holstein cows.**
G. Xie*[1], L. W. Hall[2], M. Nearing[2], L. C. Cole[2], J. Allen[2], L. H. Baumgard[3], D. M. Spurlock[3], and R. P. Rhoads[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*University of Arizona, Tucson*, [3]*Iowa State University, Ames*.

M207 **Relevance of mineralocorticoid receptors in different fat depots of dairy cows supplemented with CLA.**
K. Friedauer*[1], S. Dänicke[2], D. von Soosten[2], H. Sauerwein[1], and S. Häussler[1], [1]*University of Bonn, Bonn, NRW, Germany*, [2]*Federal Research Institute, Braunschweig, Lower Saxony, Germany*.

M208 **The effects of a soybean and canola diet during pre-pubertal growth on dairy heifer fertility.**
M. B. Gordon*[1], E. Thompson[1], T. Gowan[2], D. Mosely[3], J. A. Small[2], and D. M. W. Barrett[1], [1]*Department of Plant & Animal Science, Nova Scotia Agricultural College, Truro, NS, Canada*, [2]*Atlantic Food & Horticulture Research Centre, Agriculture & Agri-Food Canada, Truro, NS, Canada*, [3]*AgraPoint, Bible Hill, NS, Canada*.

M209 **Reproduction in grazing dairy cows treated with 14-d CIDR for presynchronization before a timed AI (TAI) compared with AI after observed estrus.**
R. C. Escalante*, S. E. Poock, D. J. Mathew, W. R. Martin, E. M. Newsom, S. A. Hamilton, K. G. Pohler, and M. C. Lucy, *University of Missouri, Columbia*.

M210 **Hormonal therapies on repeat breeder cows of a dairy production unit of central Mexico (Aguascalientes State).**
F. Lugo-Garcia, C. F. Arechiga*, A. Reyes-Gomez, R. R. Lozano, F. J. Escobar, R. M. Rincon, J. I. Aguilera, and M. A. Lopez-Carlos, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

M211 **Effects of month of breeding on reproductive efficiency of dairy cows inseminated with sexed or nonsexed semen in a hot arid environment.**
E. Sepulveda*[1], O. Angel-Garcia[1], J. M. Guillen[1], C. A. Meza-Herrrera[2], F. G. Veliz[1], and M. Mellado[1], [1]*Universidad Autonoma Agraria Antonio Narro, Torreon, Coahuila, Mexico*, [2]*Universidad Autonoma Chapingo-Unidad Regional Universitaria de Zonas Aridas, Bermejillo, Durango, Mexico*.

M212 **Effects of follicular wave and progesterone concentration during follicle growth on conceptus global gene expression in dairy cows.**
R. S. Bisinotto*[1], E. S. Ribeiro[1], L. F. Greco[1], N. Martinez[1], R. L. A. Cerri[2], W. W. Thatcher[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*University of British Columbia, Vancouver, BC, Canada*.

M213 **Expression of CYP11A1, CYP17, and CYP19A1 in granulosa cells, and determination of hormone levels in follicular fluid from dominant follicles and follicular cysts in Holstein cows.**
P. Hernández-Briano, J. A. Grado-Ahuir*, E. Burrola-Barraza, R. M. Villaseñor González, L. E. Escobedo-Morales, and S. A. Quintana-Quintana, *Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

M214 **Comparison of dry matter intake and somatotropic axis components of Holstein and crossbred dairy cows.**
L. G. D. Mendonça*[1], N. B. Litherland[2], M. C. Lucy[3], D. H. Keisler[3], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, Saint Paul*, [2]*Department of Animal Science, University of Minnesota, Saint Paul*, [3]*Division of Animal Sciences, University of Missouri, Columbia*.

M215 **Effect of subclinical mastitis and postpartum uterine disease on expression of estrous behavior in cows.**
Y. Lavon[1], M. Kaim[2], G. Leitner[3], H. Voet[4], and D. Wolfenson*[4], [1]*Israel Cattle Breeders Association, Caesarea, Israel*, [2]*Agricultural Research Organization, Bet-Dagan, Israel*, [3]*The Veterinary Institute, Bet Dagan, Israel*, [4]*Faculty of Agriculture, Food and Environment, The Hebrew University, Rehovot, Israel*.

M216 **Dietary protein:carbohydrate ratio affects glucose tolerance and oxidation in pregnant gilts.**
C. C. Metges*, S. Görs, I. Lang, K.-P. Brüssow, C. Rehfeldt, and W. Otten, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

Production, Management and the Environment
Dairy I

M217 **Measuring dry matter of corn silage, haylage, and TMR samples with a food dehydrator.**
R. J. Norell*[1], C. M. Matuk[2], S. Hines[2], M. Chahine[2], M. de Haro Marti[3], and S. C. Parkinson[4], [1]*University of Idaho, Idaho Falls*, [2]*University of Idaho, Twin Falls*, [3]*University of Idaho, Gooding*, [4]*University of Idaho, Preston*.

M218 **Determining surface area of exposed silage on California dairy farms.**
D. Meyer[1], P. H. Robinson[1], P. L. Price[1], R. Rauch[1], and J. M. Heguy*[2], [1]*University of California, Davis*, [2]*University of California Cooperative Extension, Modesto*.

M219 **Comparison of two methods of collecting calf birthweights (BW) in dairy calves.**
N. M. Long* and J. F. Smith, *Department of Animal Sciences, University of Arizona, Tucson*.

M220 **Assessing among-farm variability in heifer body weights.**
G. B. Bond*[1,2], M. A. G. von Keyserlingk[1], N. Chapinal[1], E. A. Pajor[2], and D. M. Weary[1], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Calgary, Calgary, AB, Canada*.

M221 **The effects of increased space allowance on dairy calf performance, behavior, and respiratory antibody production.**
M. S. Calvo*[1], L. E. Hulbert[1], A. Louie[2], L. J. Gershwin[3], K. E. Pinkerton[4], K. C. Klasing[1], C. B. Tucker[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*School of Veterinary Medicine, University of California, Davis*, [3]*Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California, Davis*, [4]*Department of Anatomy, Physiology, and Cell Biology, School of Veterinary Medicine; Center for Health and the Environment; University of California, Davis*.

M222 **Growth measurements of organically raised dairy steers compared with conventionally raised dairy steers.**
E. A. Bjorklund* and B. J. Heins, *University of Minnesota, West Central Research and Outreach Center, Morris*.

M223 **Associations between herd-level feeding management practices, feed sorting, and milk production in freestall dairy farms.**
A. D. Sova*[1], S. J. LeBlanc[2], B. W. McBride[3], and T. J. DeVries[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

M224 **Comparison of the effects of conductive cooling to fan cooling on lactating dairy cattle.**
R. B. Thornton*[1], W. A. Greene[1], J. Bruer[2], and T. Steele[2], [1]*The Ohio State University, Wooster*, [2]*Conco Technologies, Chandler, AZ.*

M225 **Effect of FlipFan cooling system on lactating dairy cattle performance in an open dry-lot commercial dairy in a sub-tropical environment in central Texas.**
J. A. Hernandez-Rivera*[2], F. D. Alvarez-Valenzuela[2], U. Macias-Cruz[2], L. Avendano-Reyes[2], and T. R. Bilby[1], [1]*Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville*, [2]*Instituto de Ciencias Agricolas, Universidad Autonoma de Baja California, Ejido Nuevo Leon, Valle de Mexicali, Mexico*.

M226 **Correlation between invasive methods for recording physiological parameters and infrared thermography in calves.**
P. A. B. Mac-Lean[1], H. Savastano Junior[1], L. C. Roma Junior*[2], S. Correa[1], C. N. Barra[1], C. G. Titto[1], and C. E. L. Oliveira[1], [1]*University of Sao Paulo, Pirassununga, Sao Paulo State, Brazil*, [2]*APTA Centro Leste, Ribeirao Preto, Sao Paulo State, Brazil*.

M227 **Agreement between reticular and vaginal measurement of core temperature in dairy cattle.**
J. A. Small[1,2], R. Hayman[2], T. Rudderham[2], A. Fredeen[2], and W. Webster*[3], [1]*Agriculture and Agri-Food Canada, Truro, NS, Canada*, [2]*Nova Scotia Agricultural College, Truro, NS, Canada*, [3]*DVM Systems LLC, Denver, CO*.

M228 **Warm drinking water lowers core temperature in dairy cattle.**
J. A. Small[1,2], T. Rudderham[2], R. Hayman[2], A. Fredeen*[2], and W. Webster[3], [1]*Agriculture and Agri-Food Canada, Truro, NS, Canada*, [2]*Nova Scotia Agricultural College, Truro, NS, Canada*, [3]*DVM Systems LLC, Denver, CO*.

M229 **Influence of time of day, breed, and season on reticulorumen temperature in lactating dairy cows.**
D. Liang*, D. L. Ray, J. D. Clark, and J. M. Bewley, *University of Kentucky, Lexington*.

M230 **Udder skin temperature of dairy cows under heat stress and physiological parameters tested by infrared thermography in two cooling system conditions.**
R. B. Younes[1,3], G. Licitra[2,3], G. Azzaro[2], I. Schadt[2], M. Caccamo*[2], R. Petriglieri[2], and S. Carpino[2], [1]*Institut National Agronomique de Tunisie, Tunis, Tunisia*, [2]*CoRFiLaC, Regione Siciliana, Ragusa, Italy*, [3]*DISPA, Catania University, Catania, Italy*.

M231 **Establishing the summer:winter ratio to evaluate the effects of heat stress on conception rates in US commercial dairies.**
H. M. Robertson*[1,2] and T. R. Bilby[2], [1]*Department of Animal Science and Wildlife Management, Tarleton State University, Stephenville, TX*, [2]*Texas AgriLife Research and Extension, Texas A&M System, Stephenville*.

M232 **Utilizing production parameters to establish the summer:winter ratio to evaluate the effects of heat stress on commercial dairies in the southwest.**
H. M. Robertson*[1,2] and T. R. Bilby[2], [1]*Department of Animal Science and Wildlife Management, Tarleton State University, Stephenville, TX*, [2]*Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville*.

M233 **Heat stress effects on milk production and udder health in Holstein and Jersey cows.**
D. L. Smith, S. H. Ward*, T. Smith, and B. J. Rude, *Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State*.

M234 **Impact of season on the metabolic profile in transition Holstein dairy cows in summer and winter.**
K. J. Lager*[1,2], E. R. Jordan[1], R. G. S. Bruno[1,2], J. A. H. Rivera[3], R. Sprowls[4], and D. R. Topliff[2], [1]*Texas AgriLife Extension Service, Texas A&M System, College Station*, [2]*West Texas A&M University, Canyon*, [3]*Texas AgriLife Research, Stephenville*, [4]*Texas Veterinary Medical Diagnostic Laboratory, Amarillo*.

M235 **Abundance of antibiotic resistance genes in the gut and feces of ionophore-fed lactating cows.**
T. Galligan*, P. P. Ray, A. Pruden, and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg*.

M236 **Production and management consequences of abortion in dairy herds of central Mexico.**
R. R. Lozano-Dominguez*, C. F. Arechiga, R. M. Rincon, F. J. Escobar, and J. M. Silva, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

M237 **Prevalence of dairy cattle diseases and abortion in central Mexico.**
C. Murillo, R. R. Lozano, C. F. Arechiga*, M. Rincon, and Z. Cortes, *Autonomous University of Zacatecas, Zacatecas, Mexico*.

M238 **Analysis of factors affecting heifer fertility traits in Chinese Holstein.**
Y. Wang*[1], X. Guo[1], G. Guo[2,4], X. Li[2], L. Liu[3], W. Zheng[3], T. Yang[3], Q. Liu[5], Y. Zhang[1], S. Zhang[1], and Y. Zhang[1], [1]*College of Animal Science and Technology, China Agriculture University, Beijing, China*, [2]*Beijing Sanyuan Lvhe Dairy Cattle Center, Beijing Sanyuan Breeding Technology Co., Beijing, China*, [3]*Beijing Dairy Cattle Center, Beijing, China*, [4]*Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [5]*Beijing Capital Agribusiness Group, Beijing, China*.

M239 **Characterization of certified organic Wisconsin dairy farms: Management practices, feeding regimens, and milk production.**
C. A. Hardie*[1], V. E. Cabrera[1], M. Dutreuil[1], R. Gildersleeve[2], and M. Wattiaux[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Wisconsin Extension, Dodgeville*.

M240 **Impact of dairy herd reproductive performance on predicted economic performance, enteric CH_4 emission and excretion of N and P using a Markov-chain model.**
M. J. Aguerre*, J. O. Giordano, A. S. Kalantari, M. A. Wattiaux, P. M. Fricke, and V. E. Cabrera, *University of Wisconsin-Madison, Madison*.

M241 **Reproductive indicators of dairy enterprises in north and west Mexico.**
H. Estrella-Quintero*, D. V. Mariscal-Aguayo, R. Núñez-Domínguez, and G. Maldonado-García, *Universidad Autónoma Chapingo, Chapingo, Estado de México, México*.

M242 **Seasonal variation on milk components and relation to quality payment program.**
L. C. Roma Junior*[1], A. C. S. Gonçalves[1], and P. F. Machado[2], [1]*APTA Centro Leste, Ribeirao Preto, Sao Paulo State, Brazil*, [2]*Clínica do Leite, ESALQ/USP, Piracicaba, Sao Paulo State, Brazil*.

M243 **Effects of temporary calf removal (CR) prior to fixed-time AI (TAI) on pregnancy rates and subsequent calf performance in suckled beef cows.**
G. H. L. Marquezini*, F. M. C. Silva, K. M. Bischoff, T. E. Black, V. R. G. Mercadante, N. DiLorenzo, and G. C. Lamb, *North Florida Research and Education Center, University of Florida, Marianna*.

M244 **Effect of cattle processing and handling on changes in measures of temperament during a 70-d feed efficiency test.**
K. M. Bischoff*, T. E. Black, V. R. G. Mercadante, G. H. L. Marquezini, D. Henry, N. DiLorenzo, and G. C. Lamb, *North Florida Research and Education Center, University of Florida, Marianna*.

M245 **Culling reasons and the association of herd size and milk yield with culling rates in dairy herds in southern Brazil.**
R. Almeida*[1], D. F. F. Silva[1], L. Alegransi[1], R. B. Navarro[2], A. A. Valloto[3], and J. A. Horst[3], [1]*Universidade Federal do Paraná, Curitiba, PR, Brazil*, [2]*Capal Cooperativa Agroindustrial, Arapoti, PR, Brazil*, [3]*Associação Paranaense de Criadores de Bovinos da Raça Holandesa, Curitiba, PR, Brazil*.

M246 **Nitrogen utilization efficiency in specialized dairy herds in southern Brazil.**
D. Jerszurki[1], L. Jerszurki[2], R. B. Navarro[3], A. Ostrensky[4], G. T. Santos[5], and R. Almeida*[1], [1]*Universidade Federal do Paraná, Curitiba, PR, Brazil*, [2]*Universidade Tecnológica Federal do Paraná, Curitiba, PR, Brazil*, [3]*Capal Cooperativa Agroindustrial, Arapoti, PR, Brazil*, [4]*Pontifícia Universidade Católica do Paraná, Curitiba, PR, Brazil*, [5]*Universidade Estadual de Maringá, Maringá, PR, Brazil*.

Ruminant Nutrition
Beef I

M247 **Carcass primary cuts proportions of Nellore bulls stratified for residual feed intake.**
F. L. Araujo*[1], R. H. Branco[2], C. D. A. Batalha[1], S. F. M. Bonilha[2], A. C. Queiroz[1], and W. P. Costa[1], [1]*Departmento de Zootecnia, Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertãozinho, SP, Brazil*.

M248 **Creatinine excretion and metabolizable protein requirements for maintenance of Red Norte young bulls.**
T. R. Amorim, M. M. Ladeira*, M. L. Chizzotti, J. R. R. Carvalho, A. R. V. Lima, N. L. Magalhães, and P. D. Teixeira, *Federal University of Lavras, Lavras, MG, Brazil*.

M249 **Measurement of purine derivatives and creatinine excretion in steers fed fescue seed.**
J. H. Eisemann*, G. B. Huntington, and A. E. Lamb, *North Carolina State University, Raleigh*.

M250 **Feedlot performance and carcass characteristics of limit-fed steers.**
K. Thompson*[1], P. Gunn[2], R. Lemenager[2], M. Claeys[2], T. Nennich[2], and S. Lake[1], [1]*University of Wyoming, Laramie*, [2]*Purdue University, West Lafayette, IN*.

M251 **Ergovaline disappearance from a ruminally incubated buffer.**
A. P. Foote*[1], N. B. Kristensen[2], J. L. Klotz[3], K. R. Brown[3], J. R. Strickland[3], D. H. Kim[1], A. F. Koontz[1], K. R. McLeod[1], L. P. Bush[1], and D. L. Harmon[1], [1]*University of Kentucky, Lexington*, [2]*Syddansk Kvæg, Vojens, Denmark*, [3]*USDA-ARS, FAPRU, Lexington, KY*.

M252 **Body condition score and heart girth change between 7 and 18 months of age to estimate pregnancy probability of Hereford heifers mated at 18 months of age.**
J. B. G. Costa Junior*[1], J. O. J. Barcellos[1], J. C. Whittier[2], I. D. P. S. Diaz[3], L. Canellas[1], V. Peripolli[1], J. K. Ahola[2], and R. K. Peel[2], [1]*Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*, [2]*Colorado State University, Fort Collins*, [3]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

M253 **Use of body weight gain at different ages to evaluate the pregnancy probability and the change in the pregnancy chance of Hereford heifers mated at 18 months of age.**
J. B. G. Costa Junior*[1], J. O. J. Barcellos[1], J. C. Whittier[2], I. D. P. S. Diaz[3], L. Canellas[1], V. Peripolli[1], J. K. Ahola[2], and R. K. Peel[2], [1]*Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil*, [2]*Colorado State University, Fort Collins*, [3]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

M254 **Use of a fescue seed model to study effects of ergot alkaloids on temperature regulation in steers.**
G. B. Huntington* and J. H. Eisemann, *North Carolina State University, Raleigh*.

M255 **Deposition of muscular and subcutaneous fat tissues of Nellore steers fed pasture with crude glycerin.**
E. San Vito*, T. T. Berchielli, J. F. Lage, E. E. Dallantonia, L. M. Delevatti, C. S. R. Junior, R. G. Canesin, M. Machado, A. F. Ribeiro, R. A. Silva, and R. A. Reis, *Universidade Estadual Paulista "Júlio de Mesquita Filho," Jaboticabal, São Paulo, Brazil*.

M256 **Differences in residual feed intake are largely associated with changes in body weight gain composition.**
M. L. Nascimento*[1], A. R. D. L. Souza[1], R. R. Tullio[2], M. M. Alencar[2], A. N. Rosa[3], and D. P. D. Lanna[1], [1]*University of Sao Paulo, Piracicaba, São Paulo, Brazil*, [2]*Embrapa Cattle Southeast, São Carlos, São Paulo, Brazil*, [3]*Embrapa Beef Cattle, Campo Grande, Mato Grosso do Sul, Brazil*.

M257 **Effects of trehalose on performance and morbidity of newly received beef steers.**
E. M. Domby*, C. H. Ponce, J. S. Schutz, and M. L. Galyean, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

M258 **Performance of fattening steers on Marandu pasture supplemented with levels of total digestible nutrient in the water season.**
J. F. W. Koscheck*, J. T. Zervoudakis, L. K. Hatamoto-Zervoudakis, L. S. Cabral, A. A. Oliveira, J. M. B. Benatti, D. M. G. Carvalho, and R. P. Silva, *Federal University of Mato Grosso, Cuiabá, MT, Brazil*.

M259 **Different supplementation strategies to grazing beef cattle in Brazil.**
H. O. A. Santana[1], H. J. Fernandes*[1], M. A. Rezende[3,2], G. L. D. Feijó[2], A. Aguiar[4], E. P. Rosa[1], C. N. F. Guaraldo[1], and J. A. da Costa Lima[1], [1]*State University of Mato Grosso do Sul, Aquidauana, MS. Brazil*, [2]*EMBRAPA Beef Cattle Center, Campo Grande, MS. Brazil*, [3]*Federal University of Grande Dourados, Dourados, MS. Brazil*, [4]*University of Florida, Gainesville*.

M260 **Determination of net energy requirements of growing Nellore cattle.**
S. L. Posada[1], A. L. C. C. Borges*[2], R. R. Noguera[1], N. M. Rodríguez[2], R. R. Silva[2], C. G. Pancoti[2], and H. F. Lage[2], [1]*Universidad de Antioquia, Medellín, Antioquia, Colombia*, [2]*Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*.

M261 **Supplementation of fattening steers on Marandu pasture in the summer: intake and digestibility.**
J. W. K. Koscheck*, J. T. Zervoudakis, L. K. Hatamoto-Zervoudakis, L. S. Cabral, A. A. Oliveira, J. M. B. Benatti, D. M. G. Carvalho, R. P. Silva, and R. G. F. Silva, *Federal University of Mato Grosso, Cuiabá, MT, Brazil*.

M262 **Performance, feed efficiency and ultrasound carcass traits of Nellore cattle with different classes of residual gain.**
M. H. A. Santana*[1], R. C. Gomes[2], S. L. Silva[1], J. B. S. Ferraz[1], and P. R. Leme[1], [1]*College of Animal Science and Food Engineering, University of São Paulo, Pirassununga, SP, Brazil*, [2]*State University of Londrina, Londrina, PR, Brazil*.

M263 **Effect of diet type on the expression of genes regulating ruminal epithelium function of cattle.**
A. K. Kelly*[1], S. M. Waters[2], K. Keogh[1,2], E. O'Shea[1,2], and D. A. Kenny[2], [1]*School of Agriculture and Food Science, University College Dublin, Dublin, Ireland*, [2]*Teagasc, Animal Bioscience Department, Dunsany, Co. Meath, Ireland*.

M264 **Correlations between arrival plasma amino acid concentrations and feedlot performance and effects of arrival sex and antibiotic treatments in high-risk calves.**
C. L. Maxwell*[1], S. J. Terrill[1], J. W. Dillwith[2], R. D. Madden[2], M. L. May[3], G. K. Kim[3], S. L. Parr[3], C. W. Booker[3], C. R. Krehbiel[1], and L. O. Burciaga-Robles[3], [1]*Department of Animal Science, Oklahoma State University, Stillwater*, [2]*Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater*, [3]*Feedlot Health Management Services Ltd., Okotoks, AB, Canada*.

M265 **Evaluation of the acid insoluble ash technique as a method for determining apparent diet digestibility in beef cattle.**
E. J. Mc Geough*[1,2], D. A. Kenny[2], and P. O'Kiely[1], [1]*Teagasc Animal & Grassland Research and Innovation Centre, Grange, Dunsany, Co. Meath, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Dublin, Ireland*.

M266 **Feedlot performance and carcass traits of Nellore cattle as affected by sex condition and frame size.**
S. L. Silva*[1], R. C. Gomes[2], M. N. Bonin[1], L. S. Martello[1], P. L. Alvarez[1], L. S. Oliveira[1], M. R. Mazon[1], J. C. M. Nogueira Filho[1], J. B. S. Ferraz[1], and P. R. Leme[1], [1]*Universidade de São Paulo, Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, SP, Brazil*, [2]*Dep. Zootecnia, Universidade Estadual de Londrina, Londrina, PR, Brazil*.

M267 **Evaluation of a rapid determination of heat production and respiratory quotient in Holstein steers using the washed rumen technique.**
D. H. Kim*[1], K. R. McLeod[1], J. L. Klotz[2], A. F. Koontz[1], A. P. Foote[1], and D. L. Harmon[1], [1]*University of Kentucky, Lexington*, [2]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*.

M268 **Effects of lipid sources on intake and digestibility of beef cattle finished at pasture.**
I. P. C. Carvalho*[1,3], T. T. Berchielli[1,2], G. Fiorentini[1,3], J. F. Lage[1,3], Y. T. G. Salcedo[1], H. V. Brandt Filho[1], L. G. Rossi[1], C. S. Ribeiro Junior[1,3], and L. M. Delevatti[1], [1]*Universidade Estadual Paulista Julio de Mesquita Filho, Jaboticabal, Brazil*, [2]*INCT/CA member, Brazil*, [3]*FAPESP Fundação de Amparo a*, [4]*Pesquisa do Estado de São Paulo, São Paulo, Brazil*.

M269 **Nutrient mass balance and performance of feedlot cattle fed barley segregated by near infrared spectroscopy.**
E. M. Hussey, C. F. O'Neill*, R. E. Peterson, L. O. Burciaga-Robles, and M. L. May, *Feedlot Health Management Services Ltd., Okotoks, AB, Canada*.

M270 **Development of a fecal starch index to predict the feeding value of barley grain for feedlot cattle.**
W. Z. Yang* and T. A. McAllister, *Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

M271 **Effect of direct-fed microbials on utilization of ruminally degradable protein in receiving steers.**
N. M. Kenney*, C. A. Schaeffer, E. S. Vanzant, J. W. Lehmkuhler, D. L. Harmon, and K. R. McLeod, *University of Kentucky, Lexington*.

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M272 **Utilizing dietary nutrients to predict nitrogen efficiency in lactating dairy cattle.**
N. Swanepoel* and P. H. Robinson, *University of California, Davis*.

M273 **Effects of water iron concentration, valence and source on drinking water preference of lactating cows.**
O. N. Genther* and D. K. Beede, *Michigan State University, East Lansing*.

M274 **Effect of cecum starch infusion on hindgut fermentation and inflammatory response in dairy cattle.**
S. Li*, H. Khazanehei, E. Khafipour, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

M275 **Hepatic triglyceride concentration and fatty acid profile in early lactation Holstein cows fed saturated medium- or long-chain fatty acids.**
M. Hollmann*[1], T. H. Herdt[2,3], J. A. Zyskowski[3], and D. K. Beede[1], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Large Animal Clinical Sciences, Michigan State University, East Lansing*, [3]*Diagnostic Center for Population and Animal Health, Michigan State University, East Lansing*.

M276 **Production and metabolic response of lactating dairy cows to heat stress while supplemented with a dietary antioxidant.**
A. L. Kenny*[1], Y. M. Wang[2], N. M. Barkley[1], R. R. Rodrigues[1], K. A. Davison[1], G. I. Zanton[2], and M. R. Waldron[1], [1]*University of Missouri, Columbia*, [2]*Novus International Inc., St. Charles, MO*.

M277 **Effect of supplemental fatty acids on production responses and hepatic fatty acid composition and gene expression of dairy cows fed diets containing low concentrations of fatty acids.**
L. F. Greco*[1], M. Garcia[1], B. L. Artiaga[1], E. K. Ganda[1], R. S. Bisinotto[1], F. S. Lima[1], N. Martinez[1], E. S. Ribeiro[1], A. L. Lock[2], W. W. Thatcher[1], C. R. Staples[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*Michigan State University, East Lansing*.

M278 **Effect of lactation stage on milk production and milk quality in dairy cows in confinement.**
J. A. de Freitas*[1], J. C. de Souza[3], R. P. Lana[2], A. F. G. Neto[1], V. L. Souza[1], and A. L. dos Santos[1], [1]*Federal University of Parana, Palotina, Parana, Brazil*, [2]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*, [3]*Federal University of South of Mato Grosso, Aquidauana, Mato grosso do Sul, Brazil*.

M279 **Comparison of growth curves between two genetic compositions of dairy goats using nonlinear mixed models.**
J. G. L. Regadas Filho*[1], M. T. Rodrigues[1], R. A. M. Vieira[2], L. F. Brito[1], and T. S. Oliveira[1], [1]*Universidade Federal de Viçosa, MG, Brazil*, [2]*Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campos dos Goytacazes, RJ, Brazil*.

M280 **Nonlinear mixed models fitted to growth curves of dairy goats.**
J. G. L. Regadas Filho*[1], M. T. Rodrigues[1], R. A. M. Vieira[2], L. F. Brito[1], and T. S. Oliveira[1], [1]*Universidade Federal de Viçosa, MG, Brazil*, [2]*Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campos dos Goytacazes, RJ, Brazil*.

M281 **Increasing doses of *trans*-10, *cis*-12 conjugated linoleic acid (CLA) and changes in milk fat content and secretion of dairy ewes.**
M. Baldin[1], R. Dresch[1], D. R. M. Alessio[1], J. Souza[2], M. A. S. Gama[3], M. P. Soares[4], and D. E. Oliveira*[1,5], [1]*Centro de Ciências Agroveterinárias, UDESC, Lages, SC, Brazil*, [2]*Esalq/USP, Piracicaba, SP, Brazil*, [3]*Embrapa, CNPGL, Juiz de Fora, MG, Brazil*, [4]*Instituto Federal Catarinense, Araquari, SC, Brazil*, [5]*Centro de Educação Superior do Oeste, UDESC, Chapecó, SC, Brazil*.

M282 **Impacts of fat level and source on production of high producing California dairy cows.**
J. M. Soderstrom*[1], P. H. Robinson[1], and K. Karges[2], [1]*University of California, Davis*, [2]*POET Nutrition, Sioux Falls, SD*.

M283 **Meta-analysis: Impact of grain type and corn harvest and processing practices on digestion and lactation performance by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *Department of Dairy Science, University of Wisconsin-Madison, Madison*.

M284 **Finding a proxy for the inhibiting effects of polyunsaturated fatty acids on milk fat in dairy cows.**
G. Maxin*[1], H. Rulquin[1], and F. Glasser[2], [1]*INRA-Agrocampus Ouest, Rennes, France*, [2]*INRA, Theix, Saint-Gènes-Champanelle, France*.

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Dairy: Calves and Heifers

M285 **Crude glycerin as a replacement for corn in starter concentrate for dairy calves: Ruminal and blood parameters.**
G. G. O. Napoles[1,2], C. E. Oltramari[1,3], J. T. Silva[1,3], G. B. Mourão[1,3], and C. M. M. Bittar*[1,3], [1]*Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil*, [2]*Fapesp, São Paulo, SP, Brazil*, [3]*CNPq, Brasília, DF, Brazil*.

M286 **Effect of feed presentation on pre- and post-weaning performance of dairy calves.**
E. K. Miller-Cushon[1], R. Bergeron[2], K. E. Leslie[3], G. J. Mason[4], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph, Campus d'Alfred, Alfred, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*, [4]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

M287 **Interactive effects of feeding frequency and feed bunk space on the feeding behavior of limit-fed dairy heifers.**
A. M. Greter[1], T. F. Duffield[2], B. W. McBride[3], T. M. Widowski[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*, [3]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

M288 **Effect of physical form of forage on performance, feeding behavior, and digestibility of Holstein calves.**
C. Montoro[1], E. K. Miller-Cushon*[2], T. J. DeVries[2], and A. Bach[1,3], [1]*Department of Ruminant Production, IRTA, Barcelona, Spain*, [2]*Department of Animal and Poultry Science, University of Guelph, Kemptville, ON, Canada*, [3]*ICREA, Barcelona, Spain*.

M289 **Effects of age on gene expression of transport proteins in ruminal epithelia of milk-fed calves.**
M. Oba*, T. B. McFadden, and L. L. Guan, *University of Alberta, Edmonton, AB, Canada*.

M290 **Ruminal and blood parameters of dairy calves managed on different milk-feeding programs.**
M. R. Paula[1,2], G. G. O. Napoles[1,3], M. P. C. Gallo[1,2], M. C. Soares[1,3], and C. M. M. Bittar*[1,2], [1]*Escola Superior de Agricultura, Piracicaba, SP, Brazil*, [2]*CNPq, Brasília, DF, Brazil*, [3]*Fapesp, São Paulo, SP, Brazil*.

M291 **Effects of kelp meal on performance and structural growth of conventional and organic dairy calves.**
G. M. Soule*, A. F. Brito, A. Miranda, L. Chase, N. L. Whitehouse, E. S. Fletcher, and N. T. Antaya, *University of New Hampshire, Durham*.

M292 **Total serum protein in calves is not correlated with future milk performance.**
B. Ozer*[1], A. Bach[2,3], and M. Chahine[1], [1]*University of Idaho, Twin Falls*, [2]*IRTA, Caldes de Montbui, Spain*, [3]*ICREA, Barcelona, Spain*.

M293 **Intake and performance of Holstein heifers transitioned to group housing from individual pens using differing grain mixes with or without hay the first two weeks after moving.**
D. Ziegler*[1], D. Schimek[2], B. Ziegler[2], H. Chester-Jones[1], M. Raeth-Knight[3], and G. Golombeski[4], [1]*University of Minnesota Southern Research and Outreach Center, Waseca*, [2]*Hubbard Feeds Inc., Mankato, MN*, [3]*University of Minnesota, St. Paul*, [4]*Hubbard Feeds Inc., Iowa City, IA*.

M294 **Precision-feeding dairy heifers with different levels of dietary fiber and F:C. Effects on protein utilization, N efficiency, and rumen fermentation.**
G. J. Lascano*[1] and A. J. Heinrichs[2], [1]*The California Polytechnic State University, San Luis Obispo*, [2]*The Pennsylvania State University, University Park*.

M295 **Insulin response is affected by the level of milk replacer offered to young calves.**
A. Bach*[1,2], Ll. Castells[2], C. Montoro[2], and M. Terre[2], [1]*ICREA, Barcelona, Spain*, [2]*Department of Ruminant Production, IRTA, Barcelona, Spain*.

M296 **Optimizing particle size and moisture in diets for dairy heifers.**
M. A. Khan[1], A. Bach[2,3], Ll. Castells*[3], D. M. Weary[1], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*ICREA, Barcelona, Spain*, [3]*Deparment of Ruminant Production, IRTA, Barcelona, Spain*.

M297 **Replacing processed grains with whole corn in starter diet did not affect the performance of dairy calves.**
M. A. Khan*[1], J. H. Kim[2], D. M. Veira[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Agriculture and Agri-Food Canada, Agassiz BC, Canada*.

M298 **Performance of dairy calves managed on different milk-feeding programs.**
M. R. Paula[1,2], M. P. C. Gallo[1,3], M. C. Soares[1], G. B. Mourão[1,2], and C. M. M. Bittar*[1,2], [1]*Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil*, [2]*CNPq, Brasília, DF, Brazil*, [3]*Fapesp, São Paulo, SP, Brazil*.

M299 **Effect of increasing intake of linoleic acid in milk replacer on Holstein calf performance.**
M. Garcia*, J. H. Shin, A. Schlaefli, J. E. P. Santos, and C. R. Staples, *University of Florida, Gainesville*.

M300 **Effect of feeding increasing amounts of linoleic acid on health and immunity of unweaned Holstein calves.**
M. Garcia*, J. H. Shin, A. Schlaefli, D. Wang, J. E. P. Santos, and C. R. Staples, *University of Florida, Gainesville*.

M301 **Jersey calf blood metabolites in response to liquid feeds with varied fatty acid profiles.**
V. A. Swank*, W. S. Bowen, K. M. O'Diam, M. L. Eastridge, and K. M. Daniels, *Department of Animal Sciences, The Ohio State University, Columbus*.

M302 **Ponderal development of dairy heifers fed sugarcane and increasing crude protein levels.**
M. F. S. Queiroz*[1], T. T. Berchielli[2], R. D. Signoretti[3], and J. A. S. Morais[4], [1]*Universidade Federal da Paraíba, CCHSA/UFPB, Bananeiras, Paraíba, Brazil*, [2]*Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil*, [3]*Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brasil*, [4]*Universidade Federal de Sergipe (UFS), São Cristovão, Sergipe, Brazil*.

M303 **Pre- and postweaning performance and health of dairy calves when sodium butyrate is fed in milk replacer and/or calf starter during the summer months.**
H. Chester-Jones*[1], S. Moreland[2], D. Ziegler[1], M. Raeth-Knight[3], and J. van Eys[2], [1]*University of Minnesota Southern Research and Outreach Center, Waseca*, [2]*Nutriad Inc., Elgin, IL*, [3]*University of Minnesota, St. Paul*.

M304 **Limiting amino acids for pregnant heifers fed corn silage-based diet.**
D. Wang, J. Q. Wang*, S. C. Li, D. P. Bu, Y. D. Zhang, P. Sun, and L. Y. Zhou, *Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

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M305 **Effect of live yeast on milk yield and related responses in a commercial dairy herd.**
G. E. Higginbotham*[1], A. R. Castillo[2], J. M. Heguy[3], and H. A. Rossow[4], [1]*University of California Cooperative Extension, Madera*, [2]*University of California Cooperative Extension, Merced*, [3]*University of California Cooperative Extension, Modesto*, [4]*University of California School of Veterinary Medicine, Tulare*.

M306 **Effects of corn shredlage on lactation performance by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison, Madison*.

M307 **Could live yeast supplement improve milk composition of mid lactating Holstein cows during heat stress?**
M. Dehghan-Banadaky*[1], R. Motameni[2], and M. Ebrahimi[1], [1]*University of Tehran, Karaj, Tehran, Iran*, [2]*Islamic Azad University, Tehran, Iran*.

M308 **Investigation of live yeast supplement on blood metabolites and nutrient digestibility in mid lactating Holstein cows.**
M. Dehghan-Banadaky*[1], R. Motameni[2], and M. Ebrahimi[1], [1]*University of Tehran, Karaj, Tehran, Iran*, [2]*Islamic Azad University, Tehran, Iran*.

M309 **Influence of *Salix babylonica* extract on daily milk production and composition as well as in vitro gas production in dairy cows.**
A. Z. M. Salem*[1], R. Rojo[2], M. Ronquillo[1], H. Gado[3], N. Pescador[1], and F. Peralta[2], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca, Estado de Mexico, Mexico*, [2]*Centro Universitario UAEM Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México*, [3]*Department of Animal Production, Faculty of Agriculture, Ain Shams University, Cairo, Egypt*.

M310 **A novel approach to measure the bioavailability of rumen protected l-lysine.**
K. B. Cunningham*[1], J. A. Davidson[1], S. E. Boucher[2], and B. L. Miller[1], [1]*LongView Animal Nutrition Center, Land O' Lakes Purina Feed, Gray Summit, MO*, [2]*Kemin AgriFoods North America, Des Moines, IA*.

M311 **Determining the bioavailability of lysine in AjiPro-L using the plasma free amino acid dose response method.**
N. L. Whitehouse*[1], E. S. Fletcher[1], A. F. Brito[1], C. G. Schwab[2], and I. Shinzato[3], [1]*University of New Hampshire, Durham*, [2]*Schwab Consulting LLC, Boscobe*, [3]*Ajinomoto Heartland Inc., Chicago, IL*.

M312 **Microencapsulated sodium selenite supplementation in dairy cows: Effects on selenium status.**
E. Grilli*[1], P. Fantinati[2], M. Morlacchini[3], and A. Piva[1], [1]*DISMVET, Facoltà di Medicina Veterinaria, Ozzano Emilia, Italy*, [2]*Vetagro SpA, Reggio Emilia, Italy*, [3]*Centro Ricerche per la Zootecnia e l' Ambiente, San Bonico, Italy*.

M313 **Effects of dietary amylase and sucrose on productivity of cows fed low-starch diets.**
C. F. Vargas*[1], M. Engstrom[2], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*DSM Nutritional Products, Parsippany, NJ*.

M314 **The effect of essential oil/botanical product on performance and health of calves.**
B. L. Miller, T. J. Earleywine*, and T. E. Johnson, *Land O' Lakes Inc., Webster City, IA*.

M315 **Effects of two sources of rumen-protected fat associated or not with conjugated linoleic acid (CLA) on milk fatty acid profile in dairy ewes.**
E. Ticiani[1], J. De Souza[2], F. Batistel[2], M. Baldin[3], R. Dresch[3], M. A. S. Gama[4], F. C. F. Lopes[4], and D. E. Oliveira*[1,3], [1]*Universidade do Estado de Santa Catarina, CEO, Chapecó, Santa Catarina, Brazil*, [2]*Universidade de São Paulo, ESALQ, Piracicaba, São Paulo, Brazil*, [3]*Universidade do Esatado de Santa Catarina, CAV, Lages, Santa Catarina, Brazil*, [4]*Embrapa Gado de Leite, Juiz de Fora, Minas Gerais, Brazil*.

M316 **Feeding protected lysine to lactating dairy cows improved milk protein yield.**
J. A. Davidson*[1], S. E. Boucher[2], and B. L. Miller[1], [1]*LongView Animal Nutrition Center, Land O' Lakes Purina Feed, Gray Summit, MO*, [2]*Kemin AgriFoods North America, Des Moines, IA*.

M317 **The effect of treating corn stover silage with cellulase and *Lactobacillus* on nutritive value of silage in dairy cows.**
H. Ma, J. Q. Wang*, D. P. Bu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences,, Beijing, China*.

M318 **Degradation of L-arginine and N-carbomyl glutamate and their effect on rumen fermentation in vitro.**
B. Chacher*, D. M. Wang, H. Y. Liu, and J. X. Liu, *Institute of Dairy Science, MoE Key laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*.

M319 **Folic acid and vitamin B12 supplement enhances energy metabolism of dairy cows in early lactation.**
M. Duplessis*[1,2], C. L. Girard[2], D. E. Santschi[3], D. M. Lefebvre[3], and D. Pellerin[1], [1]*Université Laval, Département des sciences animales, Québec, Qc, Canada*, [2]*Agriculture and Agri-Food Canada, Sherbrooke, Qc, Canada*, [3]*Valacta, Ste-Anne-de-Bellevue, Qc, Canada*.

M320 **The potential benefits of supplementing corn-based dairy diets with Zado or yeast for milk yield and production efficiency in dairy cows.**
H. Gado*[1], B. E. Borhami[2], and A. Z. M. Salem[3,2], [1]*Ain Shams University, Cairo, Egypt*, [2]*Alexandria University, Alexandria, Egypt*, [3]*Universidad Autónoma del Estado de México, Estado de México, México*.

M321 **The effect of carnitine on growth and performance of calves fed milk replacer.**
B. L. Miller*, T. J. Earleywine, and T. E. Johnson, *Land O' Lakes Inc., Webster City, IA*.

M322 **Effects of a solid oil supplement (Oralac) on milk fatty acid composition of grazing dairy cows.**
G. A. Gagliostro*[1], L. E. Antonacci[1], J. Ballistreri[2], E. Bonina[2], M. R. Williner[3], and C. A. Bernal[3], [1]*Instituto Nacional de Tecnología Agropecuaria, INTA, Balcarce, Buenos Aires, Argentina*, [2]*Tecnuar SRL, Rosario, Santa Fé, Argentina*, [3]*Universidad Nacional del Litoral, Santa Fé, Santa Fé, Argentina*.

M323 **Combination of bacterial and yeast probiotics: A step forward to unravel their mode of action.**
J. Chiquette*[1], J. Lagrost[2], C. L. Girard[1], S. Li[3], J. C. Plaizier[3], and G. Talbot[1], [1]*Dairy and Swine Research and Development Centre, Sherbrooke, Quebec, Canada*, [2]*Institut Supérieur d'Agriculture Rhône-Alpes, Lyon, Rhône-Alpes, France*, [3]*University of Manitoba, Winnipeg, Manitoba, Canada*.

M324 **Effect of live yeast supplementation on milk yield, milk components, and rumen pH in dairy cows.**
M. B. de Ondarza[1], A. Hall[2], J. Sullivan[2], and E. Chevaux*[2], [1]*Paradox Nutrition LLC, West Chazy, NY*, [2]*Lallemand Animal Nutrition, Milwaukee, WI*.

M325 ***Enterococcus faecium* as a probiotic for lactating ruminants.**
I. K. Hindrichsen*, M. Raun, N. L. Milora, B. Struer-Lauridsen, M. M. Jensen, and E. Upton Augustsson, *Chr. Hansen A/S, Hørsholm, Denmark*.

M326 **Effect of oral calcium bolus supplementation on early lactation health and milk yield in commercial dairy herds.**
G. R. Oetzel*[1] and B. E. Miller[2], [1]*University of Wisconsin-Madison, Madison*, [2]*Boehringer Ingelheim Vetmedica Inc., St. Joseph, MO*.

M327 **Effect of dietary buffers and magnesium oxide on intake, milk yield and composition, and blood metabolites of lactating dairy cows.**
J. K. Bernard*, J. W. West, and N. A. Mullis, *University of Georgia, Tifton*.

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General I

M328 **Milk fatty acids composition responses to dietary short-medium chain fatty acids and long chain fatty acids in lactating dairy cows.**
Y. Sun, D. P. Bu, J. Q. Wang*, H. Cui, X. W. Zhao, X. Y. Xu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M329 **Effect of sorghum grain supplementation levels on ruminal volatile fatty acids: Comparison between cattle and sheep.**
M. Aguerre*[1], C. Cajarville[2], L. Assandri[2], A. Gonzalez[1], and J. L. Repetto[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [2]*Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

M330 **Effects of different ratios of short-medium chain fatty acids to long chain fatty acids on milk composition in dairy cows.**
Y. Sun, D. P. Bu, J. Q. Wang*, H. Cui, X. W. Zhao, X. Y. Xu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M331 **Effects of different fatty acid mixtures on milk fatty acid composition and oxidative stability of milk fat.**
X. W. Zhao, J. Q. Wang*, D. P. Bu, Y. Sun, H. Cui, X. Y. Xu, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M332 **Endogenous contribution and urinary recovery of purine derivatives in Nellore cattle.**
A. M. Barbosa*[1], R. F. D. Valadares[2], S. de C. V. Filho[2], D. do Santos Pina[3], and M. A. Fonseca[2,4], [1]*Universidade Federal da Bahia, Salvador, Bahia, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [3]*Universidade Federal do Mato Grosso, Sinop, Mato Grosso, Brazil*, [4]*Texas A&M University, College Station*.

M333 **Effects of dietary inclusion of tannin and polyethylene glycol supplementation on nitrogen metabolism in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. R. Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agricultural Sciences & Natural Resources, University of Gorgan, Gorgan, Golestan, Iran*.

M334 **Intake and apparent total tract digestibility of dry matter and nutrients in Nellore steers fed with whole raw soybean.**
N. R. B. Cônsolo*[1], A. S. C. Pereira[1], J. R. Gandra[1], F. P. Rennó[1], R. Gardinal[1], J. E. Freitas Junior[2], C. S. Takiya[1], and R. D. Mingoti[1], [1]*Faculdade de Medicina Veterinária e Zootecnia da Universidade de São Paulo (FMVZ-USP), Pirassununga, SP, Brazil*, [2]*Universidade Estadual Paulista (UNESP), Jaboticabal, SP, Brazil*.

M335 **Evaluation of published models for predicting dry matter intake of lactating dairy cows.**
J. Lee* and S. Seo, *Chungnam National University, Daejeon, Republic of Korea*.

M336 **Effects of roughage source and dietary level of inclusion on total tract apparent digestibility in Nellore cattle.**
R. S. Goulart*[1,2], L. G. Nussio[1], R. A. M. Vieira[3], J. L. P. Daniel[1], R. C. Amaral[1], V. P. Santos[1], and A. V. Pires[1], [1]*University of Sao Paulo, ESALQ, Piracicaba, SP, Brazil*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*, [3]*Universidade Estadual do Norte Fluminense, Campos dos Goytacazes, RJ, Brazil*.

M337 **Intake and digestibility of diets with different levels of concentrates in cattle feedlot Nellore.**
C. S. Ribeiro Junior*, Y. T. G. Salcedo, R. C. Canesin, T. T. Berchielli, M. Machado, L. M. Delevatti, E. San Vito, I. P. C. de Carvalho, J. F. Lage, and G. Fiorentini, *São Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil*.

M338 **Voluntary intake, apparent digestibility and blood urea levels in hair sheep fed *Cynodon nlemfuensis* grass mixed with *Leucaena leucocephala* and supplemented with rumen fermentable energy.**
V. A. Arjona-Alcocer, A. Ruiz-Gonzalez, E. Briceño-Poot, A. J. Ayala-Burgos, N. Ruz-Ruiz, and J. C. Ku-Vera*, *FMVZ-Universidad Autonoma de Yucatan, Merida, Yucatan, Mexico*.

M339 **Rumen ammoniacal nitrogen and pH from cattle supplemented with levels of replacement of soybean meal by sunflower cake.**
R. G. F. Silva*, J. T. Zervoudakis, L. S. Cabral, D. P. Sousa, L. K. H. Zervoudakis, M. F. Costa Filho, R. S. Gomes, F. M. Negrão, and J. F. W. Koscheck, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

M340 **Comparison of three different methods in determination of accurate soluble fraction in feeds for CPM Dairy formulation to improve efficiency and milk prediction accuracy.**
P. Yu, B. Liu*, Z. Niu, and D. A. Christensen, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

M341 **Economic analysis of the inclusion of macauba pie of dietary lactating dairy cows.**
C. S. Ribeiro Junior*[2], R. A. de Azevedo[1], A. C. R. dos Santos[1], L. C. Gerassev[1], R. N. Bahiense[1], L. Araújo[1], and A. R. C. Lima[2], [1]*Federal University of Minas Gerais, Montes Claros, Minas Gerais, Brazil*, [2]*São Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil*.

M342 **Survey of nutritional recommendations used by feedlot nutritionists in Brazil in 2011.**
C. A. Oliveira[2], M. D. B. Arrigoni[1], J. T. Vasconcelos[3], R. D. L. Pacheco[1], T. V. B. Carrara[2], L. L. Cursino[2], A. L. N. Rigueiro[2], and D. D. Millen*[2], [1]*São Paulo State University (UNESP), Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP), Dracena, São Paulo, Brazil*, [3]*Elanco Animal Health, Greenfield, IN*.

M343 **Effects of different ratios of short-medium chain fatty acids to long chain fatty acids on plasma fatty acids profiles in lactating dairy cows.**
Y. Sun, D. P. Bu, J. Q. Wang*, X. W. Zhao, H. Cui, X. Y. Xu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M344 **Effects of total solids in drinking water and milk yield per cow on milk mineral concentrations from California dairy farms.**
A. R. Castillo*[1], N. S. del Rio[2], N. R. St-Pierre[3], and W. P. Weiss[3], [1]*University of California, Cooperative Extension, Merced*, [2]*University of California, Cooperative Extension, Tulare*, [3]*The Ohio State University, Department of Animal Science, Columbus*.

M345 **Effects of supplementing different sources of fatty acids on lipid metabolism and endocrine responses in mid-lactation dairy cows.**
X. Y. Xu, J. Q. Wang*, D. P. Bu, H. Cui, X. W. Zhao, Y. Sun, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M346 **Effect of replacing legume/grass silage with corn silage in dairy cow diets on enteric methane production.**
F. Hassanat*[1], R. Gervais[2], P. Y. Chouinard[2], C. Julien[3], F. Tremblay[1], D. I. Massé[1], and C. Benchaar[1], [1]*Dairy and Swine Research and Development Centre-Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Département des Sciences Animales, Université Laval, Québec, QC, Canada*, [3]*INRA-Université de Toulouse, Castanet-Tolosan, France*.

M347 **Effects of supplementing different ratios of short-medium chain fatty acids to long-chain fatty acids on the immune function in mid-lactating dairy cows.**
X. Y. Xu, J. Q. Wang*, D. P. Bu, H. Cui, X. W. Zhao, Y. Sun, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

M348 **Effects of supplemental extruded full-fat soybean (ESB) on ruminal fermentation, nutrient digestion, blood parameters and productive performance of early lactation dairy cows.**
H. Su*[1], F. Wang[1], Y. Zou[1], Z. Cao[1,2], M. Ma[1,2], and S. Li[1,2], [1]*State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*Sino-US Dairy Research and Development Center, Beijing, China*.

M349 **Intake and digestibility by lactating cows fed different levels of palm kernel cake.**
R. L. Oliveira*[1], R. L. N. V. Silva[2], A. C. Ferreira[1], A. G. Leão[1], M. C. A. Santana[1], A. A. Pinheiro[1], G. G. P. Carvalho[1], and L. F. B. Pinto[1], [1]*Universidade Federal da Bahia, Salvador, BA, Brazil*, [2]*Instituto Federal Baiano, Catu, BA, Brazil*.

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M350 **Comparison of three marker systems and three sites of digesta sampling to estimate the rumen outflow in bulls fed with corn silage or sugar cane.**
P. P. Rotta*, S. de C. V. Filho, L. F. C. Silva, F. A. C. Villadiego, and E. M. Galindo, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

M351 **Comparison of in situ nylon bag protocols for analysing ruminal degradation of dry matter and crude protein in forages.**
H. van Laar*[1], J. Doorenbos[1], J. D. Steckley[2], and J. A. Metcalf[2], [1]*Nutreco R&D, Boxmeer, the Netherlands*, [2]*Nutreco Canada Agresearch, Guelph, ON, Canada*.

M352 **Methane emissions and diet digestibility for sheep offered diets varying in fat content and forage quality.**
E. J. Mc Geough*, Y.-H. Chung, K. A. Beauchemin, S. M. McGinn, and T. A. McAllister, *Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada*.

M353 **Leucaena diets with or without polyethylene glycol affecting rumen fermentation and methane emission in sheep.**
Y. Soltan*[1,2], A. Morsy[1,3], R. Lucas[1], S. Sallam[2], H. Louvandini[1], and A. Abdalla[1], [1]*Centre for Nuclear Energy in Agriculture, University of Sao Paulo, Piracicaba,Sao Paulo, Brazil*, [2]*University of Alexandria, Alexandria, Egypt*, [3]*Animal Production Research Institute, Cairo, Egypt*.

M354 **Biometrics digestive tube of kids suckled up to 60 days fed different goat milk replacers.**
L. S. Knupp, M. I. Marcondes*, C. S. Cunha, T. S. Oliveira, J. G. L. Regadas Filho, J. C. M. Lima, L. C. Lacerda, and C. M. Veloso, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

M355 **Comparative influence of solvent extracted-peanut meal and soybean meal on apparent digestibility of diets for finishing lambs.**
L. R. Flores*[1], A. Camacho[1], N. E. Villalba[2], J. J. Lomelí[1], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Agricola Ganadera Mojolo, Culiacán, Sinaloa, México*.

M356 **Development of a new marker for utilization in digestibility studies.**
C. C. C. Couto Filho[1], E. O. S. Saliba*[1], M. N. Pereira[2], N. M. Rodriguez[1], and N. N. Morais Júnior[3], [1]*Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil*, [2]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [3]*Instituto Federal de Educação Ciência e Tecnologia do Espírito Santo, Colatina, ES, Brazil*.

M357 **Effects of vitamin B_{12} on in vitro rumen fermentation and microbial enzyme activity.**
Y. X. Li, J. K. Wang, Y. M. Wu, and J. X. Liu*, *Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*.

M358 **Urinary recovery of purine derivatives and microbial production in Nellore cattle.**
A. M. Barbosa*[1], R. F. D. Valadares[2], S. de C. V. Filho[2], D. do S. Pina[3], and M. A. Fonseca[2,4], [1]*Universidade Federal da Bahia, Salvador, Bahia, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [3]*Universidade Federal do Mato Grosso, Sinop, Mato Grosso, Brazil*, [4]*Texas A&M University, College Station*.

M359 **Methane emission potential, chemical composition and degradability of banana crop wastes for ruminants.**
L. N. Oliveira*[1], S. L. S. Cabral Filho[1], and L. C. Geraseev[2], [1]*University of Brasília, Brasília, Federal District, Brazil*, [2]*Federal University of Minas Gerais, Montes Claros, Minas Gerais, Brazil*.

M360 **Corn grain or citrus pulp associated with glycerin in Nellore feedlot steers: intake and ruminal fermentation.**
V. R. Fávaro*, J. M. B. Ezequiel, J. R. Paschoaloto, M. T. C. Almeida, A. P. D'Áurea, A. C. Homem Junior, and V. C. Santos, *São Paulo State University, Jaboticabal, São Paulo, Brazil*.

M361 **Assessment of the in vitro fermentation pattern of native forage from the Brazilian semiarid region.**
D. K. A. Silva*[1,2], L. O. Tedeschi[2], M. A. Fonseca[3,2], N. F. De Paula[3,2], K. P. Pereira[1], G. R. Medeiros[4], J. C. B. Dubeux Junior[1], and D. P. V. Silva[1], [1]*Federal Rural University of Pernambuco, Academic Unit of Garanhuns, Garanhuns, Pernambuco*, [2]*Texas A&M University, Department of Animal Science, College Station*, [3]*Federal University of Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil*, [4]*National Institute of Semiarid, Campina Grande, Paraíba*.

M362 **An in vitro evaluation of rumen fluid type on hydrogen sulfide production of common beef cattle feedstuffs.**
K. L. Neuhold*[1], J. J. Wagner[2], K. S. Sellins[1], and T. E. Engle[1], [1]*Colorado State University, Fort Collins*, [2]*Southeast Colorado Research Center, CSU, Lamar, CO*.

M363 **In vitro methane production and dry matter degradability of citral.**
T. S. Canaes*, I. C. S. Bueno, F. G. Vilela, A. P. C. Araújo, M. C. B. Santos, B. C. Venturelli, S. N. Macedo, J. E. Freitas Junior, and F. P. Rennó, *Sao Paulo University, Sao Paulo, Sao Paulo, Brazil*.

M364 **Estimated microbial production, efficiency and nitrogen balance in sheep fed high concentrate varying amounts of glycerin from soybean biodiesel.**
R. L. Galati*, R. S. Gomes, P. G. Paiva, L. S. Cabral, J. T. Zervoudakis, J. G. Abreu, L. R. Rebelo, and M. Zanchetin, *Universidade Federal do Mato Grosso, FAMEV/UFMT, Cuiabá, Brazil*.

M365 **Microbial kinetics, fermentative and chemical characteristics in solid-state fermentation of apple bagasse.**
O. Ruiz[1], Y. Castillo[2,1], C. Angulo[1], C. Rodriguez[1], O. Enriquez*[1], and C. Arzola[1], [1]*Facultad de Zootecnia y Ecología de la Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*, [2]*División multidiciplinaria de Nuevo Casas Grandes de la Universidad Autónoma de Ciudad Juarez Chihuahua, Nuevo Casas Grandes, Chihuahua, México*.

M366 **Evaluation external and internal markers for digestibility studies.**
T. T. Berchielli[1], R. C. Canesin[1], D. A. Mota[2], I. M. Cezinbra[3], and G. Fiorentini*[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*Federal University of Amazonas, Parintins, Amazonas, Brazil*, [3]*Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*.

M367 **Addition of fumarate reducing bacteria on in vitro fermentation.**
L. Mamuad, S. Kim, C. Jeong, and S. Lee*, *Sunchon National University, Suncheon, Republic of Korea*.

M368 **Rumen wall morphology of lambs fed high concentrate diets.**
L. S. Oliveira*[1], P. R. Leme[1], M. R. Mazon[1], D. M. C. Pesce[2], S. da Luz e Silva[1], C. A. Zotti[1], R. F. Carvalho[2], and A. P. dos Santos Silva[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, São Paulo, Brasil*, [2]*Pontifícia Univerdidade Católica, Poços de Caldas, Minas Gerais, Brasil*.

M369 **Growth rate of mixed ruminal bacteria as a function of energetic substrate concentration in bath culture.**
T. S. de Oliveira*, R. de Paula Lana, V. S. de Oliveira, T. M. de Oliveira Alves, and G. L. R. Filho, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brasil*.

M370 **Nutrient digestibility of pregnant WAD ewe fed Mexican sunflower leaf meal (MSLM) based diets.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

M371 **Rumen bacteria growth and pH of culture medium on different substrate concentrations.**
C. P. Ghedini[1], R. P. Lana[1], A. S. Oliveira[2], D. C. Abreu*[1], R. M. Paula[1], G. A. Freitas[1], and M. G. Camilo[3], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*, [3]*Instituto Federal do Sudeste de Minas Gerais, Rio Pomba, MG, Brazil*.

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M372 **Effect of breed and sex on fatty acid composition of fat-tailed and tailed lambs.**
A. Yousefi*, H. Kohram, A. Z. Shahneh, M. Sadeghi, and M. Poorhamdollah, *University of Tehran, Karaj, Tehran, Iran*.

M373 **The energetic efficiency of growing lambs fed high-concentrate diets with different roughages.**
D. B. Galvani[1], A. V. Pires*[2], I. Susin[2], V. N. Gouvea[2], A. Berndt[3], L. J. Chagas[2], J. R. R. Dórea[2], A. L. Abdalla[4], and L. O. Tedeschi[5], [1]*EMBRAPA Goats and Sheep, Sobral, CE, Brazil*, [2]*University of São Paulo, "Luiz de Queiroz" College of Agriculture, Piracicaba, SP, Brazil*, [3]*EMBRAPA Southeast Livestock, São Carlos, SP, Brazil*, [4]*University of São Paulo, Center for Nuclear Energy in Agriculture, Piracicaba, SP, Brazil*, [5]*Texas A&M University, Department of Animal Science, College Station*.

M374 **Intake and feeding behavior of Morada Nova lambs fed different energy levels.**
D. A. Camilo[1], E. S. Pereira*[1], P. G. Pimentel[1], M. S. S. Carneiro[1], I. Y. Mizubuti[2], M. R. G. F. Costa[1], G. M. B. Moreno[1], and J. N. Rocha Junior[1], [1]*Federal University of Ceara, Fortaleza, Ceara, Brazil*, [2]*State University of Londrina, Londrina, Parana, Brazil*.

M375 **Different supplement treatments for lactating meat goat does grazing grass/forb pastures.**
A. L. Goetsch*, G. D. Detweiler, Z. Wang, J. Hayes, K. Tesfai, and T. A. Gipson, *Langston University, Langston, OK*.

M376 **Effects of level and length of supplementation on BW and harvest characteristics of yearling Boer and Spanish wethers.**
R. C. Merkel, T. A. Gipson*, Z. Wang, and A. L. Goetsch, *Langston University, Langston, OK*.

M377 **Energy requirements for growth of male and female Saanen goat kids.**
M. H. M. R. Fernandes*, O. Boaventura Neto, A. N. Mendonca, S. F. Souza, D. Oliveira, T. F. V. Bompadre, T. R. Delphino, K. T. Resende, and I. A. M. A. Teixeira, *UNESP/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

M378 **Influence of reducing starch and increasing digestible fiber on glucose tolerance test of lactating ewes.**
R. S. Gentil*[1], I. Susin[1], A. V. Pires[1], E. M. Ferreira[1], A. Cannas[2], D. Eysink[1], M. V. Biehl[1], and C. P. Nolli[1], [1]*Universidade de São Paulo/ESALQ, Piracicaba, São Paulo, Brazil*, [2]*Università degli Studi di Sassari, Sassari, Sardegna, Italy*.

M379 **Soybean meal supplementation of lambs grazing native pastures in the summer-fall season.**
L. Piaggio[1], M. L. delPino[1], H. Deschenaux[1], and M. de J. Marichal*[2], [1]*Secretariado Uruguayo de la Lana, Montevideo, Uruguay*, [2]*Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay*.

M380 **Nutritional quality, intake, and apparent digestibility of mulberry (*Morus alba*) and star grass (*Cynodon nlemfuensis*) in goats.**
J. A. Elizondo-Salazar* and J. Rodríguez-Zamora, *Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, Costa Rica*.

M381 **Effect of dietary supplementation of ferrous sulfate on performance and carcass characteristics of meat sheep.**
G. Abdelrahim*[1], J. Khatiwada[2], and A. Gueyec[3], [1]*Alabama A&M University, Huntsville*, [2]*North Carolina A&T State University, Greensboro*, [3]*Mount Ida College, Newton, MA*.

M382 **Effects of diets with different qualities of roughage on fatty acids metabolism in mammary glands of lactating dairy goats.**
L. W. Song[1], C. J. Ao*[1], K. Khas-Erdene[1], H. Zhang[1], Y. X. Wu[2], and S. W. Liu[1], [1]*Department of Animal Science, Inner Mongolia Agricultural University, Huhhot, Inner Mongolia, China*, [2]*Key Laboratory of Grass and Herbivores of Chongqing, College of Animal Science and Technology, Southwest University, ChongQing, China*.

M383 **Effects of diets with different forage profiles on the gene expression of enzymes related to fatty acid synthesis in the mammary gland of lactating dairy goats.**
H. Zhang, C. J. Ao*, K. Khas-Erdene, L. W. Song, and X. F. Zhang, *Department of Animal Science, Inner Mongolia Agricultural University, Huhhot, Inner Mongolia, China*.

M384 **Performance of Ile de France lambs fed with diets containing different percentages of mulberry hay.**
L. G. A. Cirne*, A. G. Silva Sobrinho, T. Santana, R. Takahashi, N. M. B. L. Zeola, F. A. Almeida, G. M. Manzi, and F. U. Silva, *São Paulo State University, Jaboticabal, São Paulo, Brazil*.

M385 **Effect of metabolizable protein supplementation to ewes during late gestation on wether offspring feedlot performance, carcass characteristics, and nitrogen balance.**
M. L. Van Emon*[1,2], K. A. Vonnahme[2], P. T. Berg[2], K. R. Maddock Carlin[2], and C. S. Schauer[1], [1]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*.

M386 **Effects of sources of oil on intake, performance and carcass characteristics of feedlot sheep.**
F. B. O. Scarpino*[1,2], J. M. B. Ezequiel[1], E. H. C. B. van Cleef[1,3], A. P. D'Aurea[1,3], M. T. C. Almeida[1], and H. L. Perez[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*CNPq*, [3]*FAPESP*.

M387 **Lipid sources in diets for feedlot sheep: Blood parameters.**
F. B. O. Scarpino*[1,2], J. M. B. Ezequiel[1], D. A. V. Silva[1,3], and E. H. C. B. van Cleef[1,3], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*CNPq*, [3]*FAPESP*.

M388 **Relationship between phosphorus fluids concentration and phosphorus flows in growing ruminants.**
R. M. Patiño*[1], T. Soares da Silva[3], J. C. da Silva Filho[2], D. M. S. S. Vitti[3], J. A. Moreira[4], and E. H. van Cleef[5], [1]*University of Sucre, Sincelejo, Colombia*, [2]*Federal University of Lavras, Lavras, MG, Brazil*, [3]*Nuclear Energy Center for Agriculture, Piracicaba, SP, Brazil*, [4]*Federal University of Rio Grande do Norte, Natal, RN, Brazil*, [5]*State University of São Paulo, Jaboticabal, SP, Brazil*.

M389 **Mineral requirements for gain in Saanen goats of different sexes.**
A. N. Mendonca*, C. J. Härter, A. M. A. Teixeira, O. Boaventura Neto, S. F. Souza, and D. Oliveira, *UNESP/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

M390 **Effect of chromium supplementation on ruminal parameters of Mahabadi goat kids.**
A. Emami, A. Zali, M. Ganjkhanlou*, A. Hojabri, and A. Akbari, *University of Tehran, Tehran, Iran*.

M391 **Effect of feeding tannin-containing pine bark on performance, parasite load and blood metabolites in goats.**
E. A. Wilson*[1], S. Solaiman[1], B. R. Min[1], N. Gurung[1], W. McElhenny[1], and J. Miller[2], [1]*Tuskegee University, Tuskegee Institute, AL*, [2]*Louisiana State University, Baton Rouge*.

M392 **Lamb performance feeding diets with different crude protein level.**
P. Meda Alducin, J. Maldonado Jaquez, I. Tovar Luna*, and J. Jaimes Jaimes, *Universidad Autonoma Chapingo, URUZA, Bermejillo, Mexico*.

M393 **Effect of copper and zinc on nutrient digestibility and growth performance in goats.**
R. R. Rojo*, A. Z. M. Salem, J. F. Vázquez, and B. Albarrán, *Centro Universitario UAEM Temascaltepec, Temascaltepec, Estado de México, México*.

M394 **Growth and carcass characteristics of lambs fed high-concentrate diets containing increasing levels of crude glycerin.**
D. M. Polizel*, R. S. Gentil, E. M. Ferreira, M. O. Maia, C. P. Nolli, D. Eysink, A. V. Pires, and I. Susin, *Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, São Paulo, Brazil*.

M395 **Ruminal fermentation, kinetics and digestibility of hair lambs supplemented with cull pinto bean.**
F. Castillo, G. Villalobos*, D. Domínguez, J. A. Ortega, and L. Cortés, *Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

M396 **Effect of clinoptilolite (zeolite) substituting for soybean meal on apparent digestibility and energy concentration of feed in growing Pelibuey sheep.**
A. Estrada-Angulo*, S. A. Serrano-Cebreros, V. Martinez-Cruz, J. Cazarez-Rocha, A. Rubio-Angulo, B. I. Castro-Perez, H. Davila-Ramos, J. C. Robles, and F. G. Ríos, *FMVZ-UAS, Culiacan, Sinaloa, Mexico*.

M397 **Influence of level of protein and energy on growth performance and tissue composition of feedlot hair lambs.**
F. G. Rios[1], H. Davila-Ramos*[1], A. Estrada-Angulo[1], A. Plascencia[2], J. J. Portillo[1], and J. C. Robles[1], [1]*FMVZ-UAS, Culiacan, Sinaloa, Mexico*, [2]*IICV-UABC, Mexicali, BC, Mexico*.

Swine Species I
Sponsor: Kemin Industries

M398 **Neutral semi-purified glycerin in starting pigs feeding in Brazil.**
I. Moreira*[1], A. G. Gallego[1,2], P. C. Pozza[1], P. L. O. Carvalho[1], L. M. Peñuela-Sierra[1,3], and L. M. Huepa[1,2], [1]*Universidade Estadual de Maringá, Maringá, Paraná, Brazil*, [2]*Universidad del Tolima, Ibagué, Tolima, Colombia*, [3]*Universidad Cooperativa de Colombia, Ibagué, Tolima, Colombia*.

M399 **Brazilian neutral semi-purified glycerin on growing and finishing pigs feeding.**
I. Moreira*[1], A. G. Gallego[1,2], P. L. O. Carvalho[1], C. C. Filho[1], T. J. Pasquetti[1], and D. Perondi[1], [1]*Universidade Estadual de Maringá, Maringá, Paraná, Brazil*, [2]*Universidad del Tolima, Ibagué, Tolima, Colombia*.

M400 **Performance and carcass traits of finishing pigs fed on crude glycerin in Brazil.**
I. Moreira*[1], P. L. O. Carvalho[1], L. M. Piano[1], J. B. Toledo[1], A. G. Gallego[1,2], and L. M. Peñuela-Sierra[1,3], [1]*Universidade Estadual de Maringá, Maringá, Paraná, Brazil*, [2]*Universidad del Tolima, Ibagué, Tolima, Colombia*, [3]*Universidad Cooperativa de Colombia, Ibagué, Tolima, Colombia*.

M401 **Determination of optimal dose and time of administration of intravaginal triptorelin gel for synchronizing ovulation in weaned sows.**
R. Knox[1], S. Breen[1], J. Taibl[1], M. Swanson[2], and S. Webel*[3], [1]*University of Illinois, Urbana*, [2]*Pennatek LLC, Radnor, PA*, [3]*JBS United Inc., Sheridan, IN*.

M402 **The effects of arginine supplementation of weanling pig diets on growth performance and IGF expression.**
W. C. Wang*[1,3], R. J. Chen[1,2], J. Pan[4], T. J. Li[1], and Y. L. Yin[1], [1]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Rice Research Institute of Sichuan Agricultural University, Chengdu, Sichuan, China*, [3]*Guelph Food Research Center, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [4]*Department of Animal Science, Hunan Agricultural University, Changsha, Hunan, China*.

M403 **Assessment of zero-tannin faba bean and co-fermented corn and wheat DDGS in diets of growing-finishing pigs.**
C. Furedi*[1], P. Lopez[1], M. Licayu[1], D. Gurney[1], E. Kiarie[2], and C. M. Nyachoti[2], [1]*The Puratone Corporation, Niverville, MB, Canada*, [2]*University of Manitoba, Winnipeg, MB, Canada*.

SYMPOSIA AND ORAL SESSIONS

Graduate Student Competition:
ASAS Western Section Graduate Student Paper Competition
Chair: Holly L. Neibergs, Washington State University
Sponsor: ASAS Western Section
227AB

8:20 AM **Introduction**
H. L. Neibergs and J. B. Taylor.

8:30 AM 17 **Effect of supplementing activated charcoal on intake of honey mesquite leaves by lambs.**
P. Mayagoitia*[1], D. Bailey[1], and R. Estell[2], [1]*New Mexico State University, Las Cruces*, [2]*USDA-ARS Jornada Experimental Range, Las Cruces, NM*.

8:45 AM 18 **Pre-breeding β-hydroxybutyrate concentration influences conception date in young postpartum range beef cows.**
J. T. Mulliniks*[1], M. E. Kemp[1], R. L. Endecott[2], S. H. Cox[1], E. J. Scholljegerdes[1], T. W. Geary[3], and M. K. Petersen[3], [1]*New Mexico State University, Las Cruces*, [2]*Montana State University, Miles City*, [3]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*.

9:00 AM 19 **Effects of algal meal supplementation to finishing wethers on performance and carcass characteristics.**
M. G. Dib*, T. E. Engle, H. Han, N. Roman-Muniz, and S. L. Archibeque, *Colorado State University, Fort Collins*.

9:15 AM 20 **Influence of the level of dried distillers grains with solubles on feedlot performance, carcass characteristics, serum testosterone concentrations, and semen quality of growing rams.**
M. L. Van Emon*[1,2], K. A. Vonnahme[2], P. T. Berg[2], R. R. Redden[2], M. M. Thompson[1], J. D. Kirsch[2], and C. S. Schauer[1], [1]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*.

9:30 AM 21 **Effect of weaning method on welfare and performance of beef calves during receiving.**
E. A. Bailey*[1], J. R. Jaeger[2], J. W. Waggoner[2], L. W. Murray[3], G. W. Preedy[1], L. A. Pacheco[1], D. L. Davis[1], and K. C. Olson[1], [1]*Department of Animal Sciences & Industry, Kansas State University, Manhattan*, [2]*Western Kansas Agricultural Research Center, Kansas State University, Hays*, [3]*Department of Statistics, Kansas State University, Manhattan*.

9:45 AM 22 **Effects of timing of vaccination (day 0 versus day 14 of a receiving period) with a modified-live respiratory viral vaccine on performance, feed intake and febrile response of beef heifers.**
K. P. Sharon*[1], G. C. Duff[1], M. M. Harbac[1], J. A. Paterson[1], J. A. Carroll[2], and J. W. Dailey[2], [1]*Department of Animal and Range Sciences, Montana State University, Bozeman*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*.

10:00 AM 23 **Assessment of chestnut tannin extract supplementation on animal performance and ruminal fermentation profiles in feedlot finishing diets.**
J. M. Sieg*[1], J.-S. Eun[1], D. R. ZoBell[1], and B. R. Min[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL*.

10:15 AM **Break**

10:30 AM 24 **Evaluation of the incidence, causes, and potential solutions for the occurrence of disabled or non-ambulatory cattle within the California beef and dairy industries.**
M. V. Sis*[1], J. K. Ahola[1], H. A. Foster[2], D. L. VanOverbeke[3], and D. A. Daley[4], [1]*Colorado State University, Fort Collins*, [2]*California Beef Council, Sacramento*, [3]*Oklahoma State University, Stillwater*, [4]*California State University-Chico, Chico*.

10:45 AM 25 **Effect of two, four, and six-hour intervals between two prostaglandin $F_{2\alpha}$ injections administered with five-day CO-Synch + CIDR protocol on pregnancy rate in beef cows.**
C. J. Berrett*[1], J. L. Seabrook[1], G. E. Seidel[1], J. C. Whittier[1], J. K. Ahola[1], R. K. Peel[1], and A. V. Grove[2], [1]*Colorado State University, Fort Collins*, [2]*AG Research LLC, White Sulphur Springs, MT*.

11:00 AM 26 **Effects of pain mitigation and method of castration on behavior and feedlot performance in cull beef bulls.**
P. E. Repenning*[1], J. K. Ahola[1], R. J. Callan[2], J. T. French[1], R. L. Giles[1], R. K. Peel[1], J. C. Whittier[1], J. T. Fox[3], and T. E. Engle[1], [1]*Department of Animal Sciences, Colorado State University, Fort Collins*, [2]*Department of Clinical Sciences, Colorado State University, Fort Collins*, [3]*JBS Five Rivers Cattle Feeding LLC, Greeley, CO*.

11:15 AM 27 **Fetal and maternal induction of angiogenic factors during early pregnancy.**
K. E. Quinn*[1], J. D. Lindsey[1], S. M. Stanbrough[1], A. K. Ashley[2], and R. L. Ashley[1], [1]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*, [2]*Center for Animal Health, Food Safety, and Bio-Security, New Mexico State University, Las Cruces*.

11:30 AM 28 **Effect of swath grazing on forage intake and wastage by ewes.**
E. E. Nix*, D. L. Ragen, J. G. P. Bowman, R. W. Kott, and P. G. Hatfield, *Montana State University, Bozeman*.

11:45 AM	29	**Maternal diet restriction in beef cows alters fetal cardiovascular hemodynamics and fetal and placental development during early pregnancy.** L. E. Camacho*, C. O. Lemley, K. C. Swanson, and K. A. Vonnahme, *Department of Animal Sciences, North Dakota State University, Fargo*.
12:00 PM		**Lunch**
1:00 PM	30	**Serum exosome profile as related to early pregnancy status in the mare.** J. R. Hergenreder*, J. C. da Silveira, A. D. Belk, D. N. R. Veeramachaneni, J. G. Bouma, and J. E. Bruemmer, *Colorado State University, Fort Collins*.
1:15 PM	31	**Effects of natural service and artificial insemination breeding systems on pregnancy rates and days to conception.** P. L. Steichen*[1], S. I. Klein[1], Q. P. Larson[1], K. M. Bischoff[2], V. G. R. Mercadante[2], G. C. Lamb[2], C. S. Schauer[3], B. W. Neville[4], and C. R. Dahlen[1], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*North Florida Research and Education Center, University of Florida, Marianna*, [3]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [4]*Central Grasslands Research Extension Center, Streeter, ND*.
1:30 PM	32	**Evaluation of the ability of grain distillers dried yeast to replace fish meal in the diets of juvenile rainbow trout *Oncorhynchus mykiss*.** B. S. Hauptman*[1], F. T. Barrows[3], S. Block[4], T. G. Gaylord[2], W. M. Sealey[2], and J. A. Paterson[1], [1]*Montana State University, Bozeman*, [2]*USFWS, Bozeman Fish Technology Center, Bozeman, MT*, [3]*USDA, Agriculture Research Service, Bozeman, MT*, [4]*Archer Daniels Midland Company, Decatur, IL*.
1:45 PM	33	**Differences in allele frequency distribution of bovine high-density genotyping platforms in Holsteins and Jerseys.** K. L. Weber*[1], G. Rincon[1], A. L. Van Eenennaam[1], B. L. Golden[2], and J. F. Medrano[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Dairy Science Department, California Polytechnic State University, San Luis Obispo*.
2:00 PM	34	**Comparing the lifetime productivity of beef females initially conceiving to, or sired by, artificial insemination or natural service.** B. J. Bigler*, J. T. French, J. K. Ahola, J. C. Whittier, W. M. Frasier, G. E. Seidel, R. M. Enns, and R. K. Peel, *Colorado State University, Fort Collins*.
2:15 PM	35	**Identification of single nucleotide polymorphisms associated with feed efficiency in rams.** R. R. Cockrum*[1], N. K. Pickering[2], R. M. Anderson[2], D. L. Hyndman[2], M. J. Bixley[2], K. G. Dodds[2], R. H. Stobart[1], J. C. McEwan[2], and K. M. Cammack[1], [1]*University of Wyoming, Laramie*, [2]*AgResearch Limited, Mosgiel, New Zealand*.
2:30 PM	36	**Out-of-season reproductive performance of ewes synchronized to estrus with various 5-d protocols.** C. G. Jackson*[1], T. L. Neville[1], V. R. G. Mercadante[2], K. M. Bischoff[2], G. C. Lamb[2], C. R. Dahlen[1], and R. R. Redden[1], [1]*North Dakota State University, Fargo*, [2]*North Florida Research and Education Center, University of Florida, Marianna*.
2:45 PM	37	**Effects of maternal fluoxetine dosage on lamb serum hormone concentrations and reproductive traits.** P. L. Black*, D. M. Hallford, and T. T. Ross, *New Mexico State University, Las Cruces*.
3:00 PM		**Break**
3:15 PM	38	**Digestibility of algal biofuel co-product in a forage diet.** M. K. Beckman*, L. N. Tracey, N. Miller, K. Norman, K. Marchetti, E. J. Scholljegerdes, S. A. Soto-Navarro, C. L. Löest, and S. L. Lodge-Ivey, *New Mexico State University, Las Cruces*.
3:30 PM	39	**Effects of preovulatory estradiol concentration on embryo survival and pregnancy establishment in beef cows.** C. A. Roberts*[1,3], G. A. Perry[3], M. D. MacNeil[1], M. A. Minten[2], and T. W. Geary[1], [1]*USDA-ARS Fort Keogh, Miles City, MT*, [2]*Washington State University, Pullman*, [3]*South Dakota State University, Brookings*.
3:45 PM	40	**Individual Mineral Supplement Intake By Ewes Swath Grazing Or Confinement Fed Pea-Barley Forage.** D. L. Ragen*[1], E. E. Nix[1], P. G. Hatfield[1], R. L. Endecott[2], and J. G. P. Bowman[1], [1]*Montana State University, Bozeman*, [2]*Montana State University, Miles City*.
4:00 PM	41	**Effects of weaning age and winter development environment on heifer grazing distribution.** N. L. Hojer*[1], M. B. Hubert[2], P. S. Johnson[2], M. H. Price[3], and K. C. Olson[2], [1]*South Dakota State University, Brookings*, [2]*South Dakota State University, Rapid City*, [3]*South Dakota School of Mines & Technology, Rapid City*.
4:15 PM	42	**Effects of distillers dried grains with solubles supplementation on grazing and subsequent feedlot performance of heifers grazing northern Great Plains rangelands.** Q. P. Larson*[1], R. J. Maddock[1], P. L. Steichen[1], K. K. Karges[2], and B. W. Neville[3], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Dakota Gold Research Association, Sioux Falls, SD*, [3]*Central Grassland Research Extension Center, Streeter, ND*.
4:30 PM	43	**Effects of post-AI nutrition on reproductive and growth performance of yearling beef heifers.** R. P. Arias*[1], P. J. Gunn[2], R. P. Lemenager[2], G. A. Bridges[3], and S. L. Lake[1], [1]*University of Wyoming, Laramie*, [2]*Purdue University, West Lafayette, IN*, [3]*University of Minnesota, St. Paul*.

4:45 PM 44 **Dietary intake in a group of old mares.**
S. Otabachian* and T. Hess, *Colorado State University, Fort Collins*.

Animal Health I
Chair: Pedram Rezamand, University of Idaho
Sponsors: Elanco Animal Health and Pfizer Animal Health
228AB

9:30 AM 45 **Histological examination of the organs of the rats administered varying levels of *Vernonia amygdalina* leaves.**
A. H. Ekeocha*, P. C. Ekeocha, and T. Fasola, *University of Ibadan, Ibadan, Oyo, Nigeria*.

9:45 AM 46 **Toxicological properties of liquid dishwashing detergent in Swiss albino mice.**
M. S. Gulay*, O. Yildiz Gulay, A. Ata, A. Demirtas, and S. Gungor, *Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkiye*.

10:00 AM 47 **Isolation of lactobacillus strains with high adhesive ability to the intestinal epithelial cells.**
W. M. Zhang*[1], H. F. Wang[1,2], and J. X. Liu[1], [1]*Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*, [2]*Department of Animal Science, College of Forestry and Biotechnology, Zhejiang A & F University, Hangzhou, China*.

10:15 AM 48 **Effect of mycotoxins on the intestine: Analysis of the interaction between fusariotoxins.**
B. Grenier*[1,3], A. P. Loureiro-Bracarense[2], G. D. Pacheco[1,2], J. Lucioli[2], A. M. Cossalter[1], W. D. Moll[3], G. Schatzmayr[3], and I. P. Oswald[1], [1]*Institut National de la Recherche Agronomique-ToxAlim, Immuno-Mycotoxicology, Toulouse, France*, [2]*Universidade Estadual de Londrina, Lab Patologia Animal, Londrina, Brazil*, [3]*Biomin Research Center, Tulln, Austria*.

10:30 AM 49 **Dietary supplementation of young broiler chickens with capsicum and turmeric oleoresin increases resistance to necrotic enteritis.**
S.-H. Lee*[1], H. Lillehoj[1], S.-I. Jang[1], D.-K. Kim[1], M.-S. Park[1], E. Lillehoj[2], and D. Bravo[3], [1]*Animal and Natural Resources Institute, ARS-USDA, Beltsville, MD*, [2]*University of Maryland, School of Medicine, Baltimore*, [3]*Pancosma S. A., Geneva, Switzerland*.

10:45 AM 50 **The identification of candidate genes for BSE and the application to chronic wasting disease in mule deer.**
J. Thomson*[1], V. Bowles[1], U. Basu[1], Y. Meng[1], P. Stothard[1], and S. Moore[2], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*University of Queensland, Brisbane, Qld, Australia*.

11:00 AM 51 **Phosphorus utilization in broilers fed soybean and benniseed-based diets with and without microbial phytase supplementation.**
O. Adebiyi, A. Ologhobo, A. Omojola, O. Olusola, W. Muhammed, and M. Olumide*, *University of Ibadan, Ibadan, Nigeria*.

11:15 AM 52 **Effects of tropical legume supplementation on parasite burden and health parameters in goats.**
M. A. Zarate*[1], J. C. Hamie[1], J. J. Romero[1], E. N. Muniz[2], Y. J. Jang[3], K. G. Arriola[1], O. C. Queiroz[1], and A. T. Adesogan[1], [1]*University of Florida, Gainesville*, [2]*Empresa Brasileira de Pesquisa Agropecuária, EMBRAPA, Aracajú, Sergipe, Brazil*, [3]*Gyeongsang National University, Jinju, South Korea*.

11:30 AM 53 **Carboxymethylation and antioxidant activity of exopolysaccharides.**
M. Huang*, T. F. Zhu, Z. Q. Lu, G. X. Wu, and Y. Z. Wang, *National Engineering Laboratory of Bio-Feed Safety and Pollution Prevention and Key Laboratory of Animal Nutrition and Feed Science of Ministry of Agriculture, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang, China*.

11:45 AM 54 **Risk factors for switch in status from *Mycobacterium avium* ssp. *paratuberculosis* test positive to negative; data from the national Johne's disease control demonstration program.**
A. Kenyon*[1], S. Aly[1], and I. Gardner[2], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California-Davis, Tulare*, [2]*Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California-Davis, Davis*.

12:00 PM 55 **Expressing an antimicrobial peptide cathelicidin-BF by fusion with SUMO in *Bacillus subtilis*.**
C. Luan*, Y. G. Xie, H. W. Zhang, and Y. Z. Wang, *Institute of Feed Science, Zhejiang University, National Engineering Laboratory of Biological Feed Safety and Pollution Prevention and Control, Key Laboratory of Animal Nutrition & Feed Science, Ministry of Agriculture, Hangzhou, Zhejiang Province, People's Republic of China*.

Breeding and Genetics Symposium:
Systems Biology in Animal Breeding: Identifying relationships among markers, genes, and phenotypes
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS, USDA
Sponsor: Monsanto Co.
125AB

9:30 AM 56 **Building SNP-derived regulatory networks.**
A. Reverter*, *CSIRO Livestock Industries, Brisbane, Queensland, Australia*.

10:10 AM 57 **Networks and pathways to guide genomic selection.**
W. M. Snelling*[1], R. A. Cushman[1], J. W. Keele[1], C. Maltecca[2], M. G. Thomas[3], M. R. S. Fortes[4,5], and A. Reverter[4], [1]*USDA, ARS, US Meat Animal Research Center, Clay Center, NE*, [2]*Animal Science, North Carolina State University, Raleigh*, [3]*Animal Sciences, Colorado State University, Fort Collins*, [4]*Cooperative Research Center for Beef Genetic Technologies, CSIRO Livestock Industries, Brisbane, QLD, Australia*, [5]*The University of Queensland, School of Veterinary Medicine, Gatton, QLD, Australia*.

10:50 AM 58 **Causal graphical models in quantitative genetics and genomics settings.**
G. J. M. Rosa* and B. D. Valente, *University of Wisconsin, Madison*.

11:30 AM 59 **A systems biology definition for semen quality.**
D. Froman*[1], D. Rhoads[2], and S. Burgess[3], [1]*Oregon State University, Corvallis*, [2]*University of Arkansas, Fayetteville*, [3]*University of Arizona, Tucson*.

12:00 PM 60 **A systems-genetics analysis of bovine skeletal muscle iron content.**
J. E. Koltes*[1], R. G. Tait[1], E. R. Fritz[1], B. P. Mishra[1,2], A. L. Van Eenennaam[3], R. G. Mateescu[4], D. L. Van Overbeke[4], A. J. Garmyn[4], Q. Liu[1], G. Duan[1], D. Nettleton[5], D. Beitz[1], D. Garrick[1], and J. M. Reecy[1], [1]*Department of Animal Science, Iowa State University, Ames*, [2]*National Bureau of Animal Genetic Resources, Karnal, India*, [3]*Department of Animal Science, University of California, Davis*, [4]*Department of Animal Science, Oklahoma State University, Stillwater*, [5]*Department of Statistics, Iowa State University, Ames*.

Companion Animals Symposium:
Nutrition Special Needs—The relationship between novel ingredients, environment and gene expression
Chair: Maria Cattai de Goday, University of Illinois
Sponsors: Hill's Science Diet, Procter and Gamble, and Purina
121AB

9:30 AM **Introduction**

9:35 AM 61 **Alternative ingredients: Which have scientific merit?**
G. Aldrich*, *Pet Food & Ingredient Technology Inc., Topeka, KS.*

10:10 AM 62 **Benefits of probiotic supplementation in stressful situations in companion animals.**
M. R. Lappin*, *Department of Clinical Sciences, Colorado State University, Fort Collins*.

10:45 AM 63 **Dietary and environmental management of feline lower urinary tract disease (FLUTD).**
K. R. Kerr*, *University of Illinois, Urbana*.

11:20 AM 64 **Functional nutrition: Novel ingredients and new findings.**
I. S. Middelbos*, *Novus International Inc., St. Charles, MO*.

11:55 AM 65 **Nutrigenomics: Using gene expression data to understand and manage pet obesity.**
K. S. Swanson*, *University of Illinois, Urbana*.

Dairy Foods
Cheese and Products Processing
Chair: Donald McMahon, Utah State University
121C

9:30 AM 66 **Influence of proteolysis and amino acid release on bitterness and texture of reduced-fat Cheddar cheese.**
M. W. Børsting[1], K. B. Qvist*[1], J. Vindeløv[1], F. K. Vogensen[2], and Y. Ardö[2], [1]*Chr. Hansen A/S, Hørsholm, Denmark*, [2]*Department of Food Science, Faculty of Life Sciences, University of Copenhagen, Copenhagen, Denmark*.

9:45 AM 67 **Impact of sodium, potassium, magnesium, and calcium salt cations on pH, proteolysis and microbial populations during storage of Cheddar cheese.**
D. J. McMahon*[1], N. Farkye[2], L. V. Moyes[3], and C. J. Oberg[1,3], [1]*Western Dairy Center, Utah State University, Logan*, [2]*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*, [3]*Department of Microbiology, Weber State University, Ogden, UT*.

10:00 AM 68 **Impact of different types of emulsifiers on the reformability of grated cheese.**
C. Akbulut* and J. A. Lucey, *University of Wisconsin-Madison, Madison*.

10:15 AM 69 **Phenotypic factors affecting cheese yield and whey losses from individual cows.**
C. Cipolat Gotet*, M. Penasa, A. Cecchinato, M. De Marchi, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE), University of Padova, Legnaro, Padova, Italy*.

10:30 AM 70 **Sensory selection of an antimicrobial for use in string cheese.**
A. Lammert*[1], L. Collinsworth[1], N. Farkye[1], M. Arnold[1], A. Lathrop[2], and T. Taylor[2], [1]*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*, [2]*Department of Food Science and Nutrition, California Polytechnic State University, San Luis Obispo*.

10:45 AM 71 **Microfiltration of skim milk and modified skim milk using a 0.1-µm ceramic uniform transmembrane pressure system at 50, 55, 60, and 65°C.**
E. E. Hurt*, M. Adams, and D. M. Barbano, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

11:00 AM 72 **Leveraging existing processing lines for yogurt product innovation through the use of advanced texturizing systems.**
M. E. Yildiz*, S. Mutz-Darwell, M. Yurgec, A. Perez, and H. Simpson, *National Starch, Bridgewater, NJ*.

11:15 AM 73 **Gravity separation of fat, somatic cells, and bacteria in raw and pasteurized milks.**
Z. Caplin, C. Melilli, and D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

11:30 AM 74 **Effect of PEF and UV and their combination on selected microorganisms and physico-chemical properties in whey.**
A. Dave*[1], M. Walkling-Ribeiro[1], O. Rodríguez-González[2], M. W. Griffiths[1], and M. Corredig[1], [1]*Canadian Research Institute for Food Safety, Department of Food Science, University of Guelph, Guelph, ON, Canada*, [2]*Rodríguez-González Services, Toronto, ON, Canada*.

Forages and Pastures Symposium
Impact of Fungal-Endophytes on Pasture and Environmental Sustainability
Chairs: Jim Strickland, USDA-ARS, FAPRU, and Steve Washburn, North Carolina State University
225AB

9:30 AM **Introductions.**

9:40 AM 75 **Fungal endophytes: Forage friend or foe?**
C. Young*, *Noble Foundation, Ardmore, OK*.

10:10 AM 76 **Impact of tall fescue—Fungal endophyte associations on sustainability of pastures under current and future environmental conditions.**
R. McCulley*, J. Iqbal, J. Siegrist, G. Brosi, and J. Nelson, *University of Kentucky, Lexington*.

10:40 AM 77 **Lessons from "down-under" in New Zealand and Australia: The critical role of endophyte in pasture quality and production.**
D. E. Hume*, *AgResearch, Palmerston North, New Zealand*.

11:10 AM **Break**

11:25 AM 78 **Phases of physiological adaptation to heat stress and fescue toxicosis.**
D. E. Spiers*, B. A. Scharf, J. S. Johnson, and P. A. Eichen, *University of Missouri, Columbia*.

11:55 AM 79 **Managing the fungal endophyte/forage symbiosis for optimum forage-animal production.**
G. Aiken*, *USDA-ARS, FAPRU*.

Graduate Student Competition:
ADSA Dairy Foods Oral Competition
Chair: Sanjeev Anand, South Dakota State University
122C

9:30 AM **Introduction**

9:45 AM 80 **Norbixin partitioning in full-fat and fat-free Cheddar cheese.**
T. J. Smith* and M. A. Drake, *North Carolina State University, Raleigh*.

10:00 AM 81 **The effect of glucose and citric acid concentration on polymerization of lactose by twin-screw extrusion.**
A. J. Tremaine* and T. C. Schoenfuss, *University of Minnesota*.

10:15 AM 82 **Impact of bleaching on flavor and functional properties of 80% serum protein concentrate.**
R. E. Campbell*[1], M. Adams[2], D. M. Barbano[2], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Cornell University, Ithaca, NY*.

10:30 AM 83 **Study of the heat-induced interaction pathway between whey protein and buttermilk components.**
M. Saffon*[1], R. Jiménez-Flores[2], M. Britten[3], and Y. Pouliot[1], [1]*STELA Dairy Research Center, Institute of Nutraceuticals and Functional Foods (INAF), Université Laval, Quebec City, QC, Canada*, [2]*Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*, [3]*Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada*.

10:45 AM 84 **Effect of milk processing on the anticarcinogenic capacity of the milk fat globule membrane.**
R. Zanabria*[1], A. Tellez[2,1], M. Griffiths[2,1], and M. Corredig[1], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Canadian Research Institute for Food Safety (CRIFS), Guelph, ON, Canada*.

11:00 AM 85 **Heat stability of micellar casein concentrate (MCC) as affected by temperature and pH.**
A. Sauer* and C. I. Moraru, *Cornell University, Ithaca, NY*.

11:15 AM 86 **Development of a model system to understand the mechanisms of instability and to predict the shelf-life of oil-in-water emulsions.**
Y. Liang*[1,2], H. Patel[1], L. Matia-Merino[2], A. Ye[3], and M. Golding[2,3], [1]*Fonterra Research Centre, Palmerston North, New Zealand*, [2]*Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand*, [3]*Riddet Institute, Massey University, Palmerston North, New Zealand*.

11:30 AM 87 **Shear stabilized micro-phase-separated dairy gels containing significant concentrations of β-glucan.**
N. Sharafbafi*[1], S. M. Tosh[2], and M. Corredig[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Agriculture and Agri-Food Canada, Guelph Food Research Center, Guelph, Ontario Canada*.

11:45 AM 88 **Streamlining the product development process: Use of the preferred attribute elicitation technique to extract key texture attributes influencing consumer liking of dairy yogurts.**
A. Grygorczyk*[1], M. Corredig[1], I. Lesschaeve[2], and L. Duizer[1], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Vineland Research and Innovation Centre, Vineland Station, ON, Canada*.

Graduate Student Competition:
ADSA Production Division Graduate Oral Competition—PhD Students
Chair: Tanya Gressley, University of Delaware
222C

9:30 AM 89 **Hyperprolactinemia during late gestation increases milk yield from primiparous gilts and piglet growth.**
M. K. VanKlompenberg*, R. Manjarin, H. F. McMicking, and R. C. Hovey, *University of California, Davis*.

9:45 AM 90 **Photoperiod treatment during lactation alters organ weights but does not affect litter weight gain in mice.**
P. A. Bentley* and T. B. McFadden, *University of Alberta, Edmonton, Alberta, Canada*.

10:00 AM 91 **Serotonin (5-HT) affects glucose metabolism in transition rats.**
J. Laporta*, T. L. Peters, K. E. Merriman, and L. L. Hernandez, *University of Wisconsin, Madison*.

10:15 AM 92 **Inflammatory pathways contribute to the metabolic adaptations to lactation in dairy cattle.**
J. K. Farney*[1], L. K. Mamedova[1], J. F. Coetzee[2], B. KuKanich[1], L. M. Sordillo[3], J. E. Minton[1], L. C. Hollis[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Iowa State University, Ames*, [3]*Michigan State University, East Lansing*.

10:30 AM 93 **Metabolism of butyrate infused in the rumen or abomasum of lactating dairy cows.**
K. J. Herrick*[1], A. R. Hippen[1], K. F. Kalscheur[1], D. J. Schingoethe[1], D. P. Casper[1], S. C. Moreland[2], and J. E. van Eys[2], [1]*South Dakota State University, Brookings*, [2]*Nutriad Inc., Elgin, IL*.

10:45 AM 94 **Effect of breed on the metabolic profile in transition Holstein and Jersey dairy cows.**
K. J. Lager*[1,2], E. R. Jordan[1], R. G. S. Bruno[1,2], J. A. H. Rivera[3], A. M. Farias[3], R. Sprowls[4], and D. R. Topliff[2], [1]*Texas AgriLife Extension Service, Texas A&M System, College Station*, [2]*West Texas A&M University, Canyon*, [3]*Texas AgriLife Research, Stephenville*, [4]*Texas Veterinary Medical Diagnostic Laboratory, Amarillo*.

11:00 AM **Break**

11:15 AM 95 **Effects of corn silage hybrids and quality of alfalfa hay on nitrogen metabolism and ruminal fermentation of early lactating dairy cows.**
M. S. Holt*[1], A. J. Young[1], J.-S. Eun[1], and K. E. Nestor[2], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Mycogen Seeds, Indianapolis, IN*.

11:30 AM 96 **Effects of partial replacement of dietary starch from barley or corn with lactose on the performance of dairy cows.**
G. E. Chibisa*[1], G. B. Penner[1], P. Gorka[1], R. Berthiaume[2], and T. Mutsvangwa[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*.

11:45 AM 97 **In search of privacy: Dairy cow preference for an isolated calving area.**
K. L. Proudfoot*, D. M. Weary, and M. A. G. von Keyserlingk, *University of British Columbia, Vancouver, British Columbia, Canada*.

12:00 PM 98 **II. Identifying within-herd risk factors affecting reproductive performance of lactating dairy cows under field conditions.**
S. Bas*[1], R. L. Nebel[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Select Sires Inc., Plain City, OH*.

12:15 PM 99 **Efficacy of a combination butaphosphan and cyanocobalamin product and insulin for ketosis treatment.**
J. L. Gordon*[1], S. J. LeBlanc[1], L. Neuder[2], T. H. Herdt[2], D. F. Kelton[1], and T. F. Duffield[1], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Michigan State University, East Lansing*.

12:30 PM 100 **Ecology of subclinical ketosis in transition dairy cattle.**
J. A. A. McArt*[1], D. V. Nydam[1], and G. R. Oetzel[2], [1]*Cornell University, Department of Population Medicine and Diagnostic Science, Ithaca, NY*, [2]*School of Veterinary Medicine, University of Wisconsin, Madison*.

Graduate Student Competition: ADSA/ASAS Northeast Graduate Paper Competition
Chair: Kristen E. Govoni, University of Connecticut
127C

9:30 AM 101 **Metabolomic profiling of the liver in developing chicken embryos and post-hatch chicks reveals unique metabolic differences.**
Q. Hu*, U. Agarwal, and B. J. Bequette, *University of Maryland, College Park*.

9:45 AM 102 **Effect of resveratrol supplementation on glycemic response in moderately exercised geldings.**
J. L. Zambito*[1], H. S. Spooner[1], and R. Hoffman[2], [1]*West Virginia University, Morgantown*, [2]*Middle Tennessee State University, Murfreesboro*.

10:00 AM 103 **Effects of intrauterine growth retardation due to poor maternal nutrition on bone formation in sheep.**
S. Neupane*[1], M. L. Hoffman[1], M. A. Rokosa[1], E. R. Ackell[1], D. M. Kaelin[1], S. A. Zinn[1], T. D. Crenshaw[2], and K. E. Govoni[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Department of Animal Science, University of Wisconsin, Madison*.

10:15 AM 104 **Hypoxia stimulates GLUT1 expression in bovine mammary epithelial cells.**
Y. Shao*[1], K. M. Lounsbury[2], T. L. Wellman[2], and F.-Q. Zhao[1], [1]*Laboratory of Lactation Physiology, Department of Animal Science, University of Vermont, Burlington*, [2]*Department of Pharmacology, University of Vermont, Burlington*.

10:30 AM 105 **Poor maternal nutrition reduced body weights and circulating concentrations of IGF-I and IGFBP-3 in lambs.**
M. A. Rokosa*, M. L. Hoffman, S. Neupane, K. E. Govoni, A. M. Bush, T. A. Hoagland, and S. A. Zinn, *Department of Animal Science, University of Connecticut, Storrs*.

10:45 AM 106 **Effect of rumen-protected amino acid supplementation of a protein-deficient diet on performance of lactating dairy cows.**
C. Lee*[1], A. N. Hristov[1], T. Cassidy[1], K. Heyler[1], H. Lapierre[2], G. A. Varga[1], M. J. de Veth[3], A. Patton[4], and C. Parys[5], [1]*The Pennsylvania State University, University Park*, [2]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Balchem Corporation, New Hampton, NY*, [4]*Nittany Dairy Nutrition Inc., Mifflinburg, PA*, [5]*Evonik Industries AG, Hanau, Germany*.

11:00 AM 107 **Effects of lasalocid and pulse-dosed chlortetracycline on health, growth, and thyroxine concentrations of prepubertal dairy heifers.**
R. Cabral*[1], P. Erickson[1], N. Guindon[1], E. Kent[1], C. Chapman[1], K. Aragona[1], M. Cabral[1], E. Massa[1], and M. Branine[2], [1]*University of New Hampshire, Durham*, [2]*Pfizer Animal Health, Canon City, CO*.

11:15 AM 108 **Effect of post-ruminal supplementation of phytonutrients on immune response, blood cell counts, and blood chemistry in lactating dairy cows.**
J. Oh*[1], A. N. Hristov[1], C. Lee[1], K. Heyler[1], T. Cassidy[1], J. Pate[1], S. Walusimbi[1], E. Brzezicka[1], K. Toyokawa[1], J. Werner[1], and D. Bravo[2], [1]*The Pennsylvania State University, University Park*, [2]*Pancosma, Geneva, Switzerland*.

Graduate Student Competition:
CSAS Student Competition I
Chair: Greg Penner, University of Saskatchewan
Sponsor: Monsanto Co.
223

9:30 AM 384 **Dynamics of nitrogen retention in entire male pigs immunized with Improvest.**
L. Huber*, D. Wey, and C. de Lange, *University of Guelph, Guelph, ON, Canada*.

9:45 AM 662 **Restricting sulfur amino acid intake in immune system stimulated pigs decreases plasma protein and albumin synthesis.**
N. Litvak* and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:00 AM 382 **Hepatic gene expression analysis of nursery pigs fed simple and complex starter diets.**
M. Rudar*, L. D. Skinner, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:15 AM 304 **Effect of vaccination technique and antibody level on primary and secondary response in beef calves after vaccination against bovine viral diarrhea virus.**
M. R. Rey*[1], J. C. Rodriguez-Lecompte[1], T. Joseph[3], J. Morrison[2], A. Yitbarek[1], K. M. Wittenberg[1], M. Undi[1], and K. H. Ominski[1], [1]*Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada*, [2]*Department of Biosystems Engineering, University of Manitoba, Winnipeg, MB, Canada*, [3]*Veterinary Diagnostic Services, Manitoba Agriculture, Food and Rural Initiatives, Winnipeg, MB, Canada*.

10:30 AM 545 **Impact of diet on the abundance and diversity of fecal *Escherichia coli* shed from cattle in overwintering environments.**
K. Christiuk*, D. O. Krause, K. Ominski, T. De Kievit, and E. Khafipour, *University of Manitoba, Winnipeg, Manitoba, Canada*.

10:45 AM 208 **Gradual cessation of milking reduces milk leakage and anticipatory behavior in dairy cows at dry-off.**
G. Zobel*[1], D. M. Weary[1], K. Leslie[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Population Medicine, University of Guelph, Guelph, ON, Canada*.

11:00 AM 701 **The effect of limiting feed intake on concentration of proteins associated with energy balance in the pregnant beef cow.**
K. M. Wood*[1], C. J. Fitzsimmons[2,3], S. P. Miller[1], B. W. McBride[1], and K. C. Swanson[4], [1]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Edmonton, AB, Canada*, [3]*Dept. of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

11:15 AM 856 **Effects of short-term feed restriction on ruminal function.**
S. Zhang*[1], D. R. Barreda[2], J. R. Aschenbach[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*University of Alberta, Edmonton, AB, Canada*, [3]*Free University of Berlin, Berlin, Germany*.

11:30 AM 569 **Effects of dietary forage-to-concentrate ratio and sulfur concentration on ruminal fermentation and sulfur metabolism in feedlot heifers.**
S. Amat*, J. J. McKinnon, G. B. Penner, E. Simko, and S. Hendrick, *University of Saskatchewan, Saskatoon, SK, Canada*.

11:45 AM 538 **Effect of the forage-to-concentrate ratio on DMI and ruminal fermentation based on timing of feeding relative to feed restriction.**
R. I. Albornoz*[1], J. R. Aschenbach[2], D. R. Barreda[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Free University of Berlin, Berlin, Germany*, [3]*University of Alberta, Edmonton, AB, Canada*.

12:00 PM 567 **Effect of ruminal adaptation on short-chain fatty acid absorption and risk for ruminal acidosis.**
T. Schwaiger*[1,2], K. A. Beauchemin[2], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Lethbridge Research Center, Lethbridge, AB, Canada*.

12:15 PM 794 **Effect of dried distillers grains with solubles on enteric methane emissions and nitrogen excretion from finishing beef cattle.**
M. Hünerberg*[1,2], T. A. McAllister[2], K. A. Beauchemin[2], S. M. McGinn[2], O. M. Harstad[3], and E. K. Okine[1], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [3]*Norwegian University of Life Sciences, Norway*.

Growth and Development
Chair: Sally Johnson, University of Florida
123

9:30 AM 109 **Zfp423 promotes adipogenic differentiation of bovine stromal vascular cells.**
Y. Huang*[1], A. Das[1,2], Q. Yang[1,2], M.-J. Zhu[1,2], and M. Du[1,2], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*Department of Animal Sciences, Washington State University, Pullman*.

9:45 AM 110 **Agouti signaling protein abundance in cattle—Relationship with fat deposition.**
E. Albrecht*[1], K. Komolka[1], H. Sauerwein[2], T. Gotoh[3], and S. Maak[1], [1]*Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany*, [2]*University Bonn, Bonn, Germany*, [3]*Kyushu University, Kuju-cho, Oita, Japan*.

10:00 AM 111 **Blood glucose and acylated ghrelin in response to duration of maternal undernutrition during gestation in twin sheep pregnancies.**
M. E. Field*, R. V. Anthony, M. D. Vetters, C. Flörcke, T. E. Engle, S. L. Archibeque, and H. Han, *Colorado State University, Fort Collins*.

10:15 AM 112 **Delaying a bovine viral diarrhea vaccine and growth implant with metaphylaxis affects performance, but not health of feedlot heifers.**
M. R. McDaniel*[1], M. E. Hubbert[2], and C. A. Loest[1], [1]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*, [2]*Clayton Livestock Research Center, New Mexico State University, Clayton*.

10:30 AM 114 **Maternal nutrition of beef cattle on pasture mediates long-term consequences for offspring primarily through effects on growth early in life.**
P. L. Greenwood*, L. M. Cafe, and D. L. Robinson, *Australian Cooperative Research Centre for Beef Genetic Technologies and NSW Department of Primary Industries, Armidale, NSW, Australia*.

10:45 AM 115 **Lean tissue accretion and the efficiency of energy and protein retention are enhanced by intermittent bolus compared to continuous feeding.**
S. W. El-Kadi*, C. Boutry, M. C. Gazzaneo, A. Suryawan, R. A. Orellana, N. Srivastava, H. V. Nguyen, M. L. Fiorotto, and T. A. Davis, *USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX*.

11:00 AM 116 **Tripalmitolein infusion in finished lambs.**
T. A. Burns*, M. C. Miller, A. K. G. Kadegowda, H. M. Stowe, S. M. Calcatera, and S. K. Duckett, *Clemson University, Clemson, SC*.

11:15 AM 117 **Nutritional milieu of preadipocytes determines the differentiating capabilities of bovine primary stromal vascular cultures.**
A. K. G. Kadegowda*, M. C. Miller, T. A. Burns, A. Wright, and S. K. Duckett, *Clemson University, Clemson, SC*.

11:30 AM 118 **Effects of feeding different forage sources on rumen fermentation and gastrointestinal tract development in young calves.**
Ll. Castells*[1], A. Bach[1,2], and M. Terré[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*ICREA, Barcelona, Spain*.

11:45 AM 113 **The effects of intrauterine growth retardation (IUGR) due to poor maternal nutrition on adipose tissue development and metabolic status in sheep.**
M. L. Hoffman*[1], M. A. Rokosa[1], S. Neupane[1], S. M. Spignesi[1], J. Lee[2], S. A. Zinn[1], and K. E. Govoni[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Department of Nutritional Sciences, University of Connecticut, Storrs*.

International Animal Agriculture Symposium
Increasing Undergraduate and Graduate Student Training in International Animal Agriculture
Chair: Jeffrey Bewley, University of Kentucky
Sponsors: EAAP and Elanco Animal Health
222AB

9:30 AM 119 **What type of employee will international agribusiness companies be seeking?**
K. A. Jacques* and K. A. Dawson, *Alltech Center for Animal Nutrigenomics & Applied Animal Nutrition, Nicholasville, KY*.

10:00 AM 120 **The role of animal scientists in assuring food security in developing countries.**
J. Turk*, *U.S. Agency for International Development, Washington, DC*.

10:30 AM 121 **Implementing new technologies in developing countries: Intellectual property, patent laws, and technology transfer agreements.**
K. Krafka*, *Kemin Industries Inc., Des Moines, IA*.

11:00 AM 122 **EAAP-ASAS Speaker Exchange Presentation: A theme-based approach in smallholder dairy training through a partnership between Malawi and Scotland.**
M. G. G. Chagunda*[1], T. N. Gondwe[2], and D. J. Roberts[1], [1]*Scottish Agricultural College, Edinburgh, UK*, [2]*Bunda College of Agriculture, Lilongwe, Malawi*.

11:30 AM 123 **Preparing students for a changing world: Employer prioritized attributes from international engagement.**
L. J. Unruh Snyder*, J. M. Fernandez, and M. A. Russell, *Purdue University, West Lafayette, IN*.

12:00 PM 124 **In-country partnering needed for successful international service learning.**
P. Ebner*[1], H. Oliver[2], and M. Russell[1], [1]*Department of Animal Sciences, Purdue University*, [2]*Department of Food Science, Purdue University*.

Lactation Biology I
Chair: Kirsty Daniels, Ohio State University
231C

9:30 AM 125 **Serotonin (5-HT) regulates calcium mobilization at the onset of lactation in rats.**
J. LaPorta, T. L. Peters, K. E. Merriman, and L. L. Hernandez*, *University of Wisconsin, Madison*.

9:45 AM 126 **Genes and functions associated with photoperiodic effects on the mammary gland.**
T. B. McFadden*[1] and E. H. Wall[2], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, [2]*Department of Medicine, University of Vermont, Burlington*.

10:00 AM 127 **Effect of ovariectomy on milk yield and mammary gland activity in lactating cow.**
L. Yart*[1,2], F. Dessauge[1,2], L. Finot[1,2], S. Wiart[1,2], A. Mottin[1,2], A. Eveno[1,2], P. G. Marnet[2,1], and V. Lollivier[2,1], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

10:15 AM 128 **Effect of cooling during the dry period on neutrophil gene expression after *Streptococcus uberis* infection.**
I. M. Thompson*, S. Tao, K. C. Jeong, W. W. Thatcher, and G. E. Dahl, *University of Florida*.

10:30 AM 129 **Short-term increases in milking frequency and a higher plane of nutrition did not increase total milk production in pasture-based dairy cows during an extended lactation.**
A. G. Rius*, C. V. C. Phyn, J. K. Kay, and J. R. Roche, *DairyNZ, Hamilton, New Zealand*.

10:45 AM 130 **Transcriptome analysis of blood in heat-stressed dairy goats.**
A. A. K. Salama*[1], S. Hamzaoui[1], B. Badaoui[2], A. Zidi[3], and G. Caja[1], [1]*Grup de Recerca en Remugants (G2R), Universitat AutÃ³noma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Integrative Biology Group, Parco Tecnologico Padano-CERSA, Lodi, Italy*, [3]*Centre de Recerca en Agrigenomica (CRAG), Bellaterra, Barcelona, Spain*.

11:00 AM 131 **Effects of high feeding level on caprine mammary gland development and milk yield potential.**
J. M. Aubry[1,2], L. Finot[1,2], L. Yart[1,2], S. Wiart[1,2], E. Siroux[1], M. Chorho[1], J. Lassalas[1], and F. Dessauge*[1,2], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

Nonruminant Nutrition
Minerals and Vitamins
Chair: Ryan Dilger, University of Illinois
Sponsor: Evonik Degussa
129AB

9:30 AM 132 **Determination of endogenous intestinal losses of Ca and digestibility of Ca in canola meal fed to growing pigs.**
J. C. Gonzalez-Vega*[1], C. L. Walk[2], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*AB Vista, Marlborough, UK*.

9:45 AM 133 **The effect of supplemental vitamin D_3 as an oral dose or in early nursery pig diets on pig growth performance and serum 25(OH)D_3 concentrations.**
J. R. Flohr*[1], M. D. Tokach[1], S. S. Dritz[1], S. C. Henry[2], M. L. Potter[2], N. S. Shelton[1], L. L. Greiner[3], J. Connor[3], R. D. Goodband[1], J. L. Nelssen[1], and J. M. DeRouchey[1], [1]*Kansas State University, Manhattan*, [2]*Abilene Animal Hospital, Abilene, KS*, [3]*Innovative Swine Solutions, Carthage, IL*.

10:00 AM 134 **Carbohydrase and phytase complex improves performance and bone mineralization of pigs fed wheat-soybean base diet.**
P. Cozannet[1], R. Gerritsen[2], R. Maillard[1], E. Devillard*[1], and A. Preynat[1], [1]*Adisseo France SAS, CERN, Malicorne, France*, [2]*Schothorst Feed Research, Lelystad, Netherlands*.

10:15 AM 135 **Modulation of phosphorus digestive utilization in weanling pigs: influence of dietary calcium and phytase on gastro-intestinal digesta pH and mineral solubility.**
A. Narcy[1], M. P. Létourneau-Montminy*[2], E. Bouzouagh[1], N. Même[1], M. Magnin[3], and J. Y. Dourmad[4], [1]*INRA, UR83 Recherches Avicoles, Nouzilly, France*, [2]*Agriculture et Agroalimentaire Canada, Sherbrooke, QC, Canada*, [3]*BNA-NA, Chateau-Gontier, France*, [4]*INRA-Agrocampus Ouest, UMR 1348, Saint Gilles, France*.

10:30 AM 136 **Phosphorus utilization in finishing broiler chickens: Effect of dietary calcium and microbial phytase.**
X. Rousseau*[1,2], M. P. Letourneau-Montminy[3], M. Magnin[1], N. Même[2], Y. Nys[2], and A. Narcy[2], [1]*BNA NA, Château-Gontier, France*, [2]*INRA UR83 Recherches avicoles, Nouzilly, France*, [3]*Agriculture and Agri-Food Canada, Lennoxville, Québec, Canada*.

10:45 AM 137 **The effect of dietary levels of copper and zinc on rate and efficiency of growth by rainbow trout.**
E. S. Read*[1], W. M. Sealey[2], F. T. Barrows[3], M. K. Petersen[4], and J. A. Paterson[1], [1]*Montana State University, Bozeman*, [2]*US Fish and Wildlife Service, Bozeman, MT*, [3]*US Department of Agriculture, Agriculture Research Service, Bozeman, MT*, [4]*US Department of Agriculture, Agriculture Research Service, Miles City, MT*.

11:00 AM 138 **Varied sources of conjugated linoleic acid (CLA) does not alter bone mineral density (BMD), bone mineral content (BMC), or body fat content in postmenopausal ovariectomized rats.**
K. M. Kanosky*, Z. D. Callahan, M. A. Brown, C. S. Perkins, E. A. Benavides, D. H. Keisler, and B. R. Wiegand, *University of Missouri, Columbia*.

11:15 AM 139 **Effects of selenium-enriched exopolysaccharide produced by *Enterobacter cloacae* Z0206 on growth performance, immunity and antioxidant activities in broiler chickens.**
Z. Q. Lu*, Y. M. Wang, M. Huang, and Y. Z. Wang, *Institute of Feed Science, Zhejiang University, National Engineering Laboratory of Bio-feed Safety and Pollution Prevention, Key Laboratory of Animal Nutrition and Feed science of Ministry of Agriculture, Hangzhou, Zhejiang Province, China*.

Ruminant Nutrition
Beef Production I
Chair: Allan Chestnut, Provimi
226ABC

9:30 AM 140 **Effects of metabolic imprinting on growth performance and gene expression of early-weaned beef heifers.**
P. Moriel*[1], V. Mercadante[2], A. D. Aguiar[1], S. E. Johnson[2], M. J. Hersom[2], J. M. B. Vendramini[1], and J. D. Arthington[1], [1]*Range Cattle Research and Education Center, University of Florida, Ona, FL*, [2]*University of Florida, Gainesville*.

9:45 AM 141 **Effects of metabolic imprinting on growth performance of early-weaned beef steers.**
P. Moriel*[1], V. Mercadante[2], A. D. Aguiar[1], S. E. Johnson[2], M. J. Hersom[2], J. M. B. Vendramini[1], and J. D. Arthington[1], [1]*Range Cattle Research and Education Center, University of Florida, Ona*, [2]*University of Florida, Gainesville*.

10:00 AM 142 **Correlation of feed intake and efficiency with small intestinal angiogenic factor and receptor expression in finishing cattle born to dams fed varying levels of nutrients during early to mid-gestation.**
A. M. Meyer*[1], K. M. Cammack[1], K. J. Austin[1], J. M. Kern[1], M. Du[1], J. S. Caton[2], and B. W. Hess[1], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*.

10:15 AM 143 **Reproductive and productive responses to suckling-restriction treatments and flushing in primiparous grazing beef cows.**
P. Soca*[1], M. Carriquiry[1], D. Keisler[2], M. Claramunt[1], M. Do Carmo[1], J. Olivera- Muzante[1], M. Rodriguez[1], and A. Meikle[1], [1]*University of Uruguay, Paysandu, Uruguay*, [2]*University of Missouri, Columbia*.

10:30 AM 144 **Use of an injectable mineral in beef cattle: Mineral status.**
O. N. Genther* and S. L. Hansen, *Iowa State University, Ames*.

10:45 AM 145 **Use of an injectable mineral in beef cattle: Growth and carcass characteristics.**
O. N. Genther* and S. L. Hansen, *Iowa State University, Ames*.

11:00 AM 146 **Effects of restricted versus conventional dietary adaptation over periods of 9 and 14 days on feedlot performance and carcass traits of Nellore cattle.**
R. S. Barducci[1], M. D. B. Arrigoni[1], C. L. Martins[1], D. D. Millen*[2], L. M. N. Sarti[1], M. C. S. Franzói[1], L. C. Vieira Júnior[1], T. L. de Jesus[1], T. C. Putarov[1], M. T. Cesar[1], A. S. Pereira[1], E. T. Macedo[1], A. Perdigão[1], F. A. Ribeiro[1], A. L. N. Rigueiro[2], [1]*São Paulo State University (UNESP), Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP), Dracena, São Paulo, Brazil*.

11:15 AM 147 **Effect of dietary energy density and control of meal size on growth performance, eating pattern, and carcass and meat quality in Holstein steers fed high-concentrate rations.**
S. Marti*[1], M. Pérez-Juan[2], A. Aris[1], A. Bach[3,1], and M. Devant[1], [1]*IRTA-Ruminant Production, Animal Nutrition, Management, and Welfare Research Group, Torre Marimon, Caldes de Montbui, Barcelona, Spain*, [2]*IRTA-Monells, Girona, Spain*, [3]*ICREA, Barcelona, Spain*.

11:30 AM 148 **Dataset-specific dry matter intake prediction equation determination for growing calves.**
M. F. Wilken*, L. L. Berger, G. E. Erickson, M. K. Nielsen, M. L. Spangler, and S. D. Kachman, *University of Nebraska-Lincoln, Lincoln*.

11:45 AM 149 **The use of biometric measures to assess body fat composition of F1 Nellore × Angus bulls and steers.**
M. A. Fonseca*[1,2], L. O. Tedeschi[2], S. C. Valadares Filho[1], H. J. Fernandes[3], N. F. De Paula[1,2], M. G. Machado[1], F. A. C. Villadiego[1], and J. M. Silva Junior[4], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Texas A&M University, College Station, Texas, United States*, [3]*Universidade Estadual do Mato Grosso do Sul, Aquidauana, Mato Grosso do Sul, Brazil*, [4]*Universidade Federal Rural de Pernambuco, Garanhuns, Pernambuco, Brazil*.

12:00 PM 150 **Evaluation of volatile fatty acid stoichiometries and methane predictions for high grain fed beef cattle within a mechanistic digestion model.**
J. L. Ellis*[1,2], J. Dijkstra[2], A. Bannink[3], E. Kebreab[4], S. Archibeque[5], and J. France[1], [1]*Centre for Nutrition Modelling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands*, [3]*Wageningen UR Livestock Research, Lelystad, the Netherlands*, [4]*Department of Animal Science, University of California-Davis, Davis*, [5]*Animal Sciences, Colorado State University, Fort Collins*.

12:15 PM 151 **Supplemental vitamin C alleviates negative effects of high sulfur diets on beef quality.**
D. J. Pogge*, S. M. Lonergan, and S. L. Hansen, *Iowa State University, Ames*.

Ruminant Nutrition
Dairy Production I
Chair: Rick Kohn, University of Maryland
132ABC

9:30 AM 152 **Liver gene expression patterns can explain accumulation of lipid in the liver during the transition period.**
H. R. Khazanehei*, P. Eck, A. Regassa, D. O. Krause, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

9:45 AM 153 **Effects of nutrition, ketosis, and inflammation on hepatokine and nuclear receptor expression in liver of peripartal Holstein dairy cows.**
H. Akbar*, J. M. Khan, D. B. Carlson, J. K. Drackley, and J. J. Loor, *University of Illinois, Urbana*.

10:00 AM 154 **Effects of a moderate-energy diet during the close-up dry period on immunometabolic indices in peripartal dairy cows.**
J. S. Osorio*[1], E. Trevisi[2], P. Ji[1], J. K. Drackley[1], G. Bertoni[2], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*Universita Cattolica del Sacro Cuore, Piacenza, Italy*.

10:15 AM 155 **Integrating control by gene expression in adipose tissue into a mechanistic, dynamic model of metabolism to investigate the biological basis for variation in genetics of feed conversion efficiency in lactating dairy cattle.**
S. Shields* and J. McNamara, *Washington State University, Pullman*.

10:30 AM 156 **Dietary manipulation of crude protein and starch content affects energy balance in early lactation dairy cows.**
S. J. Whelan*[1,3], F. J. Mulligan[2], V. Gath[2], B. Flynn[3], and K. M. Pierce[1], [1]*School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland*, [2]*School of Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*, [3]*University College Dublin Lyons Research Farm, Newcastle, Dublin, Ireland*.

10:45 AM 157 **Colostrum yield by multiparous cows is positively correlated with prepartum body fat mobilization.**
N. Litherland*, W. Weich, D. Lobao, and Z. Sawall, *University of Minnesota, St. Paul*.

11:00 AM 158 **A starch-binding agent decreases the in vitro rate of fermentation of wheat.**
F. R. Dunshea*[1], V. M. Russo[1], I. Sawyer[2], and B. J. Leury[1], [1]*Melbourne School of Land and Environment, The University of Melbourne, Parkville, Victoria, Australia*, [2]*Feedworks Pty Ltd., Lancefield, Victoria, Australia*.

11:15 AM 159 **Effects of intrajugular glucose infusion and dietary protein concentration on feed intake, milk yield and metabolic responses of postpartum cows.**
W. E. Brown* and M. S. Allen, *Michigan State University, East Lansing*.

11:30 AM 160 **Effects of feeding moderate-energy high-forage diets with reduced DCAD for 21 or 42 days prepartum on mineral homeostasis and postpartum performance by multiparous dairy cows.**
W. D. Weich*[1], E. Block[2], and N. B. Litherland[1], [1]*University of Minnesota Department of Animal Science, St. Paul*, [2]*Church and Dwight Co. Inc., Arm and Hammer Animal Nutrition, Princeton, NJ*.

11:45 AM 161 **Comparison of methane prediction for pasture fed dairy cows using a simulation model (Molly) incorporating revised VFA stoichiometry and microbial pools.**
J. McNamara*[1], P. Buekes[2], P. Gregorini[2], M. Hanigan[3], and G. Waghorn[2], [1]*Washington State University, Pullman*, [2]*Dairy New Zealand, Hamilton, New Zealand*, [3]*Virginia Tech University, Blacksburg*.

12:00 PM 162 **Effects of dry period management and time relative to calving on the expression of genes involved in carbohydrate metabolism in the liver.**
H. R. Khazanehei*, P. Eck, A. Regassa, D. O. Krause, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

Ruminant Nutrition I
Chair: Aimee Wertz, ADM
131ABC

9:30 AM 163 **Silage process affects chemical composition and digestion site in high moisture sorghum grain.**
M. Torterolo[1], A. Curbelo[2], C. Cajarville[2], J. L. Repetto[1], and M. Aguerre*[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [2]*Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

9:45 AM 164 **Effect of corn residue removal on cattle performance and subsequent grain yield.**
A. L. McGee*, J. L. Harding, T. J. Klopfenstein, S. J. van Donk, and L. A. Stalker, *University of Nebraska, Lincoln*.

10:00 AM 165 **Effects of restricted versus conventional dietary adaptation over periods of 9 and 14 days on rumen papillae of feedlot Nellore cattle.**
T. V. B. Carrara[2], D. D. Millen*[2], M. D. B. Arrigoni[1], C. L. Martins[1], R. S. Barducci[1], F. T. V. Pereira[2], L. M. N. Sarti[1], M. C. S. Franzói[1], D. D. Estevam[2], L. L. Cursino[2], P. L. P. Fontes[1], R. D. L. Pacheco[1], R. A. Rizzieri[1], C. F. da Costa[1], L. D. F. Miranda[1], [1]*São Paulo State University (UNESP), Botucatu, São Paulo, Brazil*, [2]*São Paulo State University (UNESP), Dracena, São Paulo, Brazil*.

10:15 AM 166 **Fatty acid composition of backfat, intermuscular, KPH and tail fat depot sites of Angus cross steers finished on grass or high grain diets.**
G. Acetoze*[1] and H. A. Rossow[2], [1]*Department of Animal Science, University of California, Davis*, [2]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California- Davis, Tulare*.

10:30 AM 167 **Replacing corn and soybean meal in lactating dairy cow diets with field peas (*Pisum sativum*) on milk production and nitrogen utilization.**
J. J. Albrecht*, K. F. Kalscheur, A. R. Hippen, D. J. Schingoethe, and D. P. Casper, *South Dakota State University, Brookings*.

10:45 AM 168 **Milk production response to increasing net energy intake in dairy cows. A meta-analysis.**
C. Jensen*[1,2], M. R. Weisbjerg[1], and S. Østergaard[1], [1]*Department of Animal Science, Aarhus University, Denmark*, [2]*Knowledge Centre of Agriculture, Skejby, Denmark*.

ADSA-SAD Undergraduate Competition
Dairy Foods
Chair: Mary Sowerby, University of Florida, Gainesville
231A

11:00 AM 169 **Nutritive value of bovine milk as compared with alternative dairy-free beverages.**
S. M. Smith* and J. M. Bewley, *University of Kentucky, Lexington*.

11:15 AM 170 **Milk and cognitive abilities: Can dairy products work to improve your memory?**
N. L. Leckie* and C. L. Widener, *Clemson University, Clemson, SC*.

11:30 AM 171 **Milk production and pasteurization: Two opposing viewpoints.**
M. Sprague* and E. L. Karcher, *Department of Animal Science, Michigan State University, East Lansing*.

11:45 AM 172 **The effects of flavored milk in the cafeteria.**
S. M. Vignes* and C. C. Williams, *Louisiana State University, Baton Rouge*.

12:00 PM 173 **Importance of texturants in dairy products.**
H. R. Wentworth* and D. R. Olver, *The Pennsylvania State University*.

12:15 PM 174 **Production of functional probiotic and prebiotic dairy foods.**
L. Hetrick*, D. Winston, and B. Corl, *Virginia Tech, Blacksburg*.

Physiology and Endocrinology
Estrous Cycle Manipulation - Dairy
Chair: Anthony McNeel, USDA-ARS U.S. Meat Animal Research Center
Sponsor: Pfizer Animal Health
231C

11:30 AM 175 **Ovulatory responses to withdrawal of progesterone feedback during the early and late luteal phase.**
G. E. Mann*[1] and R. S. Robinson[2], [1]*University of Nottingham, School of Biosciences, Division of Animal Sciences, Sutton Bonington Campus, Loughborough, UK*, [2]*University of Nottingham, School of Veterinary Medecine and Science, Sutton Bonington Campus, Loughborough, UK*.

11:45 AM 176 **Estrus behavior and fertility responses in lactating grazing dairy cows after a timed AI program using estradiol cypionate.**
M. N. Correa*[1], M. E. Lima[1], C. C. Brauner[1], A. R. T. Krause[1], E. G. Xavier[2], E. Schmitt[1], A. Schneider[1], and F. A. B. Del Pino[1], [1]*Universidade Federal de Pelotas, NUPEEC, Pelotas, RS, Brazil*, [2]*Granjas 4 Irmaos S/A, Rio Grande, RS, Brazil*.

12:00 PM 177 **Effect of reusing CIDRs on estrus behavior and fertility responses in a Heatsynch protocol of grazing dairy cows.**
C. C. Brauner*[1], M. E. Lima[1], A. R. T. Krause[1], E. G. Xavier[2], A. Schneider[1], E. Schmitt[1], F. A. B. Del Pino[1], and M. N. Correa[1], [1]*Universidade Federal de Pelotas, NUPEEC, Pelotas, RS, Brazil*, [2]*Granjas 4 Irmaos S/A, Rio Grande, RS, Brazil*.

12:15 PM 178 **Effect of intrauterine administration of GnRH on LH secretion in lactating dairy cows.**
S. Bas*[1], M. L. Day[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Animal Sciences, The Ohio State University, Columbus*.

Graduate Student Competition:
ADSA Southern Section (Graduate)
Chair: Kasim Ingawa, NCSU-DRMS
127C

11:45 AM 179 **Volatile fatty acids and biohydrogenation intermediates in continuous cultures are returned to normal by addition of potassium carbonate but not by potassium chloride.**
P. H. Morris*[1], J. G. Andrae[1], J. K. Bernard[2], E. Block[3], and T. C. Jenkins[1], [1]*Clemson University, Clemson, SC*, [2]*University of Georgia, Tifton*, [3]*Arm & Hammer Animal Nutrition, Princeton, NJ*.

12:00 PM 180 **Dietary l-arginine supplementation effects on growth and health parameters in neonatal Holstein bull calves.**
A. N. Vanderlick*[1], G. A. Holub[1], and W. T. Bissett[2], [1]*AgriLife Research Texas A&M University, College Station*, [2]*College of Veterinary Medicine, Texas A&M University, College Station*.

12:15 PM 181 **Changes in cortisol levels with alternating access to rotating cow brushes.**
R. A. Black*[1], M. R. P. Elmore[2], D. L. Ray[1], A. B. Klingenfus[3], B. L. Klingenfus[3], J. D. Clark[1], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*University of Illinois, Urbana*, [3]*Harvest Home Dairy, Crestwood, KY*.

ADSA-SAD Undergraduate Competition
Dairy Production
Chair: Mary Sowerby, University of Florida, Gainesville
231A

1:30 PM 182 **Glucose transporter and hypoxia-associated gene expression in the mammary gland of transition dairy cattle.**
C. N. Niewiadomski*, S. A. Mattmiller, and E. L. Karcher, *Michigan State University, East Lansing*.

1:45 PM 183 **Challenges and inconsistencies associated with goat somatic cell counts.**
K. M. Wolf* and J. M. Bewley, *University of Kentucky, Lexington*.

2:00 PM 184 **On-farm culturing as a new management practice.**
A. Patch*, D. Winston, I. Mullarky, and C. Petersson-Wolfe, *Virginia Tech, Blacksburg*.

2:15 PM 185 **New approaches to combat milk fat depression.**
J. M. Risser* and D. R. Olver, *Pennsylvania State University, University Park*.

2:30 PM **Break**

2:45 PM 186 **Monitoring the composition of waste milk fed to dairy calves.**
E. L. Stayduhar*, K. D. Stevens, M. L. Eastridge, and K. M. Daniels, *The Ohio State University, Columbus*.

3:00 PM 187 **Early pregnancy detection methods in reproductive management.**
C. E. Burke* and C. C. Williams, *Louisiana State University, Baton Rouge*.

3:15 PM 188 **Anaerobic digestion and the benefits to dairy farmers.**
S. K. Luther*, A. C. Wilkie, and M. E. Sowerby, *University of Florida, Gainesville*.

3:30 PM 189 **Supplemental melatonin: A potential strategy for maintaining mammary health in dairy cattle.**
M. M. Palmer*, D. N. Williams, and J. L. Fain, *Clemson University, Clemson, SC*.

ADSA Southern Section Symposium
Meeting the Nutrient Requirements of Dairy Cattle During Heat Stress
Chair: Christie Stanley, Land O'Lakes Purina Feed
225AB

2:00 PM 190 **Heat stress in young dairy calves.**
C. C. Williams*, *Louisiana State University AgCenter, Baton Rouge*.

2:30 PM 191 **Managing heat stress in dairy heifers.**
R. E. James* and S. Neal, *Department of Dairy Science, Virginia Tech, Blacksburg*.

3:00 PM 192 **Impact of management on feeding dairy cows in heat stress.**
G. Bethard*, *Dairy Records Management Systems, Raleigh, NC*.

3:30 PM 193 **Lactating cows and changes in dry matter intake during heat stress.**
J. W. West*, *University of Georgia, Tifton*.

4:00 PM 194 **Use of fat and other feed additives in heat-stressed cattle.**
L. H. Baumgard*[1], A. Nayeri[1], M. V. Sanz-Fernandez[1], J. S. Johnson[1], D. B. Snider[1], D. P. Bu[2], and R. P. Rhoads[3], [1]*Iowa State University, Ames*, [2]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agriculture Sciences, Beijing, China*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

4:30 PM 195 **Feeding dairy cattle in a grazing system during heat stress.**
J. K. Bernard*, *University of Georgia, Tifton*.

5:00 PM **ADSA Southern Section Business Meeting.**

ADSA-SAD Undergraduate Competition
Original Research
Chair: Elizabeth Karcher, Michigan State University
231C

2:00 PM 196 **Monitoring the incidence of ketosis in fresh cows using milk composition, urine ketones, and milk ketones.**
K. D. Stevens*, E. L. Stayduhar, M. L. Eastridge, and K. M. Daniels, *The Ohio State University, Columbus*.

2:15 PM 197 **Effect of a liquid acid footbath solution containing a cationic surfactant on digital dermatitis in dairy cattle.**
T. A. Reiter*[1], B. A. Beavers[2], F. R. Moreira[3], K. J. McQueery[1], C. L. Wood[1], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*Beavers Hoofcare Service LLC, Lebanon, KY*, [3]*GEA Farm Technologies, Naperville, IL*.

2:30 PM 198 **Establishment of antibiotic resistance genes in the gut of pre-weaned dairy calves.**
L. Woloohojian*, E. Hurley, P. Ray, B. Willing, H. Littier, A. Pruden, and K. Knowlton, *Virginia Tech, Blacksburg*.

2:45 PM 199 **Effects of supplementing propionibacteria in lactation dairy diets on ruminal fermentation in continuous cultures.**
K. A. Dolecheck*[1], J. M. Vera[1], A. J. Young[1], A. H. Smith[2], V. Fellner[3], and J.-S. Eun[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Danisco USA Inc., Waukesha, WI*, [3]*Department of Animal Science, North Carolina State University, Raleigh*.

3:00 PM 200 **Effect of calf starter form and milk source on growth and intake of dairy calves.**
S. A. McCullough*, T. S. Dennis, and T. D. Nennich, *Purdue University, West Lafayette, IN*.

3:15 PM **Break**

3:30 PM 201 **Effect of a mannanoligosaccharide (Bio-Mos) on health and growth of Holstein and Jersey calves.**
L. R. Such*, G. D. Hobgood, B. A. Hopkins, and S. Davidson, *North Carolina State University, Raleigh*.

3:45 PM 202 **Predicting early life illness in Holstein heifer calves.**
C. A. Bellmund*, K. C. McRoberts, and D. J. R. Cherney, *Cornell University, Ithaca, NY.*

4:00 PM 203 **Who's listening? The preferred means of communication for Tennessee dairy producers.**
M. E. Conley*, G. M. Pighetti, and P. D. Krawczel, *University of Tennessee, Knoxville.*

4:15 PM 204 **Incorporation of palmitic and stearic acids into plasma lipid fractions of lactating dairy cows.**
S. Schmidt*, C. L. Preseault, J. E. Rico, M. S. Allen, and A. L. Lock, *Michigan State University, East Lansing.*

4:30 PM 205 **Effect of temperature during drying and mechanical extrusion on soybean meal protein in situ degradability and in vitro digestibility.**
B. J. Isenberg*[1], A. N. Hristov[1], D. M. Kniffen[1], C. Lee[1], K. S. Heyler[1], T. W. Cassidy[1], and R. A. Fabin[2], [1]*The Pennsylvania State University, University Park*, [2]*Fabin Bros. Farms, Indiana, PA.*

Animal Behavior and Well-Being
Use of Animal Behavior to Assess Animal Welfare
Chair: Cassandra Tucker, University of California-Davis
Sponsors: ASAS Foundation and EAAP
121C

2:00 PM 206 **Use of animal behavior to assess animal welfare.**
E. A. Pajor*, *Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada.*

2:45 PM 207 **Prevalence of hock, knee and neck injuries, stall dimensions and lying time on Canadian free-stall dairy farms.**
J. C. Zaffino*[1], C. G. R. Nash[1], T. J. DeVries[2], S. J. LeBlanc[1], D. F. Kelton[1], J. Gibbons[3], E. Vasseur[3,5], A. M. de Passillé[3], J. Rushen[3], K. Orsel[4], H. W. Barkema[4], L. Solano[4], G. B. Bond[4], and D. B. Haley[1], [1]*University of Guelph, Department of Population Medicine, Guelph, ON, Canada*, [2]*University of Guelph, Department of Animal and Poultry Science, Guelph, ON, Canada*, [3]*Agriculture and Agri-Food Canada, Agassiz, BC, Canada*, [4]*University of Calgary, Department of Production Animal Health, Calgary, AB, Canada*, [5]*Organic Dairy Research Centre, University of Guelph Alfred Campus, Alfred, ON, Canada.*

3:00 PM 208 **Gradual cessation of milking reduces milk leakage and anticipatory behavior in dairy cows at dry-off.**
G. Zobel*[1], D. M. Weary[1], K. Leslie[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Population Medicine, University of Guelph, Guelph, ON, Canada.*

3:15 PM 209 **Physiological and behavioral responses to bovine respiratory disease.**
R. Toaff-Rosenstein*[1], L. Gershwin[2], A. J. Zanella[3], and C. Tucker[1], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California-Davis, Davis*, [3]*Chair, Animal Health and Welfare, Scottish Agricultural College, Edinburgh, UK.*

3:30 PM **ASAS Early Career Achievement Award: Working to foster the discovery, sharing and application of knowledge concerning the well-being of farm animals.**
A. Johnson, *Iowa State University, Ames.*

4:00 PM 210 **Effect of prepartum grouping strategy on agonistic behavior of dairy cows.**
K. M. Lobeck*, M. I. Endres, P. R. B. Silva, and R. Chebel, *University of Minnesota, St. Paul.*

4:15 PM 211 **Individual differences in calf defense pattern in Red Angus beef cows.**
C. Flörcke*, T. E. Engle, T. Grandin, and M. J. Deesing, *Colorado State University, Fort Collins.*

4:30 PM 212 **Physiologic and behavioral responses of horses to shaded or unshaded pens in a hot, sunny environment.**
K. E. Holcomb*[1], C. L. Stull[1], and C. B. Tucker[2], [1]*University of California at Davis, School of Veterinary Medicine, Population Health & Reproduction, Davis*, [2]*University of California at Davis, Department of Animal Science, Davis.*

4:45 PM 213 **EAAP-ASAS Speaker Exchange Presentation: Effect of a magnesium rich marine extract on behavior, salivary cortisol levels and skin lesions in growing pigs in response to mixing and an out of feed event.**
K. K. M. O'Driscoll*[1], D. Lemos Teixeira[3], D. O'Gorman[2], S. Taylor[2], and L. Boyle[3], [1]*Teagasc, Animal and Bioscience Research Department, Animal & Grassland Research and Innovation Centre, Grange, Dunsany, Co. Meath, Ireland*, [2]*Celtic Sea Minerals, Currabinny, Carrigaline, Co. Cork, Ireland*, [3]*Teagasc, Pig Development Unit, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork, Ireland.*

5:00 PM 214 **EAAP-ASAS Speaker Exchange Presentation: Neophobic reactions to a new flavored feed are overriden by social learning in pigs.**
J. Figueroa*, D. Solà-Oriol, J. F. Pérez, and X. Manteca, *Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

Animal Health II
Chair: Todd Bilby, Texas AgriLife Research and Extension
Sponsors: Elanco Animal Health and Pfizer Animal Health
228AB

2:00 PM 215 **The effect of yeast cell wall supplementation on the physiological and acute phase responses of crossbred heifers to endotoxin challenge.**
N. C. Burdick*[1], T. R. Young[2], J. A. Carroll[1], J. R. Corley[3], R. J. Rathmann[2], and B. J. Johnson[2], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [3]*Lesaffre Feed Additives, Milwaukee, WI.*

2:15 PM 216 **OmniGen-AF supplementation modulates the physiological and acute phase responses of Brahman heifers to an endotoxin challenge.**
N. C. Burdick*[1], J. A. Carroll[1], J. D. Chapman[2], T. H. Welsh[3], R. C. Vann[4], and R. D. Randel[5], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Prince Agri Products, Inc, Quincy, IL*, [3]*Texas AgriLife Research, Texas A&M System, College Station*, [4]*MAFES, Mississippi State University, Raymond*, [5]*Texas AgriLife Research, Texas A&M System, Overton*.

2:30 PM 218 **A description of dairy heifer raising operations in the United States.**
J. E. Lombard*, C. A. Kopral, J. M. Rodriguez, B. A. Wagner, and G. W. Hill, *USDA-APHIS-VS-CEAH, National Animal Health Monitoring System, Fort Collins, CO.*

2:45 PM 219 **Biosecurity practices on dairy heifer raising operations in the United States.**
J. E. Lombard*, C. A. Kopral, J. M. Rodriguez, B. A. Wagner, and G. W. Hill, *USDA-APHIS-VS-CEAH, National Animal Health Monitoring System, Fort Collins, CO.*

3:00 PM 220 **Pre- and postpartum immunomodulatory effects of a dietary supplement on the immune system of dairy heifers.**
V. J. Eubanks*[1], D. J. Hurley[1], L. O. Ely[1], F. M. Kautz[1], S. C. Nickerson[1], N. E. Forsberg[2], Y. Q. Wang[2], K. P. Zanzalari[3], and J. D. Chapman[3], [1]*University of Georgia, Athens*, [2]*OmniGen Research LLC, Corvallis, OR*, [3]*Prince Agri Products Inc., Quincy, IL*.

3:15 PM 221 **Indoor group housing does not influence performance or measures of innate immune activity of Holstein calves during the neonatal, weaning, and commingling periods.**
C. J. Cobb*, D. L. Hanson, M. D. Sellers, A. R. Pepper-Yowell, B. S. Obeidat, and M. A. Ballou, *Texas Tech University, Lubbock.*

3:30 PM 222 **Feed intake, rectal temperature and weight gain in *Bos indicus* crossbred steers challenged with bovine viral diarrhea virus.**
C. A. Runyan*[1], X. Fang[1], E. Downey[1], T. B. Hairgrove[3], J. E. Sawyer[2], J. C. Bailey[1], J. F. Ridpath[4], and A. D. Herring[1], [1]*Texas A&M University, College Station*, [2]*Texas Agrilife Research, College Station*, [3]*Texas Agrilife Extension, College Station*, [4]*USDA-ARS, Ames, IA*.

3:45 PM 223 **Correlations of temperament with titer and hematological responses of crossbred steers challenged with bovine viral diarrhea virus.**
X. Fang*[1], E. Downey[1], C. A. Runyan[1], J. E. Sawyer[4], T. B. Hairgrove[2], J. F. Ridpath[3], C. A. Gill[1], W. Mwangi[1], and A. D. Herring[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Extension, College Station*, [3]*USDA-ARS, Ames, IA*, [4]*Texas AgriLife Research, College Station*.

4:00 PM 224 ***Cis*-9, *trans*-11 conjugated linoleic acid and NF-κB inhibitor pyrrolidine dithiocarbamate decrease prostaglandin production by bovine endometrial cells treated with lipopolysaccharide.**
L. Badinga*, M. S. Gulay, and A. D. Ealy, *University of Florida, Gainesville*.

4:15 PM 225 **Peripartum metabolic, immune, and hematological parameters of Jersey cows diagnosed with periparturient diseases.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], G. Nakagawa[1], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St Paul*, [2]*Department of Animal Science, University of Minnesota, St Paul*.

4:30 PM 217 **Yeast cell wall supplementation alters the performance and physiological response of beef heifers following an immune challenge.**
T. R. Young*[1], N. C. Burdick[2], J. A. Carroll[2], M. A. Jennings[1], J. T. Cribbs[1], R. J. Rathmann[1], J. R. Corley[3], and B. J. Johnson[1], [1]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Lesaffre Feed Additives, Milwaukee, WI*.

Breeding and Genetics
Dairy Cattle Breeding I—Genetic improvement of animal health
Chair: Christian Maltecca, North Carolina State University
Sponsor: Monsanto Co.
125AB

2:00 PM 226 **Genomics of functional traits in dairy cattle.**
N. Vukasinovic*[1], Y. Li[2], J. D. Nkrumah[1], P. Boddhireddy[1], J. Osterstock[1], F. A. Di Croce[1], M. Kelly[2], M. Hvinden[1], D. J. Weigel[3], and S. K. DeNise[1], [1]*Pfizer Animal Genetics, Kalamazoo, MI*, [2]*Pfizer Animal Genetics, Brisbane, Australia*, [3]*Pfizer Animal Health, Kalamazoo, MI*.

2:15 PM 227 **Genomic selection for enhanced immune response to improve dairy health.**
K. Thompson-Crispi*[1], R. Ventura[2,3], F. Schenkel[2], F. Miglior[4,5], and B. Mallard[1], [1]*Department of Pathobiology, Ontario Veterinary College, Guelph, ON, Canada*, [2]*Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [3]*Beef Improvement Opportunities, Guelph, ON, Canada*, [4]*Guelph Food Research Center, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [5]*Canadian Dairy Network, Guelph, ON, Canada*.

2:30 PM 228 **Telomere length assessment of Holstein cows in 10 Pennsylvania dairy herds.**
D. E. Brown*, C. D. Dechow, W. S. Liu, and K. J. Harvatine, *The Pennsylvania State University, University Park*.

2:45 PM 229 **Incidence validation and causal relationship analysis of producer-recorded health event data from on-farm computer systems in the United States.**
K. L. Parker Gaddis*[1], J. P. Cassady[1], J. B. Cole[2], and C. Maltecca[1], [1]*North Carolina State University, Raleigh*, [2]*Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD*.

3:00 PM 230 **Genetic relationships of mastitis, cystic ovaries and lameness with milk yield and somatic cell score in first-lactation Canadian Holstein cows.**
A. Koeck*[1], F. Miglior[2,3], S. Loker[1], D. F. Kelton[4], A. Sewalem[2,3], and F. S. Schenkel[1], [1]*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, ON, Canada*, [2]*Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [3]*Canadian Dairy Network, Guelph, ON, Canada*, [4]*Department of Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada*.

3:15 PM 231 **Genetic relationships among health related fatty acids in milk of Canadian Holsteins.**
G. Bilal*, R. I. Cue, A. F. Mustafa, and J. F. Hayes, *McGill University, Macdonald Campus, Ste-Anne de Bellevue, Quebec, Canada*.

3:30 PM 232 **Crossbreds of Holstein with Jersey and Montbéliarde compared to pure Holsteins for 305-d production and mastitis in a pasture production system.**
B. J. Heins*, L. B. Hansen, A. R. Hazel, J. C. Becker, and E. A. Bjorklund, *University of Minnesota, St. Paul*.

3:45 PM 233 **An update: Responses of production and mastitis to selection for milk yield with a control population in a pasture production system.**
B. J. Heins*, *University of Minnesota, West Central Research and Outreach Center, Morris*.

4:00 PM 234 **Genetic analysis of leukosis incidence in a US Holstein cattle population.**
E. Abdalla*[1], G. J. M. Rosa[1], K. A. Weigel[2], and T. Byrem[2], [1]*Department of Animal Sciences, University of Wisconsin-Madison, Madison*, [2]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [3]*Antel BioSystems Inc., Lansing, MI*.

4:15 PM 235 **Production traits, somatic cell score, and days open of crossbred cows versus pure Holsteins during their first lactation in Italian commercial dairy herds.**
F. Malchiodi*, M. Penasa, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment, University of Padova, Legnaro, Padova, Italy*.

4:30 PM 236 **Birth weight, gestation length, calving-ease and mortality in Holstein, Jersey, and crossbred cows in a pasture-based dairy herd.**
K. Dhakal*, J. Cassady, C. Maltecca, and S. Washburn, *North Carolina State University, Raleigh*.

4:45 PM 237 **Genetic parameters associated with feedlot bovine respiratory disease complex morbidity and mortality.**
B. W. Brigham*[1], C. M. McAllister[1], R. K. Peel[1], R. L. Weaber[2], H. VanCampin[1], G. H. Loneragan[3], J. L. Salak-Johnson[4], C. C. L. Chase[5], J. J. Wagner[1], and R. M. Enns[1], [1]*Colorado State University, Fort Collins*, [2]*Kansas State University, Manhattan*, [3]*Texas Tech University, Lubbock*, [4]*University of Illinois, Urbana*, [5]*South Dakota State University, Brookings*.

5:00 PM 238 **Performance of a German Holstein cattle population under stressful conditions near Benghazi, Libya.**
R. S. Gargoum*[1], S. A. M. Bozrayda[1], and E. Abdalla[2], [1]*Department of Animal Production, University of Benghazi, Benghazi, Libya*, [2]*Department of Animal Sciences, University of Wisconsin-Madison, Madison*.

Companion Animals Symposium
Companion Animal Reproduction: To breed or not to breed?
Chair: Jill Cline, K9Crazy Consulting
Sponsors: Hill's Science Diet, Procter and Gamble, and Purina
123

2:00 PM **Introduction**

2:05 PM 239 **Canine and feline reproductive biology 101.**
M. Kutzler*, *Oregon State University, Corvallis*.

2:40 PM 240 **Companion animal reproduction and nutrition 101.**
D. Greco*, *Nestle Purina Petcare*.

3:15 PM 241 **Companion animal population control: Past, present and future.**
S. Zawistowski*, *The American Society for the Prevention of Cruelty to Animals, New York, NY*.

3:50 PM 242 **The role of the domestic cat in endangered species conservation.**
J. Herrick*, *National Foundation for Fertility Research, Lone Tree, CO*.

4:25 PM 243 **Population control in wildlife: Lessons learned.**
J. F. Kirkpatrick*, *Science and Conservation Center, Billings, MT*.

5:00 PM 244 **Obesity is associated with adverse cardiovascular outcomes and insulin resistance in dogs.**
J. L. Adolphe*, T. I. Silver, M. D. Drew, and L. P. Weber, *University of Saskatchewan, Saskatoon, SK, Canada*.

Dairy Foods Symposium
Maximizing Value of Milk Proteins—Manufacture, applications and market opportunities for milk protein concentrate
Chair: Shantanu Agarwal, Dairy Research Institute
Sponsor: Dairy Research Institute
121AB

2:00 PM **Introduction**
S. Agarwal, *Dairy Research Institute, Rosemont, IL*.

2:05 PM 245 **Market trends and opportunities for milk protein concentrates.**
V. Lagrange*, *US Dairy Export Council, Arlington, VA*.

2:35 PM 246 **Impact of processing and storage on milk protein concentrate functionality.**
J. A. Lucey*, *University of Wisconsin-Madison, Madison*.

3:15 PM **Break**

3:30 PM 247 **Advances in processing and development of new milk protein products.**
H. Singh*, *Riddet Institute, Massey University, Palmerston North, New Zealand*.

4:00 PM 248 **Manufacture and application of micellar casein concentrates.**
D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

4:30 PM 249 **Performance of spiral wound microfiltration membranes during production of micellular casein concentrate.**
L. E. Metzger*, C. Marella, and P. Salunke, *Midwest Dairy Foods Research Center, South Dakota State University, Brookings*.

Graduate Student Competition:
ADSA Production Division Graduate Student Poster Competition—MS Division
Chair: Matthew Waldron, University of Missouri
222C

2:00 PM 250 **Neutrophil function in the transition period and reproductive tract health in dairy cows.**
J. A. M. Wittrock*, T. F. Duffield, D. Bienzle, and S. J. LeBlanc, *University of Guelph, Guelph, ON, Canada*.

2:15 PM 251 **Effects of intrauterine infusion with *E. coli* lipopolysaccharide on systemic and local inflammatory and immune response.**
J. G. N. Moraes*[1], P. R. B. Silva[1], L. G. D. Mendonça[1], J. Silva[1], M. A. Ballou[2], K. N. Galvão[3], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*, [2]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [3]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

2:30 PM 252 **Effects of fresh-cow diseases on reproduction in a large commercial dairy herd.**
R. P. Tollefsrud*[1], R. L. Larson[1], H. M. Scott[1], G. A. Hanzlicek[1], and D. E. Little[2], [1]*Kansas State University, Manhattan*, [2]*DairyNet Incorporated, Brookings, SD*.

2:45 PM 253 **Using temperature-sensing reticular boluses to aid in the detection of disease in dairy cows.**
A. E. Adams*, F. J. Olea-Popelka, and I. N. Roman-Muniz, *Colorado State University, Fort Collins*.

3:00 PM **Break**

3:15 PM 254 **Optimization of methods for the detection of *Mycobacterium avium* ssp. *paratuberculosis* in milk and colostrum of naturally infected dairy cows with Johne's disease.**
L. Bradner*[1], S. Robbe-Austerman[2], D. Beitz[1], and J. Stabel[3], [1]*Iowa State University, Ames*, [2]*USDA-APHIS, National Veterinary Services Laboratory, Ames, IA*, [3]*USDA-ARS, National Animal Disease Center, Ames, IA*.

3:30 PM 255 **Effects of transient silage DM concentration variation on dairy cows.**
L. R. McBeth*[1], W. P. Weiss[1], N. R. St-Pierre[1], and D. E. Shoemaker[2], [1]*The Ohio State University, Wooster*, [2]*Ohio State University Extension, Wooster*.

3:45 PM 256 **Development of a merit-based genetic selection index for dairy grazing systems.**
K. D. Gay*, N. J. Olynk, T. D. Nennich, A. P. Schinckel, and M. M. Schutz, *Purdue University, West Lafayette, IN*.

4:00 PM 257 **Effects of stocking rate, supplement strategy and breed in a pasture-based automatic milking system.**
C. Nieman*, S. Utsumi, D. K. Beede, and J. Rowntree, *Michigan State University, East Lansing*.

Graduate Student Competition:
CSAS Student Competition II
Chair: Greg Penner, University of Saskatchewan
Sponsor: Canadian Society of Animal Science
223

2:00 PM 788 **Performance of cattle fed diets based on blended by-product pellets varying in rumen available energy and protein content.**
M. G. Zenobi*[1], P. Yu[1], D. A. Christensen[1], P. G. Jefferson[1,2], H. A. Lardner[1,2], and J. J. McKinnon[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada*.

2:15 PM 469 **Identification of single nucleotide polymorphisms for feed efficiency and performance in crossbred beef cattle.**
M. K. Abo-Ismail*[1], G. Vander Voort[1], E. J. Squires[1], K. C. Swanson[1,2], J. Thomson[3], B. Karisa[3], G. Plastow[3], S. Moore[3], and S. P. Miller[1,3], [1]*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, ON, Canada*, [2]*Animal Sciences Department, North Dakota State University, Fargo*, [3]*Faculty of Agricultural, Life and Environmental Sciences, University of Alberta, Edmonton, AB, Canada*.

2:30 PM 549 **Assessing how RFI classification in the growing phase predicts RFI classification in the finishing phase.**
D. Johns*, G. Vander Voort, C. Campbell, M. Quinton, and I. Mandell, *Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

2:45 PM 405 **Effects of method of forage finishing and cattle breed on growth performance, carcass characteristics, meat quality, and fatty acid composition.**
L. Shepherd*[1], R. Berthiaume[2], C. Lafreniere[3], C. Campbell[1], L. Pivotto[1], and I. Mandell[1], [1]*Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Agriculture & Agri-Food Canada, Kapuskasing, ON, Canada*.

3:00 PM 400 **Effect of rumen degradable energy source on performance and forage intake of steers grazing stockpiled crested wheatgrass pasture.**
F. Anez*[1], J. J. McKinnon[1], H. A. Lardner[1,2], G. B. Penner[1], and P. G. Jefferson[1,2], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada*.

3:15 PM 542 **Effect of maturity on the yield and in situ digestibility of whole-crop cereals.**
C. L. Rosser*[1], A. Beattie[1], H. C. Block[2], J. J. McKinnon[1], H. A. Lardner[1,3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Agriculture and Agri-Food Canada, Brandon, MB, Canada*, [3]*Western Beef Development Centre, Humbolt, SK, Canada*.

3:30 PM 418 **Effect of carbohydrate conformation in hulless barley *(Hordeum vulgare* L.) on in situ rumen and in vitro intestinal nutrient availability.**
L. Yang*[1,3], J. McKinnon[1,3], D. Christensen[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, SK, Canada*.

3:45 PM 152 **Liver gene expression patterns can explain accumulation of lipid in the liver during the transition period.**
H. R. Khazanehei*, P. Eck, A. Regassa, D. O. Krause, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

Nonruminant Nutrition Symposium
Swine NRC
Chair: Brian Kerr, USDA-ARS
Sponsor: United Soybean Board
222AB

2:00 PM **Introduction**
L. Southern*, *Louisiana State University Agricultural Center*.

2:10 PM **Energy.**
P. Miller*, *University of Nebraska*.

2:30 PM **Amino Acids I.**
L. Adeola*, *Purdue University*.

2:50 PM **Amino Acids II.**
N. Trottier*, *Michigan State University*.

3:10 PM **Minerals and Vitamins.**
M. Lindemann*, *University of Kentucky*.

3:30 PM **Modeling.**
K. de Lang*, *University of Guelph*.

3:50 PM **Ingredient Data Base.**
L. Southern*, *Louisiana State University Agricultural Center*.

4:05 PM **Open Question and Discussion**

Physiology and Endocrinology
Estrous Cycle Manipulation—Beef
Chair: Robert A. Cushman, USDA-ARS U.S. Meat Animal Research Center
122C

2:00 PM 258 **Mean and basal LH concentrations increased in peri-puberal beef heifers during early exposure to androgenized steers.**
C. Fiol*[1], N. Curbelo[2], G. Larraz[2], L. de Melo Menezes[3], and R. Ungerfeld[2], [1]*Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [2]*Departamento de Fisiología, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*, [3]*Universidad de Pelotas, Rio Grande del Sur, Brazil*.

2:15 PM 259 **Plasma progesterone concentration in beef heifers receiving exogenous glucose, insulin, or bovine somatotropin.**
B. I. Cappellozza*[1], R. F. Cooke[1], M. M. Reis[2], F. N. T. Cooke[1], D. W. Bohnert[1], and J. L. M. Vasconcelos[2], [1]*Oregon State University - EOARC, Burns*, [2]*UNESP - FMVZ/DPA, Botucatu, SP, Brazil*.

2:30 PM 260 **Prediction of estrus in beef cows using ruminal temperature.**
B. H. Boehmer* and R. P. Wettemann, *Oklahoma Agricultural Experiment Station, Stillwater*.

2:45 PM 261 **Comparison of three CIDR-based fixed-time AI protocols for beef heifers.**
G. A. Perry*[1], J. K. Grant[1], J. A. Walker[1], G. A. Bridges[2], S. G. Kruse[2], S. Bird[2], K. Heaton[3], R. Arias[4], and S. L. Lake[4], [1]*Department of Animal Science, South Dakota State University, Brookings*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*, [3]*Utah State University, Logan*, [4]*Department of Animal Science, University of Wyoming, Laramie*.

3:00 PM 262 **Ovarian dynamics and AI pregnancy rates with PGF2α administration 2 d prior to the onset of a 5-d CO-Synch + CIDR program in beef cattle.**
L. H. Cruppe*[1], G. A. Bridges[2], M. V. Biehl[3], F. M. Abreu[1], A. D. P. Rodrigues[4], S. G. Kruse[2], M. Maquivar[1], J. L. M. Vasconcelos[4], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Minnesota, Grand Rapids*, [3]*University of Sao Paulo, Piracicaba, SP, Brazil*, [4]*Sao Paulo State University, Botucatu, SP, Brazil*.

3:15 PM 263 **Efficacy of a new, once-used, or twice-used CIDR in a 5-day CO-Synch + CIDR estrous synchronization protocol in suckled beef cows.**
P. J. Gunn*[1], R. P. Lemenager[1], L. A. Horstman[2], and G. A. Bridges[3], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*Department of Veterinary Clinical Sciences, Purdue University, West Lafayette, IN*, [3]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

3:30 PM 264 **Fixed-time AI in lactating beef cows after GnRH on day 9 of a 14-d CIDR.**
R. L. Giles*[1], R. K. Peel[1], J. T. French[1], P. E. Repenning[1], J. K. Ahola[1], J. C. Whittier[1], and G. E. Seidel[2], [1]*Department of Animal Sciences, Colorado State University, Fort Collins*, [2]*Department of Biomedical Sciences, Colorado State University, Fort Collins*.

3:45 PM 265 **Comparison of long-term CIDR-based protocols to synchronize estrus and ovulation prior to fixed-time artificial insemination in postpartum beef cows.**
N. T. Martin*, J. M. Thomas, J. M. Nash, D. A. Mallory, M. R. Ellersieck, S. E. Poock, M. F. Smith, and D. J. Patterson, *University of Missouri, Columbia*.

4:00 PM 266 **Determination of concentrations of anti-Müllerian hormone at estrus during a synchronized and a natural bovine estrous cycle.**
K. Pfeiffer*, L. Jury, and J. Larson, *Mississippi State University, Mississippi State*.

4:15 PM 267 **Effect of time of insemination relative to ovulation on pregnancy rate of Nelore cows submitted to TAI protocols.**
M. Maturana Filho, R. Germano de Rezende, J. R. Naves*, G. A. Fonseca, T. K. Nishimura, V. B. Nunes, and E. H. Madureira, *FMVZ/USP, Pirassununga, SP, Brazil*.

Production, Management and the Environment
Beef, Sheep, Swine
Chair: Shane Gadberry, University of Arkansas
127C

2:00 PM 268 **Substituting ground redberry juniper leaves and stems for oat hay in lamb feedlot diets: Growth performance, serum urea nitrogen, serum insulin-like growth factor-1, and wool characteristics.**
T. R. Whitney*[1], C. D. Swening[1], J. P. Muir[2], C. J. Lupton[1], and W. C. Stewart[1], [1]*Texas AgriLife Research, San Angelo*, [2]*Texas AgriLife Research, Stephenville*.

2:15 PM 269 **Dietary betaine improves physiological responses in sheep under chronic heat load in a dose dependent manner.**
K. DiGiacomo*, S. Simpson, B. J. Leury, and F. R. Dunshea, *Melbourne School of Land and Environment, The University of Melbourne, Parkville, Vic, Australia*.

2:30 PM 270 **Evaluation of body temperature and sweating rate of Senepol and crossbred heifers in the tropics.**
R. W. Godfrey*[1], A. J. Weis[1], P. E. Hillman[2], K. G. Gebremedhin[2], C. N. Lee[3], and R. J. Collier[4], [1]*University of the Virgin Islands, St Croix*, [2]*Cornell University, Ithaca, NY*, [3]*University of Hawaii, Manoa*, [4]*University of Arizona, Tucson*.

2:45 PM 271 **Evaluation of body temperature and sweating rate of Senepol cows in the tropics.**
R. W. Godfrey*[1], A. J. Weis[1], P. E. Hillman[2], K. G. Gebremedhin[2], C. N. Lee[3], and R. J. Collier[4], [1]*University of the Virgin Islands, St Croix, VI*, [2]*Cornell University, Ithaca, NY*, [3]*University of Hawaii, Manoa*, [4]*University of Arizona, Tucson*.

3:00 PM 272 **Variation in skin surface temperature in different body parts of pigs in response to varying air temperatures.**
A. Sapkota* and J. J. McGlone, *Pork Industry Institute, Texas Tech University, Lubbock*.

3:15 PM 273 **Routine exercise of feedlot cattle: Implications for stress response, productivity, and beef quality.**
N. Miller*, B. Gerlach, H. Glynn, K. Miller, C. van Bibber, L. Edwards-Calloway, J. Drouillard, and T. Houser, *Kansas State University, Manhattan*.

3:30 PM 274 **Effects of different implant management options on performance of pre and post weaned calves.**
H. B. Jones*[1], J. D. Rivera[1], and R. C. Vann[2], [1]*MAFES South Mississippi Branch Experiment Station, Poplarville*, [2]*MAFES Brown Loam Branch Experiment Station, Raymond, MS*.

3:45 PM 275 **Comparison of chelated versus inorganic trace minerals on rate and efficiency of gain and pregnancy rates in beef heifers.**
W. A. Whitehurst*[1], J. A. Paterson[1], M. M. Harbac[1], M. K. Petersen[2], G. C. Duff[2], and T. W. Geary[2], [1]*Montana State University Bozeman, Bozeman*, [2]*USDA-ARS Fort Keogh, Miles City, MT*.

4:00 PM 276 **Relationships between postweaning residual feed intake in heifers and efficiency, digestibility, and productivity of Bonsmara cows.**
A. N. Hafla*[1], G. E. Carstens[1], T. D. A. Forbes[2], J. C. Bailey[1], J. T. Walter[1], J. G. Moreno[1], and J. R. Johnson[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, Uvalde*.

Ruminant Nutrition
Beef
Chair: Shawn Archibeque, Colorado State Universiry
131ABC

2:00 PM 277 **Effect of yeast β-glucan and antibiotics on growth and gastrointestinal development in pre-ruminant calves.**
Y. Zhou, Y. Tu*, Q.-Y. Diao, Q. Yun, X.-H. Gao, and L.-H. Zhao, *Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China*.

2:15 PM 278 **Effect incremental levels of exogenous enzyme preparation on extent of ruminal fermentation, nutrient digestibilties and average daily gain in steers.**
H. Gado*[1], A. Z. M. Salem[2], and B. E. Borhami[3], [1]*Department of Animal Production, Faculty of Agriculture, Ain Shams University, Cairo, Egypt*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca Estado de México, México*, [3]*Department of Animal Production, Faculty of Agriculture (El-Shatby), Alexandria University, Alexandria, Egypt*.

2:30 PM 279 **Effect of a blend of castor oil and cashew nut shell liquid on performance, eating pattern, rumen health and carcass quality in Holstein bulls fed high-concentrate rations.**
M. Devant*[1], A. Aris[1], A. Bach[2,1], and J. Torrent[3], [1]*IRTA-Ruminant Production, Animal Nutrition, Management, and Welfare Research Group, Torre Marimon, Caldes de Montbui, Barcelona, Spain*, [2]*ICREA, Barcelona, Spain*, [3]*Oligo Basics USA LLC, Excelsior, MN*.

2:45 PM 280 **Yeast cell wall supplementation alters the performance of beef heifers during the receiving period.**
T. R. Young*[1], N. C. Burdick[2], J. A. Carroll[2], M. A. Jennings[1], J. T. Cribbs[1], R. J. Rathmann[1], J. R. Corley[3], and B. J. Johnson[1], [1]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Lesaffre Feed Additives, Milwaukee, WI*.

3:00 PM 281 **Feedlot performance of Nellore young bulls fed biodiesel coproduct.**
R. L. Oliveira*[1], C. H. da Cruz[1], N. B. de Santana Filho[2], W. G. Cerutti[3], C. A. dos Santos Dias[2], E. I. de Souza Costa[1], O. L. Ribeiro[1], A. G. Leão[1], M. C. A. Santana[1], and A. A. Pinheiro[1], [1]*Universidade Federal da Bahia, Salvador, Brazil*, [2]*Universidade Federal do Recôncavo Baiano, Cruz Das Almas, Brazil*, [3]*Universidade Federal de Santa Maria, Santa Maria, Brazil*.

3:15 PM 282 **Effect of corn oil or corn protein supplementation on performance and rumen fermentation characteristics of feedlot lambs consuming a 90% concentrate diet containing 30% DDGS.**
C. L. Shelley*, M. Pimienta, J. Caballero, J. Browne-Silva, S. L. Lodge-Ivey, and S. A. Soto-Navarro, *New Mexico State University*.

3:30 PM 283 **Prospects of raising Sahiwal cow calves for veal production under tropical environment.**
S. A. Bhatti*[1], K. Nazir[1], M. J. Basra[2], M. S. Khan[3], M. Sarwar[1], and M. A. I. Mughal[2], [1]*Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Punjab, Pakistan*, [2]*Livestock and Dairy Development Department, Punjab, Lahore, Pakistan*, [3]*Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Punjab, Pakistan*.

Ruminant Nutrition
Dairy Production II
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2:00 PM 284 **Effect of diet composition and incubation time on feed indigestible NDF concentration in dairy cows.**
S. J. Krizsan* and P. Huhtanen, *Swedish University of Agricultural Sciences, Department of Agricultural Research for Northern Sweden, Umeå, Sweden*.

2:15 PM 285 **Effect of corn snaplage on lactation performance of Holstein dairy cows.**
M. S. Akins*[1], M. Digman[2], and R. D. Shaver[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*U.S. Dairy Forage Research Center, Madison, WI.*

2:30 PM 286 **Dry heat popping of sorghum grain to increase ruminal starch digestion in dairy cattle.**
A. R. Anstis[1], D. G. Barber[1], E. Raffrenato*[2,3], and D. P. Poppi[2], [1]*Agri-Science Queensland, Department of Employment, Economic Development and Innovation, Lawes, Queensland, Australia*, [2]*School of Agriculture and Food Sciences, The University of Queensland, Gatton, Queensland, Australia*, [3]*Department of Animal and Wildlife Sciences, University of Pretoria, Pretoria, Gauteng, South Africa*.

2:45 PM 287 **Daily methane emission profile in Holstein heifers fed rice straw.**
G. D. Cruz*[1], P. H. Hai[2], S. Polyorach[3], N. Anantassok[3], P. Beelen[4], H. D. Rosa[5], and E. Kebreab[1], [1]*University of California, Davis*, [2]*Institute of Agricultural Science for Southern Vietnam, Hochiminh City, Vietnam*, [3]*Khon Kaen University, Khon Kaen, Thailand*, [4]*Federal University of Alagoas, Rio Largo, Brazil*, [5]*Sao Paulo State University, Botucatu, Brazil*.

3:00 PM 288 **The effects of a two ration feeding regimen on intake, milk production, and rumen fermentation in dairy cows.**
L. W. Rottman, Y. Ying, P. A. Bartell, and K. J. Harvatine*, *Penn State University, University Park.*

3:15 PM 289 **Validation of an acidosis model.**
H. M. Golder*[1,2], W. J. Wales[3], M. J. Auldist[3], A. R. Rabiee[1,2], E. Bramley[4], P. Celi[1], R. King[5], and L. J. Lean[1,2], [1]*University of Sydney, Camden, New South Wales, Australia*, [2]*SBScibus, Camden, New South Wales, Australia*, [3]*Future Farming Systems Research Division, Department of Primary Industries, Ellinbank, Victoria, Australia*, [4]*Murdoch University, School of Veterinary and Biomedical Sciences, Murdoch, Western Australia, Australia*, [5]*Dairy Australia, Southbank, Victoria, Australia*.

3:30 PM 290 **Evaluation of two versions of a mechanistic, metabolic model including bacterial pools, to describe FA flux, pH and milk fat in cattle on various pasture supplementation feeding strategies.**
J. McNamara*[1], W. Wales[2], and M. Auldist[2], [1]*Washington State University, Pullman*, [2]*DPI Ellinbank, Ellinbank, Victoria, Australia*.

3:45 PM 291 **Multi-component versus one-component analysis: A different way of assessing the effect of TMR chemical composition on milk, fat, and protein yield individual lactation curves.**
M. Caccamo*[1], R. F. Veerkamp[2], G. Licitra[1,3], R. Petriglieri[1], F. La Terra[1], A. Pozzebon[1], and J. D. Ferguson[4], [1]*1CoRFiLaC, Regione Siciliana, Ragusa, Italy*, [2]*WageningenUR Livestock Research, Animal Breeding and Genomics Centre, Lelystad, the Netherlands*, [3]*Catania University, DISPA, Catania, Italy*, [4]*University of Pennsylvania, PA*.

4:00 PM 292 **Intestinal digestibility of long chain fatty acids in lactating dairy cattle: A meta-analysis.**
J. C. Ploetz* and A. L. Lock, *Michigan State University, East Lansing*.

4:15 PM 293 **Effect of replacing dietary soybean meal with canola meal on production of lactating dairy cows.**
G. A. Broderick*[1], A. P. Faciola[2], L. Nernberg[3], and D. Hickling[3], [1]*U.S. Dairy Forage Research Center, Madison, WI*, [2]*University of Wisconsin, Madison*, [3]*Canola Council of Canada, Winnipeg, MB, Canada*.

4:30 PM 294 **Milk yield and composition of dairy cows fed diets combining pasture and total mixed ration.**
A. Mendoza[1,2], C. Cajarville[3], E. de la Quintana[1], M. E. Garmendia[1], E. Mutuberría[1], E. de Torres[4], and J. L. Repetto*[1], [1]*Facultad de Veterinaria, Departamento de Bovinos, Montevideo, Uruguay*, [2]*Instituto Nacional de Investigación Agropecuaria, Programa de Producción de Leche, Colonia, Uruguay*, [3]*Facultad de Veterinaria, Departamento de Nutrición Animal, Montevideo, Uruguay*, [4]*Facultad de Veterinaria, Campo Experimental N°2, Libertad, Uruguay*.

4:45 PM 295 **Effects of dietary fiber source on lactation performance, nutrient digestion, and rumen microbial protein synthesis in early-lactating dairy cows.**
W. Zhu*, Y. Fu, B. Wang, Y. M. Wu, and J. X. Liu, *Institute of Dairy Science, MoE Key Laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*.

WSASAS Symposium
Beef—Beef production in arid environments
Chair: Rick Funston, University of Nebraska
Sponsor: Western Section ASAS
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2:00 PM 296 **Significant research accomplishments applicable to arid environments.**
J. Paterson*, *Montana State University-Bozeman, Bozeman*.

2:35 PM 297 **Cows that fit arid environments.**
B. H. Dunn*, *South Dakota State University, Brookings*.

3:10 PM 298 **Supplementation strategies in arid environments.**
D. W. Bohnert*, *Eastern Oregon Agricultural Research Center, Oregon State University, Burns*.

3:45 PM 299 **Restocking the cow herd.**
D. Peel*, *Oklahoma State University, Stillwater*.

4:20 PM 300 **A systems approach to ranching in arid environments.**
C. P. Mathis*, K. C. McCuistion, and R. D. Rhoades, *King Ranch Institute for Ranch Management, Texas A&M University-Kingsville, Kingsville*.

Tuesday, July 17

POSTER PRESENTATIONS

Animal Behavior and Well-Being
Physiology Emphasis

T1 **Stress affects plasma serotonin, but not tryptophan, in Holstein steer calves.**
A. L. Adams*, T. H. Friend, G. A. Holub, L. R. Berghman, P. K. Riggs, S. M. Garey, C. L. Terrill, and M. J. Carter, *Texas A&M University, College Station*.

T2 **Development of a novel method for measuring stress in beef cattle.**
D. Moya*[1], K. S. Schwartzkopf-Genswein[1], and D. Veira[2], [1]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Agassiz, BC, Canada*.

T3 **Body temperature and panting in feedlot cattle.**
J. B. Gaughan*[1] and T. L. Mader[2], [1]*The University of Queensland, Gatton, Qld, Australia*, [2]*University of Nebraska, Concord*.

T4 **Use of artificial shade during grazing and its effects on body weight at the end of gestation in red deer (*Cervus elaphus*).**
N. G. Mejía, A. Sánchez, A. Paez, and L. Alvarez*, *Facultad de Medicina Veterinaria y Zootecnia, UNAM, México DF, México*.

T5 **Evaluation of on-farm methods assessing locomotor disorders of individual or group housed sows.**
S. Conte*[1], J. Grégoire[1], R. Bergeron[2], S. D'Allaire[3], M.-C. Meunier-Salaün[4], and N. Devillers[1], [1]*Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke QC, Canada*, [2]*University of Guelph, Alfred Campus, Alfred, ON, Canada*, [3]*Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, QC, Canada*, [4]*Institut National de la Recherche Agronomique, UMR1348 Pegase, Saint-Gilles, France*.

T6 **Effectiveness of a non-penetrating captive bolt for the euthanasia of nursing and weaned piglets from 3 to 9 kg.**
T. M. Casey-Trott*[1], S. G. Nykamp[1], P. V. Turner[1], S. T. Millman[2], and T. M. Widowski[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Iowa State University, Ames*.

T7 **Trailer compartment and trip duration affect stress of pigs transported under Canadian conditions.**
Y. M. Seddon*[1], J. Brown[1], T. Crowe[2], R. Bergeron[3], T. Widowski[3], L. Faucitano[4], and H. Gonyou[1,2], [1]*Prairie Swine Centre, Saskatoon, SK, Canada*, [2]*University of Saskatchewan, Saskatoon, SK, Canada*, [3]*University of Guelph, Guelph, ON, Canada*, [4]*Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*.

T8 **Effect of commercial transport by road on prevalence of bruises and meat pH of beef cattle in Brazil.**
M. H. Romero*[1], M. J. R. Paranhos da Costa[2], L. F. Uribe[1], J. Braga[2], and A. Riobueno[2], [1]*Universidad de Caldas, Manizales, Caldas, Colombia*, [2]*La Universidad Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

T9 **The effect of water sprinkling on behavior and core body temperature of market hogs transported during summer.**
J. Fox*[1], T. Widowski[1], S. Torrey[2], E. Nannoni[4], R. Bergeron[5], HW Gonyou[6], JA Brown[6], T. Crowe[7], and L. Faucitano[3], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [3]*Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [4]*University of Bologna, Bologna, Italy*, [5]*University of Guelph, Alfred, ON, Canada*, [6]*Prairie Swine Centre, Saskatoon, SK, Canada*, [7]*University of Saskatchewan, Saskatoon, SK, Canada*.

T10 **Characteristics of bruises in carcasses of commercial zebu cattle in Colombia.**
M. H. Romero*, L. F Uribe, J. A. Sánchez, and H. Mesa, *Universidad de Caldas, Manizales, Caldas, Colombia*.

TUESDAY POSTERS

Animal Health II

T11 **Intravaginal administration of lactic acid bacteria modulated selected plasma metabolites in transition dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

T12 **Indoor versus outdoor housing during the neonatal, weaning, and commingling periods influences innate immune responses in single-housed Holstein calves.**
M. D. Sellers*, C. J. Cobb, D. L. Hanson, A. R. Pepper-Yowell, and B. S. Obeidat, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

T13 **Prevalence of nematodes eggs of the genera *Cooperia*, *Ostertagia*, and *Haemonchus*, before and after treatment of dairy heifers with commercial anthelmintics in commercial dairy farms in Puerto Rico.**
L. López-Soberal*, A. Ruíz-Lugo, Á. González-Sanabria, M. Pagán, and G. Ortiz-Colón, *University of Puerto Rico, Mayagüez Campus*.

T14 **Eicosapentaenoic acid and NF-κB inhibitor pyrrolidine dithiocarbamate attenuate prostaglandin production by bovine endometrial cells treated with lipopolysaccharide.**
L. Badinga*, M. S. Gulay, and A. D. Ealy, *University of Florida, Gainesville*.

T15 **Plane of milk replacer nutrition influences the acute phase response of weaned Jersey calves to an oral *Salmonella typhimurium* challenge.**
D. L. Hanson*[1], M. D. Sellers[1], C. J. Cobb[1], T. J. Earleywine[2], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Lubbock, TX*, [2]*Land O'Lakes, Animal Milk Products Co., Shoreview, MN*.

T16 **Intravaginal probiotics expedited uterine involution in postpartum dairy cows.**
Q. Deng, J. F. Odhiambo, T. Lam, S. M. Dunn, and B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

T17 **Plane of nutrition during the pre- and post-weaned periods influences the innate immune activity of Holstein calves.**
B. S. Obeidat[1], C. J. Cobb[1], M. D. Sellers[1], A. R. Pepper-Yowell[1], D. L. Hanson[1], T. J. Earleywine[2], and M. A. Ballou*[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O'Lakes, Animal Milk Products Co., Shoreview, MN*.

T18 **Pathophysiological response to an oral *Salmonella typhimurium* challenge is influenced by the inoculum dose in newborn colostrum-fed Jersey calves.**
A. R. Pepper-Yowell*, D. L. Hanson, M. D. Sellers, C. J. Cobb, B. S. Obeidat, and M. A. Ballou, *Texas Tech University, Lubbock*.

T19 **Effect of dietary supplementation with *Curcuma longa* (turmeric) during *Eimeria maxima* and *Eimeria tenella* infection of chickens.**
D. K. Kim*[1], H. S. Lillehoj[1], S. H. Lee[1], S. I. Jang[1], M. S. Park[1], and D. Bravo[2], [1]*Animal Parasitic Diseases Laboratory, Animal and Natural Resources Institute, United States Department of Agriculture, Beltsville, MD*, [2]*Pancosma SA, Geneva, Switzerland*.

T20 **Detection of neutralizing antibody titration against rabies virus in dogs.**
A. E. Gazi*[1] and S. Ak[2], [1]*Tarim Ilce Mudurlugu, Bozyazi, Turkey*, [2]*Istanbul University, Veteriner Fak. Microbiology, Istanbul, Turkey*.

T21 **Dairy health records use and management by producers in Washington and Idaho.**
J. R. Wenz*[1], D. A. Moore[1], R. A. Jussaume[1], S. Giebel[1], S. Poisson[1], and C. S. Schneider[2], [1]*Wasington State University, Pullman*, [2]*University of Idaho, Moscow*.

T22 **Effect of method of detection and uterine dimensions in the diagnosis of endometritis in lactating dairy cows.**
R. L. A. Cerri*[1], D. M. Veira[2], A. M. Tabmasbi[3], A. M. L. Madureira[1], S. A. Balios[1], A. H. Souza[4], and J. L. M. Vasconcelos[5], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*Agriculture and Agri-Food Canada, Agassiz, BC, Canada*, [3]*Fedowsi University of Mashhad, Iran*, [4]*University of Wisconsin, Madison*, [5]*Sao Paulo State University, Botucatu, SP, Brazil*.

T23 **Effects of phytoncide supplementation on growth performance, nutrient digestibility, blood profiles, diarrhea score, and fecal microbial shedding in weaning pigs.**
S. Zhang*[1], J. H. Jung[1], H. S. Kim[2], B. Y. Kim[2], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Phylus Co. Ltd., Chungbuk, South Korea*.

T24 **Influence of tannins extract supplementation on feedlot performance of receiving bull-calves naturally infested with gastro intestinal parasites.**
R. Barajas*[1], B. J. Cervantes[2], M. A. Espino[1,3], A. Camacho[1], I. Enriquez[1], C. Barraza[1], L. R. Flores[1], J. J. Lomeli[1], and J. A. Romo[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S. A. de C. V., Culiacán, Sinaloa, México*, [3]*Pronutrient Developers, León, Guanajuato, México*.

T25 **Effects of different levels of fermented oat on growth performance, diarrhea score, fecal microbial shedding, and fecal noxious gas emission in weaning pigs.**
J. P. Wang*, J. P. Lee, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T26 **GPR109A mediates calcium mobilization induced by BHBA in isolated bovine monocytes.**
L. K. Mamedova*[1], E. C. Titgemeyer[1], G. M. Pighetti[2], J. Y. Lu[1], D. H. Hua[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*University of Tennessee, Knoxville*.

T27 **Effects of bacteriophage as an alternative for antibiotics on egg performance, egg quality, fecal microbial shedding, and fecal moisture content in laying hens.**
P. Y. Zhao*, B. R. Lee, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T28 **Effects of bacteriophage as an alternative for antibiotics on growth performance, nutrient digestibility, blood profiles, fecal microbial shedding, diarrhea score, and fecal moisture content in growing pigs.**
S. M. Hong*, H. Y. Baek, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T29 **Effects of bacteriophage as an alternative for antibiotics on growth performance, nutrient digestibility, relative organ weight, blood profiles, and fecal microbial shedding in broilers.**
X. Y. Guo*, J. H. Cho, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T30 **Changes in bacterial communities in bovine milk when comparing low and high somatic cell count quarters using culture independent analysis.**
S. M. Buttram*[1], K. M. Hunt[1], L. K. Fox[2], and M. A. McGuire[1], [1]*Department of Animal and Veterinary Science, University of Idaho, Moscow*, [2]*Department of Animal Science, Washington State University, Pullman*.

T31 **Group housed Holstein bull calves have suppressed innate immune function compared to individually housed calves during weaning.**
L. E. Hulbert*[1], M. S. Calvo[1], M. A. Ballou[2], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Animal and Food Sciences, Texas Tech University, Lubbock*.

T32 **Effects of dietary herb supplementation on growth performance, and appearance of diarrhea in weaning-growing pigs.**
J. P. Wang*, X. Y. Guo, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T33 **Efficacy of a yeast cell wall-derived mycotoxin adsorbent on excretion of aflatoxin B_2 in rats.**
B. Walters*, T. Smith, and M. Crump, *University of Guelph, Guelph, Ontario, Canada*.

T34 **Biotransformation approaches to alleviate the toxic effects induced by Fusarium toxins in swine.**
B. Grenier*[1,3], A. P. Loureiro-Bracarense[2], J. Lucioli[2], A. M. Cossalter[1], W. D. Moll[3], G. Schatzmayr[3], and I. P. Oswald[1], [1]*Institut National de la Recherche Agronomique-ToxAlim, Immuno-Mycotoxicology, Toulouse, France*, [2]*Universidade Estadual de Londrina, Lab Patologia Animal, Londrina, Brazil*, [3]*Biomin Research Center, Tulln, Austria*.

T35 **Impact of cow genetics regarding the osteopontin gene for the immune response to MAP infection.**
C. Thibault[1], P.-L. Dudemaine[2,1], and N. Bissonnette*[1,2], [1]*Agricultre and Agri-Food Canada, Dairy and Swine Research and Development Center, Sherbrooke, Quebec, Canada*, [2]*Université de Sherbrooke, Sherbrooke, Quebec, Canada*.

T36 **Polymorphisms in the osteopontin gene are associated with *Mycobacterium avium* ssp. *paratuberculosis* infection status.**
C. Thibault[1], P.-L. Dudemaine[2], G. Fecteau[3], G. Côté[4,2], O. Labrecque[5], and N. Bissonnette*[1,2], [1]*Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Center, Sherbrooke, QC, Canada*, [2]*Université de Sherbrooke, Sherbrooke, Québec, Canada*, [3]*Faculté de médecine vétérinaire de l'Université de Montréal, Saint-Hyacinthe, QC, Canada*, [4]*Ministère de l'Agriculture, des pêcheries et de l'Alimentation, Québec, QC, Canada*, [5]*Laboratoire d'épidémiosurveillance animale du Québec, Saint-Hyacinthe, QC, Canada*.

T37 **Phytonutrients affect the integrity of the mucus layer and susceptibility to enteric pathogens.**
M. Wlodarska[1], B. B. Finlay[1], and D. Bravo*[2], [1]*University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Pancosma, Geneva, Switzerland*.

Breeding and Genetics
Applications and Methods in Animal Breeding

T38 **Effect of diet and sex on growth of cattle evaluated with non-linear mixed effects models.**
A. Dufek*[1,2] and E. Vacatko[1,2], [1]*Research Institute for Cattle Breeding, Ltd., Rapotin, Czech Republic*, [2]*Agriresearch Rapotin Ltd., Vikyrovice, Czech Republic*.

T39 **The effect of the ancestor on inbreeding depression in milk yield during the first lactation.**
J. Bezdicek*[1], L. Stadnik[2], F. Louda[3], and O. Latal[1], [1]*Agrovyzkum Rapotin Ltd., Vikyrovice, Czech Republic*, [2]*Czech University of Life Sciences Prague, Prague, Czech Republic*, [3]*Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic*.

T40 **Association between milk production and Holstein fraction of upgraded dairy cattle in the Thai tropics.**
S. Koonawootrittriron[1], P. Yodklaew[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University, Bangkok, Thailand*, [2]*University of Florida, Gainesville*.

T41 **Genetic analysis of longevity traits in a Holstein cattle population near Benghazi, Libya.**
E. Abdalla*[1], S. A. M. Bozrayda[2], and I. A. S. Al-Drussi[2], [1]*Department of Animal Sciences, University of Wisconsin-Madison, Madison*, [2]*Department of Animal Production, University of Benghazi, Benghazi, Libya*.

T42 **Ranking of Brown Swiss cattle based on genetic evaluation and grades in judgment at the show ring.**
R. Ramírez-Valverde*, R. Núñez-Domínguez, M. Hernández-León, and M. A. Pablo-Altunar, *Universidad Autónoma Chapingo, Chapingo, Mexico, Mexico*.

T43 **Genetic evaluation of mobility for Brown Swiss dairy cattle.**
G. R. Wiggans[1], J. R. Wright*[1], C. J. Muenzenberger[2], and R. R. Neitzel[2], [1]*Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD*, [2]*Brown Swiss Cattle Breeders Association of the USA, Beloit, WI*.

T405 **Covariance functions, genetic parameters and breeding values for longitudinal ultrasound measures of ribeye area in a Colombian multibreed cattle population.**
C. A. Martinez[1], M. A. Elzo*[2], A. Jimenez[3], C. Manrique[1], and G. Hu[2], [1]*Universidad Nacional de Colombia, Bogota, Colombia*, [2]*University of Florida, Gainesville*, [3]*Colombian Association of Zebu Cattle Breeders, Bogota, Colombia*.

T44 **Considerations in using residual feed intake to define feed efficiency in dairy cattle.**
M. VandeHaar*[1], D. M. Spurlock[2], L. Armentano[3], R. Tempelman[1], K. Weigel[3], and R. Veerkamp[4], [1]*Michigan State University, East Lansing*, [2]*Iowa State University, Ames*, [3]*University of Wisconsin, Madison*, [4]*Wageningen UR, Wageningen, the Netherlands*.

T45 **Contribution of heredity, nutrition and management to milk yield improvement in Shanghai from 1998 to 2010.**
G. L. Liu*[1,2], L. M. Huang[2], C. G. Zhang[1], X. L. Tang[2], and F. S. Fu[2], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd., Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd., Shanghai, China*.

T46 **Multiple trait analysis for milk yield and milking time of Holstein Cows.**
L. El Faro*[1], J. P. Pereira[2], C. C. P. Paz[1], D. A. C. Cruz[3], V. L. Cardoso[1], and A. B. Bignardi[4], [1]*APTA/SAA, Ribeirao Preto, Sao Paulo, Brazil*, [2]*UNESP, Jaboticabal, Sao Paulo, Brazil*, [3]*Instituto de Zootecnia, Nova Odessa, Sao Paulo, Brazil*, [4]*Federal University of Mato Grosso, Rondonopolis, Mato Grosso, Brazil*.

T47 **Milk fat:protein ratio in lactating dairy cows: Effects on conception at first postpartum AI.**
A. H. Souza*[1], L. F. Ferraretto[1], P. D. Carvalho[1], A. R. Dresch[1], L. M. Vieira[1,2], R. A. Cerri[3], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Sao Paulo-VRA, SP 05508, Brazil*, [3]*University of British Columbia, BC, Canada*.

T48 **Prediction of milk and fat production and estimation of breeding values in Holstein dairy cows using neuro-fuzzy and artificial neural networks.**
S. Shahinfar*[1], H. Mehrabani-Yeganeh[1], C. Lucas[2], A. Kalhor[2], A. Kazemian[2], and K. A. Weigel[3], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Center of Excellence: Control and Intelligent Processing, Faculty of Electrical and Computer Engineering, Tehran, Iran*, [3]*Department of Dairy Science, University of Wisconsin-Madison, Madison*.

T49 **New software for sparse matrix factorization and inversion using the supernodal techniques.**
Y. Masuda* and M. Suzuki, *Obihiro University of A & VM, Obihiro, Japan*.

T50 **Genotype × climate interaction in the genetic evaluation for growing traits in Braunvieh cattle.**
L. A. Saavedra-Jiménez[1], R. Ramírez-Valverde[1], R. Núñez-Domínguez*[1], N. López-Villalobos[2], A. Ruíz-Flores[1], and J. G. García-Muñiz[1], [1]*Universidad Autónoma Chapingo, Chapingo, México*, [2]*Massey University, Palmerston North, New Zealand*.

T51 **Relationships among visual scores with feedlot performance and feed efficiency in *Bos indicus* cattle.**
P. H. Cancian*[1], S. L. Silva[1], A. C. Ianni[1], F. R. Manicardi[1], R. C. Gomes[2], and J. B. S. Ferraz[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos / Universidade de São Paulo (FZEA/USP), Pirassununga, São Paulo, Brazil*, [2]*Departamento de Zootecnia / Universidade Estadual de Londrina (UEL), Londrina, Paraná, Brazil*.

T52 **Genetic parameters for carcass traits and weaning weight of composite beef cattle in Brazil.**
J. Ramírez-Díaz[1], T. A. Oliveira[1], A. Zampar[1], S. F. N. Pertile[1], M. A. Elzo[3], J. B. S. Ferraz[2], and G. B. Mourão*[1], [1]*University of São Paulo - ESALQ, Piracicaba, São Paulo, Brazil*, [2]*University of São Paulo - FZEA, Pirassununga, São Paulo, Brazil*, [3]*University of Florida, Gainesville*.

T53 **Influence of maternal genetic effect on the estimation of genetic parameters in post-weaning traits.**
G. A. Oliveira Júnior*[1], F. M. Rezende[1], J. B. S. Ferraz[1], J. P. Eler[1], and G. B. Mourão[2], [1]*Faculdade de Zootecnia e Engenharia de Alimentos - Universidade de São Paulo, Pirassununga, São Paulo, Brazil*, [2]*Escola Superior de Agricultura Luiz de Queiroz - Universidade de São Paulo, Piracicaba, São Paulo, Brazil*.

T54 **Selection for resistance to *Haemonchus contortus* in Santa Ines hair sheep: Comparisons of methods of animal evaluation at countryside and in the laboratory.**
P. S. Oliveira*, J. B. S. Ferraz, J. P. Eler, L. S. Oliveira, C. T. Moncau, M. D. Poleti, B. Silva, F. M. Rezende, G. A. Oliveira Júnior, J. Daniel, and E. C. Mattos, *Faculdade de Zootecnia e Engenharia de Alimentos - Universidade de São Paulo, Pirassununga, São Paulo, Brazil*.

T55 **Test-day model for milk yield of dairy buffaloes in Colombia.**
N. Hurtado Lugo*[1,2], G. M. F. de Camargo[1], R. Aspilcuelta[1], S. Gutiérrez[2], E. Taccari[1], F. M. M. Gil[1], L. G. Albuquerque[1], M. Cerón[2], and H. Tonhati[1], [1]*State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil*, [2]*University of Antioquia, Medellín, Ant, Colombia*.

T56 **Random regression models for test-day milk production for first lactation in Colombian buffaloes.**
N. Hurtado-Lugo*[1,2], M. Cerón[2], R. Aspilcuelta[1], S. Gutierrez[2], L. Albuquerque[1], F. R. Araujo Neto[1], G. M. F. de Camargo[1], and H. Tonhati[1], [1]*Faculty of Agriculture and Veterinary Sciences, State University of São Paulo, Jaboticabal, São Paulo, Brazil*, [2]*Faculty of Agriculture Sciences, University of Antioquia, Medellín, Colombia*.

T57 **Genetic parameters for growth curves in free range chickens.**
G. A. Rovadoscki, F. L. Silva, T. A. Oliveira, A. Zampar, V. J. M. Savino, A. A. D. Coelho, J. Ramírez-Díaz, G. B. Mourão, R. S. Bueno, and G. A. Oliveira Junior*, *University of São Paulo, Piracicaba, São Paulo, Brazil*.

T58 **Comparative analyses of proximate and chemical characteristics of eggs from six indigenous bird species.**
O. T. F. Abanikannda*, A. O. Leigh, and H. Y. Ogungbo, *Lagos State University, Ojo, Lagos, Nigeria*.

T59 **Statistical classification of six indigenous bird species based on external and internal qualities of their eggs.**
O. T. F. Abanikannda*, A. O. Leigh, and O. I. Adekanbi, *Lagos State University, Ojo - Lagos, Nigeria*.

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Cheese and Dairy Products

T60 **Prediction of process cheese functionality using dielectric spectroscopy.**
J. K. Amamcharla* and L. E. Metzger, *Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings*.

T61 **The impact of cation substitution on the flavor of reduced sodium full fat Cheddar cheese.**
E. Kang*[1], M. Kim[1], D. J. McMahon[2], and M. A. Drake[1], [1]*North Carolina State University, Raleigh*, [2]*Utah State University, Logan*.

T62 **A novel approach to produce low fat Cheddar cheese.**
I. Amelia*[1], D. M. Barbano[1], and M. A. Drake[2], [1]*Cornell University, Ithaca, NY*, [2]*North Carolina State University, Raleigh*.

T63 **Effect of grazing on Caciocavallo cheese quality produced in Alta Irpinia.**
G. Esposito*[1,3], A. Di Francia[1], F. Napolitano[2], M. L. Varricchio[1], A. Braghieri[2], and F. Masucci[1], [1]*Dipartimento di Scienze del Suolo, della Pianta, dell'Ambiente e delle Produzioni Animali,Universitá*, [2]*degli Studi di Napoli Federico II, Portici (Napoli), Italy*, [3]*Dipartimento di Scienze delle Produzioni animali, Universitá degli Studi della Basilicata, Potenza, Italy*, [4]*Department of Production Animal Studies, Faculty of Veterinary Science, University of Pretoria, Pretoria, South Africa*.

T64 **Sensory and instrumental measure of temporal volatile release from cheese.**
S. White*, R. E. Miracle, E. A. Foegeding, and M. A. Drake, *North Carolina State University, Raleigh*.

T65 **Light backscatter–Shedding new light on milk coagulation.**
R. Miller, A. Villarroel, B. Krahn, and L. Goddik*, *Oregon State University, Corvallis*.

T66 **Selection criteria for lactic cultures in reduced fat Cheddar cheese.**
A. C. Biswas*, A. N. Hassan, and L. E. Metzger, *Dairy Science Department, South Dakota State University, Brookings*.

T67 **Influence of salt levels, rate of salting and potassium chloride on whey syneresis from Cheddar cheese curd.**
Y. Lu* and D. J. McMahon, *Western Dairy Center, Utah State University, Logan*.

T68 **Effect of different gums supplementation on textural properties of goat milk yogurts.**
Y. W. Park*[1], J. Oglesby[1], S. A. Hayek[2], R. Gyawali[2], and S. Ibrahim[2], [1]*Fort Valley State University, Fort Valley, GA*, [2]*North Carolina A&T State University, Greensboro*.

T69 **The role of different sweeteners on WPI flavor contributions in acidic protein beverages.**
S. White* and M. A. Drake, *North Carolina State University, Raleigh*.

T70 **Concentrations of IGF-1 and IGFBP-3 in several Korean commercial dairy products by immunoradiometric assay.**
S. H. Kang*, D. W. Kim, K. H. Kim, K. S. Kim, and S. C. Baick, *Seoul Dairy Cooperative R&D Center, Shingil-dong, Ansan-si, Kyunggi-do, Republic of Korea*.

T71 **The fatty acid composition of butter and cultured butter with lactobacillus acidophilus added to starter.**
O. Tsisaryk*[1], L. Musij[1], and O. Golubets[2], [1]*Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine*, [2]*Ukrainian State Research and Production Centre for Standardization, Metrology, Certification and Consumer Rights Production, Kiev, Ukraine*.

T72 **Effect of sodium reduction on the survival of *Listeria monocytogenes* and *Bacillus anthracis* in Cheddar cheese.**
E. Hystead*, F. Diez-Gonzalez, and T. C. Schoenfuss, *University of Minnesota, St. Paul*.

T73 **Effects of acidification of milk by glucono-δ-lactone (GDL) on the solubility of milk protein concentrate powder.**
H. Eshpari*[1,2], M. Corredig[1], and P. Tong[2], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*California Polytechnic State University, San Luis Obispo*.

T74 **Influence of ethanol on some characteristics of stirred yogurt.**
B. Mena*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

Extension Education

T75 **Water use efficiency on small-scale irrigated dairy farms in the Mexicali Valley, México.**
L. Avendaño-Reyes*[1], F. D. Alavarez-Valenzuela[1], U. Macías-Cruz[1], A. López-López[1], P. H. Robinson[2], and A. Correa[1], [1]*Universidad Autónoma de Baja California, Valle de Mexicali, Baja California, México*, [2]*University of California, Davis*.

T76 **Complexity graphics for complex issues in animal science.**
M. Boggess*, *USDA-ARS, Beltsville, MD*.

T77 **Factors limiting productive efficiency in small dairies of central Mexico (Aguascalientes State).**
R. R. Lozano-Dominguez*, C. F. Arechiga, R. M. Rincon, and L. M. Escareno-Sanchez, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico*.

T78 **Evaluation of on-farm forage dry matter determined by near infrared spectroscopy.**
M. S. Akins*[1], M. Dobberstein[2], and R. D. Shaver[1], [1]*Department of Dairy Science, University of Wisconsin-Madison*, [2]*Dinamica Generale US, DeKalb, IL*.

T79 **Compliance of small and medium-sized farms in adopting recommendations for improved farm productivity and nutrient utilization.**
L. D. Baker*, R. J. Munson, Z. Dou, D. T. Galligan, J. D. Ferguson, C. F. Ramberg, D. W. Remsburg, and Z. Wu, *University of Pennsylvania, Kennett Square*.

T80 **A collaborative bovine artificial insemination course for students attending a Caribbean veterinary school.**
J. C. Dalton*[1], J. Q. Robinson[2], and J. M. DeJarnette[3], [1]*University of Idaho, Caldwell*, [2]*Ross University School of Veterinary Medicine, Basseterre, St. Kitts*, [3]*Select Sires Inc., Plain City, OH*.

T81 **Repro money: A farmer-directed team-based extension program to improve reproductive performance in Wisconsin dairy herds.**
M. C. Cordoba*, P. M. Fricke, P. L. Ruegg, R. D. Shaver, K. A. Weigel, and V. E. Cabrera, *University of Wisconsin-Madison*.

T82 **Calf-ETERIA: Using calf health and productivity as a template for extension and translation of research information for agriculture.**
V. Bielmann*[1], K. Leslie[1], T. Wright[2], and T. DeVries[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Ontario Ministry of Agriculture, Food and Rural Affairs, Guelph, Ontario, Canada*.

T83 **Comparison of out-of-season estrus synchronization protocols in meat goats.**
N. C. Whitley[1], K. Moulton*[1], R. A. Franco[1], A. E. Cooper[1], and T. J. Conrad-Acuna[2], [1]*Cooperative Extension Program, North Carolina A&T State University, Greensboro*, [2]*North Carolina State University Cooperative Extension, Richmond County, Rockingham*.

T84 **Using soil moisture monitoring to improve irrigation in dairy pastures.**
T. W. Downing*, *Oregon State University, Corvallis*.

Food Safety
Food Safety Advances

T85 **Occurrence of several antibiotic residues in raw milk in ten provinces of China.**
R. W. Han[1,2], J. Q. Wang*[1], N. Zheng[1], X. M. Xu[1], Y. P. Zhen[1], X. Y. Qu[1], P. Sun[1], and Z. N. Yu[3], [1]*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*College of Food Science and Engineering, Qingdao Agricultural University, Qingdao, Shandong, China*, [3]*Haidu College, Qingdao Agricultural University, Laiyang, Shandong, China*.

T86 **Occurrence of aflatoxin M1 in raw milk and UHT milk in China.**
N. Zheng, J. Q. Wang*, R. W. Han, X. M. Xu, Y. P. Zhen, X. Y. Qu, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T87 **Purple prairie clover condensed tannins inhibit *Escherichia coli* through disruption of outer and inner membranes.**
X. L. Liu*[1,2], L. Jin[1], Z. Xu[1], Y. Q. Hao[2], T. A. McAllister[1], and Y. Wang[1], [1]*AAFC, Lethbridge, AB, Canada*, [2]*Inner Mongolia Agricultural University, China*.

T88 **Antimicrobial resistance of *Salmonella enterica* isolated from bulk tank milk and milk filters in the United States.**
J. S. Van Kessel*[1], J. Sonnier[1], S. Zhao[2], and J. S. Karns[1], [1]*Environmental Microbial and Food Safety Laboratory, USDA-ARS, Beltsville, MD*, [2]*Center for Veterinary Medicine, US FDA, Laurel, MD*.

T89 **The effects of tetracycline analogue on prevalence of resistance genes encoded by *Escherichia coli* isolated from feedlot cattle.**
X. Jin[1,2], T. A. McAllister[1], Q. Li[2], and T. W. Alexander*[1], [1]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*.

T90 **Cranberry juice and cranberry fiber are accepted by newly weaned pigs.**
S. D. Eicher*[1], B. T. Richert[2], and M. H. Rostagno[1], [1]*USDA-ARS, West Lafayette, IN*, [2]*Purdue University, West Lafayette, IN*.

T91 **Evaluation of hygienic and sanitary quality of jerked beef commercialized in Salvador city, Bahia, Brazil.**
L. Pereira, M. Silva, W. Costa, and R. Matoso*, *UFBA, Salvador, Bahia, Brazil*.

Forage and Pastures II

T92 **Productive response of finishing young bulls to tannins supplementation.**
M. Velázquez-Martínez[1], O. Hernández-Mendo[1], S. Pérez-Elizalde[1], E. López-Pérez[2], and G. Aranda-Osorio*[2], [1]*Colegio de Postgraduados, Montecillos, Texcoco, México*, [2]*Universidad Autónoma Chapingo, Chapingo, Texcoco, México*.

T93 **Pelibuey sheep productive response to different sources of tannins from forage trees.**
M. Velázquez-Martínez[1], O. Hernández-Mendo[1], S. Pérez-Elizalde[1], E. López-Pérez[2], and G. Aranda-Osorio*[2], [1]*Colegio de Postgraduados, Montecillos, Texcoco, México*, [2]*Universidad Autónoma Chapingo, Chapingo, Texcoco, México*.

T94 **Effects of tannin deactivation by alkaline chemicals on in vitro dry matter and organic matter digestibility in sainfoin (*Onobrychis vicifolia*).**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], and K. Rezayazdi[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T95 **Different rumen environments can cause different degradation profile of dry matter from tanniferous forages.**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], and K. Rezayazdi[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T96 **Comparisons of metabolizable energy estimates for sainfoin (*Onobrychis viciifolia*) from different in vitro and in vivo methods.**
H. Khalilvandi-Behroozyar*[1,2], K. Rezayazdi[1], and M. Dehghan-Banadaki[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T97 **Deactivation of tannins by chemical materials affect ruminal degradability kinetics and metabolizable protein profiles of sainfoin (*Onobrychis vicifolia*).**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], and K. Rezayazdi[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T98 **Correlations between condensed tannins and CNCPS protein fractions of sainfoin.**
H. Khalilvandi-Behroozyar*[1,2], K. Rezayazdi[1], and M. Dehghan-Banadaki[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T99 **Local equations to predict relative feed value for alfalfa in northern Mexico.**
C. Arzola*[1], F. Carrera[1], R. Copado[1], J. Salinas[2], C. Rodriguez[1], O. Ruiz[1], H. Gaytan[1], and A. Corral[1], [1]*Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico*, [2]*Universidad Autonoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico*.

T100 **A simplified procedure for measuring NDF within in situ Dacron bags for corn plant components ground to 6 mm.**
L. J. Nuzback, W. M. Rutherford, and F. N. Owens*, *Pioneer Hi-Bred International, a DuPont Company, Johnston, IA*.

T101 **Digestibility and fecal output prediction using acid-detergent lignin, alkaline-peroxide lignin, and acid-detergent insoluble ash in cattle offered bermudagrass hays of varying quality.**
J. Kanani*[1], D. Philipp[1], K. P. Coffey[1], E. B. Kegley[1], C. P. West[1], S. Gadberry[2], J. Jennings[2], A. Young[1], and R. Rhein[1], [1]*University of Arkansas, Division of Agriculture, Fayetteville*, [2]*University of Arkansas, Division of Agriculture, Little Rock*.

T102 **Diurnal variation in fecal concentrations of indigestible-acid detergent fiber, acid-detergent insoluble ash, and alkaline-peroxide lignin from cattle offered bermudagrass hays of varying quality.**
J. Kanani*[1], D. Philipp[1], K. P. Coffey[1], E. B. Kegley[1], C. P. West[1], S. Gadberry[2], J. Jennings[2], A. Young[1], and R. Rhein[1], [1]*University of Arkansas, Division of Agriculture, Fayetteville*, [2]*University of Arkansas, Division of Agriculture, Little Rock*.

T103 **Evaluating particle size of dry and wet forages using the Ro-Tap separator and Penn State Particle Size Separator method.**
A. D. Kmicikewycz*, D. D. Maulfair, and A. J. Heinrichs, *Pennsylvania State University, University Park*.

T104 **In vitro evaluation of *Miscanthus sacchariflorus* var. as a roughage source for ruminants.**
S. J. Oh*, J. H. Yang, A. R. Lee, C. H. Ryu, J. H. Lim, S. B. Cho, and N. J. Choi, *Department of Animal Science, Chonbuk National University, Jeonju, Korea*.

T105 **Relationship between dynamic degradation and 48-hour degradation of alfalfa hay in Holstein heifers.**
Y. Tian*[1], Z. Cao[1], S. Li[1], and S. Yan[2], [1]*State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*College of Animal Science, Inner Mongolia Agricultural University, Huhhot, China*.

T106 **In vitro organic matter and nitrogen disappearance of Kenyan browse using rumen from goats ingesting grass versus browse.**
A. McEwin*[1], C. Wambui[3], J. P. Muir[2], J. Githiori[4], and B. D. Lambert[1,2], [1]*Tarleton State University, Stephenville, TX*, [2]*Texas Agrilife Research, Stephenville*, [3]*Edgerton University, Kenya*, [4]*International Livestock Research Institute, Kenya*.

T107 **Chemical composition and in vitro gas production of mulberry (*Morus alba* sp.) leaves during regrowth.**
R. A. Gomes[1], M. H. M. R. Fernandes*[1], I. A. M. A. Teixeira[1], K. T. Resende[1], R. A. Reis[1], F. S. B. Rey[2], and D. C. Soares[1], [1]*UNESP/ Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*, [2]*Faculdade de Medicina Veterinaria e Zootecnia/USP, Pirassununga, Sao Paulo, Brazil*.

T108 **Methane-generating potential of *Lotus subbiflorus* 'El Rincón' (LR) and *Lotus uliginosus var. Maku* (LM) harvested in spring.**
M. de J. Marichal*[1], R. Crespi[1], G. Arias[1], S. Furtado[1], M. H. Guerra[1], and L. Piaggio[2], [1]*Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay*, [2]*Secretariado Uruguayo de la Lana, Montevideo, Uruguay*.

T109 **Factors affecting in vitro undigested NDF as estimates of indigestible NDF.**
D. R. Mertens*[1], D. Taysom[2], and B. Steinlicht[2], [1]*Mertens Innovation & Research LLC, Belleville, WI*, [2]*Dairyland Laboratories Inc., Arcadia, WI*.

T110 **Intensive milk production on marandugrass pasture during the rainy season.**
C. A. M. Gomide*[1], A. J. Anjos[2], K. G. Ribeiro[2], E. A. Salgado[1], M. J. F. Morenz[1], and D. S. C. Paciullo[1], [1]*Embrapa Dairy Cattle, Juiz de Fora, Minas Gerais, Brasil*, [2]*UFVJM, Diamantina, Minas Gerais, Brasil*.

T111 **Nutrient digestibility of annual winter forages using different indigestible markers and fecal collection schedules in growing beef heifers.**
C. A. Njombwa, D. D. Henry*, F. M. Ciriaco, V. R. G. Mercadante, K. M. Bischoff, G. H. L. Marquezini, M. Ruiz-Moreno, G. C. Lamb, and N. DiLorenzo, *University of Florida, North Florida Research and Education Center, Marianna*.

T112 **Estimating crude protein and fiber contents in Tifton-85 bermudagrass swards with a new portable chlorophyll meter.**
R. Silva[1], R. Rossiello[2], É. Junior[2], M. Morenz[2], and J. Costa Junior*[3], [1]*UFBA, Salvador, Bahia, Brazil*, [2]*UFRRJ, Seropédica, Rio de Janeiro, Brazil*, [3]*UFRGS, Rio Grande do Sul, Brazil*.

T113 **Mixed silage of potato residue and corn straw affects growth performance and blood biochemical parameters in mutton sheep.**
D. Wang[1,2], J. Q. Wang*[1,2], D. P. Bu[2], Y. D. Zhang[2], P. Sun[2], and L. Y. Zhou[2], [1]*College of Animal Science and Technology, Heilongjiang Bayi Agricultural University, Daqing, Heilongjiang, China*, [2]*Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T114 **Effect of different fat protected sources on milk yield and composition in goats fed on corn silage as based diet in dairy goats.**
C. Vázquez-Fontes*[1], R. Ayala[2], A. Z. M. Salem[2], N. Pescador-Salas[2], L. R. Bernal-Martínez[1], and M. Gonzalez Ronquillo[2], [1]*Universidad Autonoma del Estado de Mexico, Facultad de Ciencias Agrícolas*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Toluca, Estado de Mexico, Mexico*.

T115 **Effect of oil palm (*Eleais guineensis*) effluent plus supplement in the feeding of pigs (Duroc x Pietrain) in the finishing phase during dry season.**
I. Espinoza*, R. Vivas, D. Zambrano, B. Montenegro, G. Muñoz, M. Romero, H. Medina, R. Soria, M. Medina, L. Godoy, and E. Torres, *Universidad Técnica Estatal de Quevedo, Quevedo, Los Ríos, Ecuador*.

T116 **Planting date and crop harvest phenological stage effects on biomass and nutritive value of non-photosensitive forage soybean lines in Puerto Rico.**
A. Aponte, E. Valencia*, and J. Beaver, *University of Puerto Rico, Mayaguez, Mayaguez, PR*.

T117 **Nutritional characterization of pastures used in Colombian dairies with emphasis on fatty acid profile.**
E. A. De La Vega*, J. E. Parales, C. A. Mendoza, M. M. Knowles, G. J. Díaz, M. L. Pabón, and J. E. Carulla, *Universidad Nacional de Colombia, Bogotá, Cundinamarca, Colombia*.

T118 **Effect of sowing density and planting date on the establishment of *Pennisetum purpureum* 'CT-115' in a semiarid region of northern Mexico.**
E. Gutierrez Ornelas*[1,3], J. J. Nava Cabello[1], R. Herrera[2,3], H. Bernal Barragan[1,3], E. Treviño Ramirez[1], and E. Olivares Saenz[1], [1]*Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Nuevo León, México*, [2]*Instituto de Ciencia Animal, San José de Las Lajas, Habana, Cuba*, [3]*Red Internacional de Nutición y Alimentación en Rumiantes, México*.

T119 **Effect of plant density over the productive performance of gliricidia.**
E. N. Muniz*[1], J. H. A. Rangel[1], D. O. Santos[1], C. O. Sá[1], and J. L. Sá[2], [1]*Embrapa Tabuleiros Costeiros, Aracaju, Sergipe, Brazil*, [2]*Embrapa Semi Árido, Petrolina, Pernambuco, Brazil*.

T120 **Assessment of the socio-economic value of goods and services from Manitoba grasslands.**
S. Kulshreshtha[1], M. Undi*[2], J. Zhang[1], M. Ghorbani[1], K. M. Wittenberg[2], A. A. Stewart[3], E. Salvano[4], E. Kebreab[5], and K. H. Ominski[2], [1]*Dept of Bioresource Policy, Business and Economics, University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Department of Animal Science & National Centre for Livestock and the Environment, University of Manitoba, Winnipeg, MB, Canada*, [3]*Shur-Gro Farm Services Ltd., Waskada, MB, Canada*, [4]*Manitoba Agriculture, Food, and Rural Initiatives, Winnipeg, MB, Canada*, [5]*Dept of Animal Science, University of California, Davis*.

Growth and Development II

T121 **Effect of residual feed intake on hypothalamic gene expression and meat quality in heat-stressed Angus-sired cattle.**
C. N. Key*, S. D. Perkins, C. F. Garrett, C. D. Foradori, C. L. Bratcher, L. A. Kriese-Anderson, and T. D. Brandebourg, *Auburn University, Auburn, AL*.

T122 **Effect of residual feed intake on meat quality and hypothalamic gene expression in Angus-sired cattle.**
S. D. Perkins*, C. N. Key, C. F. Garrett, C. D. Foradori, C. L. Bratcher, L. A. Kriese-Anderson, and T. D. Brandebourg, *Auburn University, Auburn, AL*.

T123 **Serum IGFI and hepatic *IGFI* mRNA levels in feedlot cattle infected with bovine respiratory disease.**
C. A. Gifford*[1], B. Wilson[1], C. Maxwell[1], D. M. Hallford[2], and C. R. Krehbiel[1], [1]*Oklahoma State University, Stillwater*, [2]*New Mexico State University, Las Cruces*.

T124 **Relationship between carcass traits and tenderness with residual feed intake and residual average daily gain of Brahman steers.**
F. Rouquette*[1], R. Randel[1], J. Paschal[2], T. Machado[3], and C. Long[1], [1]*Texas AgriLife Research and Extension Center, Overton*, [2]*Texas AgriLife Extension Service, Corpus Christi*, [3]*Texas A&M University-Kingsville, Kingsville*.

T125 **Adipocyte location and anabolic implant alter adipocyte transcriptome in steers.**
S. K. Duckett*, J. W. Long, M. D. Owens, S. E. Ellis, and S. L. Pratt, *Clemson University, Clemson, SC*.

T126 **Subcutaneous adipose tissue gene expression in bulls fed ergot alkaloid-containing fescue seed.**
T. A. Burns*, M. C. Miller, H. M. Stowe, S. M. Calcatera, S. L. Pratt, J. G. Andrae, and S. K. Duckett, *Clemson University, Clemson, SC*.

T127 **Growth performance of Mahabadi goat kids fed different levels organic trivalent chromium.**
A. Emami, A. Zali, M. Ganjkhanlou*, A. Hojabri, and A. Akbari, *University of Tehran, Tehran, Iran*.

T128 **Postweaning feed restriction effects on steer feedlot performance and carcass characteristics.**
R. L. Endecott*[1], B. L. Shipp[2], M. D. MacNeil[2], L. J. Alexander[2], and A. J. Roberts[2], [1]*Department of Animal and Range Sciences, Montana State University, Miles City*, [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*.

T129 **Stearoyl-CoA desaturase (SCD1) localization and intensity in bovine adipose and muscle tissues from implanted and non-implanted steers.**
M. Wilder, S. Safayi, S. E. Ellis, and S. K. Duckett*, *Clemson University, Clemson, SC*.

T130 **Body's growth curve and shape of grazing young bulls, receiving concentrate supplementation with different protein profiles.**
H. J. Fernandes*[1,2], A. G. da Silva[2], M. F. Paulino[2], S. A. Lopes[2], L. O. Tedeschi[4], J. A. G. Azevêdo[3,2], and A. Aguiar[5], [1]*State University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [2]*Federal University of Viçosa, Viçosa, MG, Brazil*, [3]*State University of Santa Cruz, Ilhéus, BA, Brazil*, [4]*Texas A&M University, College Station*, [5]*University of Florida, Gainesville*.

T131 **Mathematical models to describe growth of grazing beef cattle.**
H. J. Fernandes*[1], V. S. Siquiera[1], G. C. Z. N. de Oliveira Coelho[1], A. L. B. Netto[2], K. O. De Barros[1], A. Aguiar[3], L. M. Paiva[1], and J. C. de Souza[2], [1]*State University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [2]*Federal University of Mato Grosso do Sul, Aquidauana, MS, Brazil*, [3]*University of Florida, Gainesville*.

T132 **Dietary fat content and fiber type influence adiposity, lipid oxidative genes and cecal volatile fatty acid concentrations in pigs.**
H. Yan*, V. Almeida, H. Lu, T. Stewart, A. Schinckel, and K. Ajuwon, *Purdue University, West Lafayette, IN*.

T133 **Factors affecting serum IGF-1 and triiodothyronine concentrations as related to fat deposition in feedlot lambs.**
F. A. Rodriguez-Almeida*[1], D. M. Hallford[2], J. A. Grado-Ahuir[1], D. Briones[1], and E. Flores[1], [1]*Universidad Autónoma de Chihuahua, Chihuahua, México*, [2]*New Mexico State University, Las Cruces*.

Lactation Biology II

T134 **Effects of feed restriction and prolactin-release inhibition at drying-off on milk production, metabolism and mammary gland involution.**
S. Ollier*[1], X. Zhao[2], and P. Lacasse[1], [1]*AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*, [2]*Department of Animal Science, McGill University, Sainte-Anne-de-Bellevue, QC, Canada*.

T135 **Effects of recombinant bovine somatotropin on blood flow to the mammary gland in early lactating Holstein cows.**
H. L. Sánchez-Rodríguez*[1], R. C. Youngblood[1], J. E. Curbelo[1], C. Steadman[1], R. C. Vann[2], E. Baravik-Munsell[3], S. T. Willard[1,5], and P. L. Ryan[1,4], [1]*Department of Animal and Dairy Sciences, Mississippi State University*, [2]*Brown Loam Branch Experimental Station, Mississippi State University, Raymond*, [3]*Department of Clinical Sciences, Mississippi State University*, [4]*Department of Pathobiology and Population Medicine, Mississippi State University*, [5]*Department of Biochemistry and Molecular Biology, Mississippi State University*.

T136 **Effects of colostrum versus formula feeding on hepatic glucocorticoid and α_1- and β_2-adrenergic receptors in neonatal calves.**
D. Rohrbeck, J. Steinhoff-Wagner, E. Kanitz, and H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

T137 **Fitness of lactation curve functions to daily and monthly test-day milk data in an Ethiopian dairy cattle population.**
G. Gebreyohannes[1], S. Koonawootrittriron[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University, Bangkok, Thailand*, [2]*University of Florida, Gainesville*.

T138 **Effect of rearing intensity on growth performance and on mammary tissue in Holstein yearling heifers.**
V. Lollivier*[2,1], F. Dessauge[1,2], M. Boutinaud[1,2], and Y. le Cozler[2,1], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

T139 **Obesity and parity affect the mammary gland serotonin (5-HT) system.**
K. E. Merriman*, J. LaPorta, and L. L. Hernandez, *University of Wisconsin, Madison*.

T140 **Cooling of heat-stressed cows during the dry period alters lymphocyte but not mammary gland gene expression.**
S. Tao*[1], E. E. Connor[2], J. W. Bubolz[1], I. M. Thompson[1], B. C. do Amaral[1], M. J. Hayen[1], and G. E. Dahl[1], [1]*University of Florida, Gainesville*, [2]*USDA-ARS, Beltsville, MD*.

T141 **Identification and quantification of milk synthesis and secretion related proteins in bovine milk using a proteomics approach.**
J. Lu*[1,2], S. Boeren[2], J. Vervoort[2], H. van Valenberg[1], S. de Vries[2], J. van Arendonk[3], T. van Hooijdonk[1,4], and K. Hettinga[1], [1]*Dairy Science and Technology Group, Wageningen University, Wageningen, the Netherlands*, [2]*Laboratory of Biochemistry, Wageningen University, Wageningen, the Netherlands*, [3]*Animal Breeding and Genomics Centre, Wageningen University, Wageningen, the Netherlands*, [4]*FrieslandCampina, Amersfoort, the Netherlands*.

T142 **Physiological state but not gestational photoperiod affects weights of liver and thymus in mice.**
P. A. Bentley* and T. B. McFadden, *University of Alberta, Edmonton, Alberta, Canada*.

Meat Science and Muscle Biology II

T143 **Pearson correlation coefficients of multiple methods for measuring water-holding capacity in two pork muscles.**
J. W. Rickard[1], Z. D. Callahan*[1], T. A. Wilmoth[2], C. S. Perkins[1], M. E. Wilson[2], and B. R. Wiegand[1], [1]*University of Missouri, Columbia*, [2]*West Virginia University, Morgantown*.

T144 **Carcass and muscle fiber characteristics of ractopamine fed market pigs with a genetic propensity to deposit significant subcutaneous carcass fat.**
C. S. Perkins*[1], T. A. Wilmoth[2], Z. E. Kerley[1], Z. D. Callahan[1], M. E. Wilson[2], and B. R. Wiegand[1], [1]*University of Missouri, Columbia*, [2]*West Virginia University, Morgantown*.

T145 **Shelf stability and quality of fresh ground pork and pork sausage from pigs fed a combination of dried distillers grains with solubles, ractopamine hydrochloride, and conjugated linoleic acid.**
B. R. Wiegand*, H. L. Evans, Z. D. Callahan, and C. S. Perkins, *University of Missouri, Columbia*.

T146 **Effects of genotype and dietary oil supplementation in pigs. 2. Pork quality and fatty acid composition.**
T. M. Bertol*[1], R. M. L. de Campos[2], J. V. Ludke[1], N. N. Terra[3], E. A. P. de Figueiredo[1], V. L. Kawski[1], A. Coldebella[1], and N. M. Lehr[1], [1]*Embrapa Suínos e Aves, Concórdia, SC, Brazil*, [2]*Fundação Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil*, [3]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*.

T147 **Effects of antibiotics on growth performance, plasma biochemical index and meat quality of growing-finishing pigs.**
X. Wu, Y. Zhang, X. Liu, H. Yang, and Y. Yin*, *Key Laboratory of Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, China*.

T148 **Effects of level of feeding and breed on fatty acid profile of meat from Brazilian native goats.**
L. S. Lopes[1], M. L. Chizzotti*[2], M. M. Ladeira[2], K. C. Busato[2], J. R. R. Carvalho[2], R. T. S. Rodrigues[2], and D. P. D. Lana[3], [1]*State University of Santa Catarina, Chapecó, SC, Brazil*, [2]*Federal University of Lavras, Lavras, MG, Brazil*, [3]*University of São Paulo, Piracicaba, SP, Brazil*.

T149 **Effect of dietary organic chromium on meat quality of Mahabadi goat kids.**
A. Emami, M. Ganjkhanlou*, A. Zali, A. Hojabri, and A. Akbari-Afjani, *University of Tehran, Tehran, Iran*.

T150 **Influence of dietary zilpaterol hydrochloride on finishing performance, carcass characteristics and meat quality of castrated male goats.**
A. Hatefi*[1], A. Towhidi[1], A. Zail[1], M. Ganjkhanlou[1], and A. Plascencia[2], [1]*Department of Animal Science, University of Tehran, Karaj, Alborz, Iran*, [2]*Instituto de Investigaciones en Ciencias Veterinarias, Universidad Autónoma de Baja, CaliforniaMexicali, Baja California, México*.

T151 **Effect of diet linseed supplementation in ewes during gestation and lactation on fatty acid profile of suckling lamb meat.**
A. Nudda*, G. Battacone, M. Lovicu, N. Castanares, R. Boe, A. Fenu, and G. Pulina, *Dipartimento di Agraria, Sezione di Scienze Zootecniche, Università di Sassari, Sassari, Italy*.

T152 **The influences of intermittent feeding zilpaterol hydrochloride during two last week finishing period on growth performance in Japanese quails.**
A. Towhidi*, M. Mohammadi Arekhlo, H. Moravej, and A. Zare Shahneh, *Department of Animal Science, College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*.

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T153 **Dietary *Aspilia africana* leaf on nutrients digestibility and physio-chemical properties of intestinal segments in quails.**
O. O. K. Oko*, E. A. Agiang, and I. E. Iso, *University of Calabar, University of Calabar, Calabar, Cross River State, Nigeria*.

T154 **Effects of egg by-product supplementation on the egg production, nutrient digestibility, egg quality, blood profiles, and fecal noxious gas emission in laying hens.**
L. Yan*, J. P. Wang, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T155 **Economic evaluation of increasing levels of acerola meal replacing corn in the diet of broilers.**
V. C. da Cruz*[1], L. H. Zanetti[1], G. do Valle Polycarpo[2], R. F. de Oliveira[1], A. L. C. Brichi[1], L. C. Carvalho[1], O. J. Sabbag[1], and C. C. do Valle Polycarpo[3], [1]*São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil*, [2]*University of São Paulo, Pirassununga Campus, Pirassununga, São Paulo, Brazil*, [3]*São Paulo State University, São José do Rio Preto Campus, São José do Rio Preto, São Paulo, Brazil*.

T156 **Effects of egg by-product supplementation on growth performance, nutrient digestibility, blood profiles, relative organ weights, and meat quality in broiler.**
H. Y. Baek*, Z. F. Zhang, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T157 **A survey of free and conjugated deoxynivalenol in European feedstuffs.**
S.-T. Tran* and T. K. Smith, *Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

T158 **Effects of sorghum particle size on growth performance and carcass characteristics in finishing pigs.**
C. B. Paulk*, J. D. Hancock, A. C. Fahrenholz, J. M. Wilson, L. J. McKinney, and K. C. Behnke, *Kansas State University, Manhattan*.

T159 **Chemical composition of canola meal, 00-rapeseed meal, and 00-rapeseed expellers.**
T. Maison* and H. H. Stein, *University of Illinois, Urbana*.

T160 **Comparison of growth performance of pigs fed cull chickpeas high in fiber.**
J. M. Uriarte*, J. F. Obregon, H. R. Güemez, J. A. Romo, J. M. Romo, and A. Leon, *Universidad Autonoma de Sinaloa*.

T161 **Standardized ileal digestibility of Illinois bundleflower, low-oligosaccharide soybean meal and conventional soybean meal.**
J. A. Jendza* and S. K. Baidoo, *University of Minnesota, Waseca*.

T162 **Resistant starch content of cereal grains common utilized for pig nutrition.**
G. Giuberti, A. Gallo, M. Rzepus, M. Moschini, and F. Masoero*, *Università Cattolica del Sacro Cuore, Piacenza, Italy*.

T163 **Effects of molasses supplementation on the growth performance, nutrient digestibility, blood characteristics, fecal moisture, and fecal noxious gas emission in growing pigs.**
J. Li*[1], X. Y. Guo[1], D. S. Nam[2], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Nonghyup Feed Co. Ltd., Seoul, South Korea*.

T164 **Effects of fermented corn by *Bacillus subtilis* on the growth performance, nutrient digestibility, fecal microbial shedding, and fecal noxious gas emission in growing pigs.**
J. H. Jung*, H. Y. Baek, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

T165 **Apparent dry matter digestibility and nitrogen balance in pigs fed high fiber diets.**
A. Woldeghebriel*, S. Smith, T. Barios, and B. Pope, *North Carolina A&T State University, Greensboro*.

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T166 **Effects of supplemental zinc amino acid complex on physiology and performance in heat-stressed growing pigs.**
M. V. Sanz-Fernandez*[1], S. C. Pearce[1], L. R. Long[1], N. K. Gabler[1], J. F. Patience[1], M. E. Wilson[2], M. T. Socha[2], R. P. Rhoads[3], and L. H. Baumgard[1], [1]*Iowa State University, Ames*, [2]*Zinpro Corporation, Eden Prairie, MN*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

T167 **Evaluation of the antioxidative capacity of *Lactobacillus plantarum* in vitro and its antioxidative effect on weaned pigs.**
H. F. Ji*, J. Wang, L. Hou, S. X. Wang, D. Y. Zhang, H. Liu, and Y. M. Wang, *Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.

T168 **Evaluation of Oleobiotec in the diet of broilers challenged with *Clostridium perfringens* compared with an antibiotic administered continuously in feed.**
V. Noirot, P. Etienne, M. Champagnac, and D. Eclache*, *Laboratoires Phodé, Terssac, France*.

T169 **Ingestion of a novel galactoglucomannan oligosaccharide-arabinoxylan (GGMO-AX) complex affected growth performance and fermentative and immunological characteristics of broiler chicks challenged with *Salmonella typhimurium*.**
T. A. Faber*[1], R. N. Dilger[1], M. Iakiviak[1], A. C. Hopkins[2], N. P. Price[3], and G. C. Fahey[1], [1]*University of Illinois, Urbana*, [2]*Temple-Inland, Diboll, TX*, [3]*National Center for Agricultural Utilization Research (NCAUR), ARS-USDA, Peoria, IL*.

T170 **Effects of oligosaccharides in a soybean meal-based diet on fermentative and immune responses in broiler chicks challenged with *Eimeria acervulina*.**
T. A. Faber*[1], R. N. Dilger[1], A. C. Hopkins[2], N. P. Price[3], and G. C. Fahey[1], [1]*University of Illinois, Urbana*, [2]*Temple-Inland, Diboll, TX*, [3]*National Center for Agricultural Utilization Research (NCAUR), ARS-USDA, Peoria, IL*.

T171 **Effect of *Lactobacillus gasseri* from chicken origin on the production performance, intestinal flora, and immune function of broiler chickens.**
X.-H. Teng*, X. Li, and J. Li, *College of Animal Science and Technology, Northeast Agricultural University, Harbin, Heilongjiang, China*.

T172 **Effect of supplementing curcumin as feed additive on the performance, biochemical profile, immune response and carcass characteristics in broilers.**
M. Pavani[1], Y. Ramana-Reddy*[1], P. Gopal-Reddy[2], S. R. Sakunthala-Devi[1], T. Monika[1], M. Sudhakar-Reddy[1], and A. Gopal-Reddy[1], [1]*S. V. Veterinary University, Tirupati, Andhra Pradesh, India*, [2]*Tuskegee University, Tuskegee, AL*.

T173 **Effect of a mixture of turmeric and capsicum oleoresins on performance and oocyst excretion of broilers challenged with coccidiosis.**
C. Oguey*[1], V. Brito[2], A. Casarin[3], and M. Forat[3], [1]*Pancosma, Geneva, Switzerland*, [2]*Euronutec, Queretaro, Mexico*, [3]*Instituto Internacional de Investigacion Animal, Queretaro, Mexico*.

T174 **Preventive supplementation with L-arginine and glutamine improved self-renewing of intestinal mucosa in LPS-injected rats.**
X. Wu[1,2], C. Zhang[1,2], Z. Ruan[2], Z. Deng[1], and Y. Yin*[1,2], [1]*State Key Laboratory of Food Science and Technology and College of Life Science and Food Engineering, Nanchang University, China;*, [2]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, China*.

T175 **Effects of different levels of dihydromyricetin from *Ampelopsis grossedentata* in feed on growth performance, immune and antioxidantive activities in *Sarotherodon* sp.**
X. Shu[1], C. Cai[1,2], and Y. L. Yin*[1], [1]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Institute of Biological Resources, Jiangxi Academy of Science, Jiangxi, Nanchang, China*.

T176 **Effects of mild heat stress on growth and carcass characteristics in broiler chickens.**
E. Sucu[1,2], M. V. Sanz-Fernandez[1], S. C. Pearce[1], A. Nayeri[1], G. P. Murugesan[1], R. R. Rhoads[3], M. E. Persia[1], and L. H. Baumgard*[1], [1]*Department of Animal Science, Iowa State University, Ames*, [2]*Department of Animal Science, Uludag University, Bursa, Turkey*, [3]*Department of Animal Science, Virginia Polytechnic Institute and State University, Blacksburg*.

T177 **Effect of season on copper concentration in blood serum from goats in different reproductive status.**
R. Rojo, B. Albarrán-Portillo, A. García-Martínez, J. Cedillo-Monroy, and J. F. Vázquez-Armijo*, *Centro Universitario UAEM Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, México, Mexico*.

T178 **Effects of the beta-2 adrenergic agonist zilpaterol hydrochloride in castrated male goats: Plasma insulin, cortisol, thyroids, triglyceride, and glucose concentrations.**
A. Hatefi*[1], A. Towhidi[1], A. Zail[1], M. Ganjkhanlou[1], and A. Plascencia[2], [1]*Department of Animal Science, University of Tehran, Karaj, Alborz, Islamic Republic of Iran*, [2]*Instituto de Investigaciones en Ciencias Veterinarias, Universidad Autónoma de Baja, California Mexicali, Baja California, México*.

T179 **Effect of water deprivation on the thermoregulatory system of desert goats (*Capra hircus*).**
A. Al-Haidary* and E. Samara, *King Saud University, Riyadh, Saudi Arabia*.

T180 **Comparison of the morphological characters of ovulated follicular waves during synchronized and normal estrous cycle in dairy cattle.**
M. Poorhamdollah*[1], H. Kohram[1,2], A. Z. Shahneh[1], and A. Sadeghi-Sefidmazgi[3], [1]*University of Tehran, Karaj, Tehran, Iran*, [2]*Shahid Chamran University, Ahvaz, Iran*, [3]*Isfahan University of Technology, Isfahan, Iran*.

T181 **Effect of methionine supplementation during postpartum period in dairy cows. II: Embryo quality.**
A. H. Souza*[1], P. D. Carvalho[1], A. R. Dresch[1], L. M. Vieira[1,2], K. S. Hackbart[1], D. Luchini[3], S. Bertics[1], N. Betzold[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madsion*, [2]*University of Sao Paulo-VRA, Brazil*, [3]*Adisseo, Alpharetta, GA*, [4]*U.S. Dairy Forage Research Farm, Prairie du Sac, WI*.

T182 **Lactation and physiological performance in Holstein dairy cows managed under summer heat stress conditions in northwest Mexico.**
P. Luna-Nevarez*[1], C. Leyva-Corona[1], F. Rivera-Acuña[1], J. F. Medrano[2], G. Rincon[2], G. A. Silver[3], D. M. Hallford[3], R. L. Ashley[3], and M. G. Thomas[4], [1]*Instituto Tecnologico de Sonora, Ciudad Obregon, Sonora, Mexico*, [2]*University of California, Davis*, [3]*New Mexico State University, Las Cruces*, [4]*Colorado State University, Fort Collins*.

T183 **Relative quantification of mRNA abundance for LH receptor, angiogenin and p450scc, and determination of hormone levels in dominant follicles and follicular cysts from dairy cows.**
R. M. Villaseñor-González, J. A. Grado-Ahuir*, E. Burrola-Barraza, P. Hernández-Briano, L. E. Escobedo-Morales, and S. A. Quintana-Quintana, *Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

T184 **Hormonal regulation of the hedgehog system in ovarian granulosa and theca cells of cattle.**
L. J. Spicer*, P. Y. Aad, and N. B. Schreiber, *Oklahoma State University, Stillwater*.

T185 **Pregnancy per AI of conventional versus sex sorted semen in dairy heifers subjected to a modified CIDR-PGF2α-GnRH timed-AI protocol.**
J. Howard*[1,2], C. Autran[1], J. Branen[2], K. Carnahan[1], R. Kasimanickam[3], G. Sasser[2], and A. Ahmadzadeh[1], [1]*University of Idaho, Moscow*, [2]*BioTracking LLC, Moscow, ID*, [3]*Washington State University, Pullman*.

T186 **Insulin action on hepatic gene expression in dairy cows with different fat mobilization during early lactation.**
H. M. Hammon*[1], U. Kautzsch[1], C. Weber[1], B. Kuhla[1], M. Röntgen[1], and R. M. Bruckmaier[2], [1]*Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*, [2]*Veterinary Physiology, Vetsuisse Faculty, Bern, Switzerland*.

T187 **Modulation of the metabolic response to an endotoxin challenge in Brahman heifers through OmniGen-AF supplementation.**
N. C. Burdick*[1], J. A. Carroll[1], J. D. Chapman[2], T. H. Welsh[3], R. C. Vann[4], and R. D. Randel[5], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Prince Agri Products Inc., Quincy, IL*, [3]*Texas AgriLife Research, Texas A&M System, College Station*, [4]*MAFES, Mississippi State University, Raymond*, [5]*Texas AgriLife Research, Texas A&M System, Overton*.

T188 **Ultrasound body composition traits response to an endotoxin challenge in Brahman heifers supplemented with OmniGen-AF.**
R. C. Vann*[1], N. C. Burdick[2], J. A. Carroll[2], J. D. Chapman[3], T. H. Welsh[4], and R. D. Randel[5], [1]*MAFES-Brown Loam Experiment Station, Raymond, MS*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Prince Agri Products Inc., Quincy, IL*, [4]*Texas AgriLife Research, Texas A&M University, College Station*, [5]*Texas AgriLife Research, Texas A&M University, Overton*.

T189 **Hepatic expression of mitochondrial respiratory complex genes of pure and crossbred beef cows grazing different herbage allowances of native pastures.**
M. Veyga, A. L. Astessiano, A. Kaitazoff, V. Bassaizteguy, A. I. Trujillo, and M. Carriquiry*, *School of Agronomy, UdelaR, Montevideo, Uruguay*.

T190 **Expression of adipokines and their receptors in adipose tissue of pure and crossbred beef cows grazing different herbage allowances of native pastures.**
A. Kaitazoff*, A. Casal, A. L. Astessiano, M. Veyga, A. I. Trujillo, and M. Carriquiry, *Facultad de Agronomía, UdelaR, Montevideo, Uruguay*.

T191 **Hepatokines in periparturient dairy cows with different extent of body fat mobilization.**
C. Schäff, T. Laeger, H. M. Hammon, M. Röntgen, and B. Kuhla*, *Nutritional Physiology "Oskar Kellner," Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

T192 **Glucose and epinephrine tolerance tests in steers categorized as residual feed intake efficient versus inefficient.**
M. H. Ramos*[1], D. H. Keisler[2], and M. S. Kerley[2], [1]*Research Instituto Flavio Guarani - Rehagro, Belo Horizonte, Minas Gerais, Brazil*, [2]*University of Missouri, Columbia*.

T193 **Insertion of used CIDRs on day 3 to 5 post-insemination in heifers to improve pregnancy rate.**
C. E. Ferguson*[1], B. Pousson[1], H. Nordberg[1], J. Veillon[1], W. Storer[1], and D. J. Kesler[2], [1]*McNeese State University, Lake Charles, LA*, [2]*University of Illinois, Champaign-Urbana*.

T194 **Effect of phase of estrous cycle and fixed-timed insemination on fertility of Criollo cows after a norgestomet or progesterone based treatment.**
A. Quezada-Casasola*[1,2], L. Avendaño-Reyes[1], J. A. Ramírez-Godínez[3], J. R. Núñez-Cuesta[2], F. J. Carlos-Pérez[2], G. Mena-Ortíz[2], and K. Siqueiros[2], [1]*Instituto de Ciencias Agrícolas, Universidad Autónoma de Baja California, Mexicali, B. C., México*, [2]*Universidad Autónoma de Ciudad Juárez, Cd. Juárez, Chihuahua, México*, [3]*Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

T195 **Injection site does not alter effectiveness of beef cattle synchronization.**
C. L. Pickworth*[1,2], D. H. Poole[2], and W. Greene[1], [1]*The Ohio State University, Wooster*, [2]*North Carolina State University, Raleigh*.

T196 **Presynchronizing $PGF_{2\alpha}$ injection before a fixed time artificial insemination (TAI) CO-Synch + CIDR program.**
S. L. Hill*[1], S. L. Pulley[1], H. I. Mellieon[1], K. C. Olson[1], J. R. Jaeger[1], R. M. Breiner[1], G. A. Perry[2], G. C. Lamb[3], and J. S. Stevenson[1], [1]*Kansas State University, Manhattan*, [2]*South Dakota State University, Brookings*, [3]*University of Florida, Marianna*.

T197 **Effects of pregnancy on endometrial gene expression related to amino acid, fatty acid and glucose metabolism in dairy cattle.**
R. L. A. Cerri*[1,2], I. M. Thompson[1], I. H. Kim[3], A. D. Ealy[1], P. J. Hansen[1], C. R. Staples[1], J. L. Li[1], and W. W. Thatcher[1], [1]*University of Florida, Gainesville*, [2]*University of British Columbia, Vancouver, BC, Canada*, [3]*Chungbuk National University, South Korea*.

T198 **Use of bovine pregnancy-associated glycoproteins (bPAGs) to diagnose pregnancy in postpartum Nelore beef cows.**
K. G. Pohler*[1], M. F. Smith[1], T. Martins[2], R. F. G. Peres[3], and J. L. M. Vasconcelos[2], [1]*Division of Animal Sciences, University of Missouri, Columbia*, [2]*FMVZ – UNESP, Botucatu, SP, Brazil*, [3]*Agropecuária Fazenda Brasil, Barra do Garças, MT, Brazil*.

T199 **Fetal to maternal transplacental DNA transfer in female beef cattle.**
D. R. Eborn*, T. G. McDaneld, R. M. Thallman, and S. E. Echternkamp, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

T200 **Nutrient restriction during early pregnancy alters cotyledon arterial vascular reactivity in response to bradykinin in beef cows.**
A. Reyaz*[1], F. Yao[2], M. S. Sane[2], L. E. Camacho[1], C. O. Lemley[1], K. C. Swanson[1], S. T. O'Rourke[2], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, Fargo*, [2]*Department of Pharmaceutical Sciences, North Dakota State University, Fargo*.

T201 **Assessment of serum IGF-1 and β-hydroxybutyrate concentrations on reproductive performance prior to calving and breeding in young beef cows grazing native range.**
J. T. Mulliniks*[1], A. J. Roberts[2], R. C. Waterman[2], T. W. Geary[2], E. J. Scholljegerdes[1], and M. K. Petersen[2], [1]*New Mexico State University, Las Cruces*, [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*.

T202 **Sex comparison of white Fulani cattle blood profile in southwestern Nigeria.**
A. O. Ladokun*[1], O. A. Oyebode[1], and T. O. Ososanya[2], [1]*University of Agriculture, Abeokuta, Ogun, Nigeria*, [2]*University of Ibadan, Ibadan, Oyo, Nigeria*.

T203 **Maternal diet restriction effects on fetal organ weights in beef cows during early pregnancy.**
L. E. Camacho*, C. O. Lemley, T. J. Swanson, K. C. Swanson, and K. A. Vonnahme, *Department of Animal Sciences, North Dakota State University, Fargo*.

T204 **Maternal feed efficiency during gestation is correlated with offspring birth weight and girth in nutrient restricted and control-fed ewes.**
A. M. Meyer*[1], K. A. Vonnahme[2], D. A. Redmer[2], L. P. Reynolds[2], and J. S. Caton[2], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*.

T205 **Nutrient intake during lactation affects performance of beef cows and calf growth.**
K. J. McLean*, B. H. Boehmer, L. J. Spicer, and R. P. Wettemann, *Oklahoma Agricultural Experiment Station, Stillwater*.

T206 **Mineral supplementation associated with Megalac E and/or citrus pulp during timed AI synchronization programs in postpartum Nellore cows.**
M. V. Biehl*[1], A. V. Pires[2,1], I. Susin[2], D. D. Nepomuceno[2], J. R. S. Goncalves[3], R. Sartori[2], F. M. da Rocha[1], L. H. Cruppe[4], J. L. M. Vasconcelos[5], and M. L. Day[4], [1]*University of Sao Paulo, Pirassununga, SP, Brazil*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*, [4]*The Ohio State University, Columbus*, [5]*Sao Paulo State University, Botucatu, SP, Brazil*.

T207 **Different luteolytic doses of $PGF_{2\alpha}$ in Nellore cows on days 5 and 7 of the estrous cycle.**
M. V. C. Ferraz Junior[1], A. V. Pires[2], R. Sartori[2], M. V. Biehl*[1], D. D. Nepomuceno[2], I. Susin[2], E. M. Ferreira[2], F. M. Rocha[1], J. R. S. Goncalves[3], L. H. Cruppe[4], and M. L. Day[4], [1]*University of Sao Paulo, Pirassununga, SP, Brazil*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, PR, Brazil*, [4]*The Ohio State University, Columbus*.

T208 **Relationship of body condition with serum prolactin, antral follicle count, and calving rate of beef cows.**
M. L. Looper*[1], J. D. Patterson[1], B. C. Williamson[1], D. M. Hallford[2], and C. F. Rosenkrans[1], [1]*University of Arkansas, Fayetteville*, [2]*New Mexico State University, Las Cruces*.

T209 **Serum progesterone concentrations in Holstein and Nelore cows after the insertion of two different progesterone devices.**
A. B. Nascimento*[1], P. L. J. Monteiro[1], F. L. M. Silva[1], M. M. Guardieiro[1], A. B. Prata[1], G. P. Nogueira[2], G. B. Mourão[1], M. C. Wiltbank[3], A. V. Pires[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*São Paulo State University, Araçatuba, SP, Brazil*, [3]*University of Wisconsin-Madison, Madison*.

Production, Management and the Environment
Beef, Swine, Sheep

T210 **Management and facility factors that affect mortality in grow-finishing pigs.**
P. S. Agostini*[1,2], A. G. Fahey[2], E. G. Manzanilla[1], J. V. O'Doherty[2], C. de Blas[3], and J. Gasa[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Spain*, [2]*University College Dublin, Belfield, Dublin, Ireland*, [3]*Universidad Politécnica de Madrid, Madrid, Spain*.

T211 **Housing and management factors that affect feed conversion ratio in grow-finishing pigs.**
P. S. Agostini*[1,2], A. G. Fahey[2], E. G. Manzanilla[1], J. V. O'Doherty[2], C. de Blas[3], and J. Gasa[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Spain*, [2]*University College Dublin, Belfield, Dublin, Ireland*, [3]*Universidad Politécnica de Madrid, Madrid, Spain*.

T212 **Management and facility factors that affect the variability of average daily gain in grow-finishing pigs.**
P. S. Agostini*[1,2], A. G. Fahey[2], E. G. Manzanilla[1], J. V. O'Doherty[2], C. de Blas[3], and J. Gasa[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Spain*, [2]*University College Dublin, Belfield, Dublin, Ireland*, [3]*Universidad Politécnica de Madrid, Madrid, Spain*.

T213 **Effects of herb supplementation on growth performance, litter performance, and diarrhea occurrence in lactating sows and piglets.**
J. H. Jung*, J. P. Lee, and I. H. Kim, *Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam, South Korea*.

T214 **Wood to Feed: Diversifying income opportunities by increasing the livestock feeding value of woody plant species.**
T. R. Whitney*[1], J. W. Walker[1], W. C. Stewart[1], R. J. Ansley[2], B. D. Lambert[3], A. F. Cibils[4], C. B. Scott[5], J. L. Johnson[6], T. Bader[7], W. Winters[8], L. O. Tedeschi[9], G. E. Carstens[9], and J. P. Muir[3], [1]*Texas AgriLife Research, San Angelo*, [2]*Texas AgriLife Research, Vernon*, [3]*Texas AgriLife Research, Stephenville*, [4]*New Mexico State University, Las Cruces*, [5]*Angelo State University, San Angelo, TX*, [6]*Texas AgriLife Extension, Stephenville*, [7]*Cedar Beetle, Concan, TX*, [8]*Novas Wood Group, Houston, TX*, [9]*Texas A&M University, College Station*.

T215 **Effect of body size on feed intake and methane emissions from ewes offered fresh ryegrass.**
M. D. Fraser, H. Fleming, V. J. Theobald, and J. M. Moorby*, *Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK*.

T216 **Fifty years of the Wyoming ram test: How have sheep changed?**
D. J. Burton*, P. A. Ludden, R. H. Stobart, and B. M. Alexander, *University of Wyoming, Laramie*.

T217 **The environmental and economic impact of removing growth-enhancing technologies from United States beef production.**
J. L. Capper[1] and D. J. Hayes*[2], [1]*Washington State University, Pullman*, [2]*Iowa State University, Ames*.

T218 **Drought management: Replacing hay with a field pea/co-product supplement fed daily or on alternate days.**
D. G. Landblom*[1] and S. Senturklu[2], [1]*North Dakota State University-Dickinson Research Extension Center, Dickinson*, [2]*Canakkale Onsekiz Mart Universitesi, BMYO, Canakkale, Turkey*.

T219 **Effect of grazing stockpiled perennial forages on beef cow performance, nutrient intake and soil nutrients.**
H. A. Lardner*[1,2] and D. Damiran[1,2], [1]*Western Beef Development Centre, Humboldt, Saskatchewan, Canada*, [2]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

T220 **The environmental, economic and social implications of improving yield and average daily gain in beef production.**
R. R. White* and J. L. Capper, *Washington State University, Pullman*.

T221 **Body development and endocrine relations at puberty in crossbred heifers.**
J. O. J. Barcellos*[1], C. McManus[1], L. C. Canellas[1], E. R. Prates[1], S. R. Menegassi[1], J. Braccini Neto[1], and R. P. Oaigen[2], [1]*Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil*, [2]*Federal University of Para, Belém, PA, Brazil*.

T222 **Effects of prepartum grouping strategy on health, reproductive, and productive parameters of dairy cows.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], A. A. Scanavez[1], G. Nakagawa[1], M. I. Endres[2], J. Fetrow[1], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St Paul*, [2]*Department of Animal Science, University of Minnesota, St Paul*.

T223 **Effects of prepartum grouping strategy on body condition score and metabolic parameters of peripartum dairy cows.**
P. R. B. Silva*[1,2], J. G. N. Moraes[1,2], L. G. D. Mendonça[1], A. A. Scanavez[1], G. Nakagawa[1], M. I. Endres[2], and R. C. Chebel[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, St Paul*, [2]*Department of Animal Science, University of Minnesota, St Paul*.

T224 **Heterosis of productivity rates in the breeding cycle of pure and crossbred Hereford and Angus cattle grazing native pastures at low and high allowances.**
A. C. Espasandin*[1,3], M. do Carmo[1], C. R. López-Mazz[1,2], M. Carriquiry[1], and P. Soca[1], [1]*Udelar School of Agronomy, Departament of Animal and Grass Production, School of Agronomy, Udelar, Uruguay*, [2]*Estación Experimental Bernardo Rosengurtt, Cerro Largo, Uruguay*, [3]*Estación Experimental, Paysandú, Uruguay*.

T225 **Effects of dried distillers grains fed for programmed rate of body weight gain in beef heifers grazing native rangelands prior to breeding on growth and reproductive performance.**
N. P. Miller*, R. C. Dunlap, S. H. Cox, M. M. Marricle, D. M. Hallford, and E. J. Scholljegerdes, *New Mexico State University, Las Cruces*.

T226 **Beef heifer growth and reproductive performance responses to stockpiled fall forage allowances.**
B. L. Bailey*, K. M. Krause, and T. C. Griggs, *West Virginia University, Morgantown*.

T227 **Effects of climate and moon illumination on grazing activity of weaned beef calves during early summer.**
S. Gadberry*[1], W. Whitworth[2], G. Montgomery[2], and K. Simon[1], [1]*University of Arkansas, Little Rock*, [2]*University of Arkansas, Monticello*.

T228 **Riparian management practices in the Manitoba landscape: Off-stream watering systems for beef cattle.**
A. A. Rawluk*[1], G. H. Crow[1], D. M. Veira[2], P. Bullock[1], L. A. Gonzalez[3], and K. H. Ominski[1], [1]*University of Manitoba, Winnipeg, Manitoba, Canada*, [2]*Agriculture & Agri-Food Canada, Agassiz, British Columbia, Canada*, [3]*Commonwealth Scientific and Industrial Research Organisation, Townsville, Queensland, Australia*.

T229 **Effects of injectable trace minerals on the humoral immune response to porcine red blood cell challenge and fertility in beef heifers.**
P. Moriel[1], P. G. M. A. Martins*[1], G. C. Lamb[2], L. J. Havenga[3], and J. D. Arthington[1], [1]*University of Florida, Range Cattle Research and Education Center, Ona*, [2]*University of Florida, North Florida Research and Education Center, Marianna*, [3]*MultiMin USA Inc., Fort Collins, CO*.

T230 **Effect of propionate salt inclusion in postpartum supplementation on young cow reproductive performance.**
J. A. Walker*, G. A. Perry, and K. C. Olson, *South Dakota State University, Brookings*.

T231 **Metabolizable protein supply alters pregnancy and subsequent retention rate during heifer development while grazing dormant winter forage.**
J. T. Mulliniks*[1], D. E. Hawkins[2], K. K. Kane[1], S. H. Cox[1], L. A. Torell[1], E. J. Scholljegerdes[1], and M. K. Petersen[3], [1]*New Mexico State University, Las*, [2]*West Texas A&M University, Canyon*, [3]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*.

T232 **Winter growing rate of gain on subsequent growth of beef steers grazing a subtropical pasture in summer.**
J. I. Arroquy*[1,3], A. E. Fumagalli[1], D. Kuckseva[2], and P. Vispo[2], [1]*INTA EEA Santiago del Estero, Santiago del Estero, Argentina*, [2]*INTA EEA Colonia Benitez, Resistencia, Chaco, Argentina*, [3]*CONICET, Santiago del Estero, Argentina*, [4]*FAyA-UNSE, Santiago del Estero, Argentina*.

T233 **Effects of weaning age and winter development environment on heifer performance.**
N. L. Hojer*[1], M. B. Hubert[2], P. S. Johnson[2], M. H. Price[3], and K. C. Olson[2], [1]*South Dakota State University, Brookings*, [2]*South Dakota State University, Rapid City*, [3]*South Dakota School of Mines & Technology, Rapid City*.

T234 **Blended byproduct feeds in finishing rations on performance, carcass, and fecal characteristics of yearling heifers.**
B. T. Johnson*, C. L. Maxwell, B. K. Wilson, J. J. Wagner, S. L. Roberts, B. W. Woolfolk, C. J. Richards, and C. R. Krehbiel, *Oklahoma State University, Department of Animal Science, Stillwater*.

T235 **Transit effects on fecal *E. coli* O157:H7 prevalence and coliform concentrations in feedlot cattle.**
C. C. Aperce*, C. A. Alvarado, C. L. Van Bibber, K. A. Miller, and J. S. Drouillard, *Kansas State University, Animal Sciences and Industry, Manhattan*.

T236 **Cattle anthelmintic resistance testing and training in North Carolina.**
N. C. Whitley[1], M. L. Alley[2], R. M. Kaplan[3], S. Howell[3], K. Moulton[1], R. A. Franco*[1], and A. E. Cooper[1], [1]*North Carolina A&T State University, Greensboro*, [2]*North Carolina State University, Raleigh*, [3]*University of Georgia, Athens*.

T237 **Effects of temperament on physiological responses, feedlot performance, and carcass characteristics of Nelore steers.**
C. L. Francisco[1,4], A. M. Jorge*[1], F. D. Rezende[2], A. Schmidek[2], J. M. B. Benatti[3], M. H. Faria[2], E. Oba[1], and R. F. Cooke[4], [1]*Universidade Estadual Paulista - FMVZ, Botucatu, SP, Brazil*, [2]*APTA, Colina, SP, Brazil*, [3]*Universidade Estadual Paulista - FCAV, Jaboticabal, SP, Brazil*, [4]*Oregon State University, EOARC, Burns*.

T238 **Skin temperature differentials in relation to residual feed intake in beef cattle using infrared thermography.**
L. S. Martello*[1], P. R. Leme[1], S. da Luz e Silva[1], R. da Costa Gomes[2], C. A. Zotti[1], C. L. Oliveira[1], and T. F. Canata[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo, Pirassununga, SP, Brazil*, [2]*Faculdade de Zootecnia, Universidade Estadual de Londrina, Londrina, PR, Brazil*.

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T239 **Microbial community shifts during anaerobic digestion of finishing cattle manure with and without distillers grains in the diet.**
S. C. Fernando, A. K. Watson, Y. A. Wanniarachchi, T. J. Klopfenstein, G. E. Erickson, J. L. Harding, A. L. Shreck*, C. J. Johnson, and M. M. Klosterman, *University of Nebraska, Lincoln*.

T240 **Effects of crude glycerin on in vitro gas production and VFA profiles in Nellore feedlot steers.**
E. H. C. B. van Cleef*[1,2], J. M. B. Ezequiel[2], A. P. D'Aurea[1,2], A. C. Homem Junior[1,3], F. B. O. Scarpino[1,4], R. M. P. Pardo[5], and E. M. Ferreira[6], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*FAPESP*, [3]*CAPES*, [4]*CNPq*, [5]*Sucre University, Sincelejo, Colombia*, [6]*University of São Paulo, Piracicaba, São Paulo, Brazil*.

T241 **Effect of lipid sources addition on nutrient intake of steers finished at feedlot.**
G. Fiorentini*[1,2], I. P. C. Carvalho[1,2], J. F. Lage[1,2], R. C. Canesin[1,2], C. S. Ribeiro Junior[1,2], and T. T. Berchielli[1,3], [1]*Universidade Estadual Paulista (UNESP) - FCAV, Jaboticabal, SP, Brasil*, [2]*Fundaçao de Amparo à Pesquisa do Estado de Sao Paulo (FAPESP), Sao Paulo, SP, Brazil*, [3]*Instituto Nacional de Ciência e Tecnologia em Ciência Animal (INCT-CA), Brasília, DF, Brazil*.

T242 **Feeding distillers grains as an energy source to gestating and lactating beef heifers: Impact on steer progeny longissimus muscle fatty acid profile.**
P. J. Gunn*[1], G. A. Bridges[2], R. P. Lemenager[1], and J. P. Schoonmaker[1], [1]*Department of Animal Sciences, Purdue University, Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

T243 **Effect of distillers grain supplementation on fescue intake and utilization.**
C. A. Schaeffer*, E. S. Vanzant, J. W. Lehmkuler, and K. R. McLeod, *University of Kentucky, Lexington*.

T244 **Effect of soybean hull level on diet digestibility and growth performance of beef calves.**
J. R. Russell*, M. S. Kerley, and W. J. Sexten, *University of Missouri, Columbia*.

T245 **Ruminal fermentation and blood metabolites of Holstein steers fed diets differing in wheat processing and fat source.**
K. Erjaei, A. Zali, M. Ganjkhanlou*, and M. Dehghan-Banadaky, *University of Tehran, Tehran, Iran*.

T246 **Feedlot performance and fatty acid composition of muscles from Holstein steers fed diets differing in wheat processing and fat source.**
K. Erjaei, A. Zali, M. Ganjkhanlou*, and M. Dehghan-Banadaky, *University of Tehran, Tehran, Iran*.

T247 **Evaluation of the ruminal bacterial diversity of cattle fed diets containing citrus pulp pellets (CP) using bacterial tag-encoded FLX amplicon pyrosequencing (bTEFAP).**
P. R. Broadway*[1], T. R. Callaway[2], J. A. Carroll[3], N. C. Burdick[3], J. R. Donaldson[4], R. J. Rathmann[1], B. J. Johnson[1], J. T. Cribbs[1], L. M. Durso[5], D. N. Miller[5], D. J. Nisbet[2], and T. B. Schmidt[6], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Food and Feed Safety Research Unit, Southern Plains Agricultural Research Center, USDA-Agricultural Research Service, College Station, TX*, [3]*Livestock Issues Research Unit, USDA, Agricultural Research Service, Lubbock, TX*, [4]*Department of Biological Sciences, Mississippi State University, Mississippi State*, [5]*Agroecosystem Management Research Unit, USDA-Agricultural Research Service, Lincoln, NE*, [6]*Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State*.

T248 **Rumen dynamics of neutral detergent fiber in grazing steers supplemented with lipid sources.**
I. P. C. Carvalho*[1,4], T. T. Berchielli[1,3], G. Fiorentini[1,4], E. Detmann[2], L. G. Rossi[1], J. F. Lage[1,4], Y. T. G. Salcedo[1], and C. S. Ribeiro Junior[1,4], [1]*Universidade Estadual Paulista Julio de Mesquita Filho, Jaboticabal, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa*, [3]*INCT/CA member, Brazil*, [4]*FAPESP, Sao Paulo, Brazil*.

T249 **Effects of supplementation with a pressed dried distillers grain block on beef cow performance and hay intake during late gestation.**
C. L. Marshall*[1], J. D. C. Molle[1], J. M. Kern[1], R. A. Vraspir[1], A. N. Scheaffer[2], S. L. Lake[1], and A. M. Meyer[1], [1]*Department of Animal Science, University of Wyoming, Laramie*, [2]*SweetPro LLC, Walhalla, ND*.

T250 **Supplementing urea in beef finishing diets containing 25% modified distillers grains has no influence on cattle performance, but does decrease marbling in yearling steers.**
L. J. Garbel* and B. P. Holland, *South Dakota State University, Brookings*.

T251 **Effects of alternate day feeding of dried distillers grains plus solubles on ruminal ammonia concentration, blood urea nitrogen, nonesterified fatty acids, and insulin-like growth factor I in forage-fed steers.**
S. I. Klein*[1], A. M. Meyer[2], Q. P. Larson[1], J. S. Caton[1], and C. R. Dahlen[1], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Department of Animal Sciences, University of Wyoming, Laramie*.

T252 **Carcass traits of steers finished in feedlot fed crude glycerin.**
J. F. Lage*, T. T. Berchielli, E. San Vito, A. F. Ribeiro, R. A. Silva, E. E. Dallantonia, L. M. Delevatti, B. O. Felipe, M. Machado, P. M. França, and R. A. Reis, *Universidade Estadual Paulista "Júlio de Mesquita Filho," Jaboticabal, São Paulo, Brazil*.

T253 **Performance of Nellore steers receiving protected linseed oil during different periods of feedlot.**
W. Henrique*[1], V. G. Carvalho[2], T. M. Pivaro[2], J. L. V. Coutinho Filho[1], A. A. M. Sampaio[2], E. A. Oliveira[2,3], and B. L. Rosa[2], [1]*Sao Paulo Agency for Agribusiness Tecnhology, Sao Jose Rio Preto, Sao Paulo, Brazil*, [2]*FCAV/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*, [3]*FAPESP Post-doctorate fellowship, Sao Paulo, Sao Paulo, Brazil*.

T254 **Performance of crossbred heifers and steers fed increasing linseed oil levels.**
W. Henrique*[1], B. L. Rosa[2], E. A. Oliveira[2,3], A. A. M. Sampaio[2], T. M. Pivaro[2], A. T. Andrade[2], and V. G. Carvalho[2], [1]*Sao Paulo Agency for Agribusiness Technology, Sao Jose Rio Preto, Sao Paulo, Brazil*, [2]*FCAV/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*, [3]*FAPESP Post-doctorate fellowship, Sao Paulo, Sao Paulo, Brazil*.

T255 **Performance of growing Nellore steers on pasture in the dry season fed crude glycerin.**
E. San Vito*, T. T. Berchielli, J. F. Lage, R. C. Canesin, R. A. Reis, C. S. R. Junior, L. M. Delevatti, M. Machado, E. E. Dallantonia, A. F. Ribeiro, and R. A. Silva, *Universidade Estadual Paulista "Julio de Mesquita Filho," Jaboticabal, São Paulo, Brazil*.

T256 **Palatability of post-extraction algal residue as a protein supplement for cattle.**
M. L. Drewery*, J. E. Sawyer, and T. A. Wickersham, *Texas A&M University, College Station*.

T257 **Protein sources and nitrogen associated with the residual biodiesel glycerin supplements to fattening cattle during the rainy season: performance productive.**
A. J. Neto[1], J. T. Zervoudakis[1], L. da Silva Cabral[1], L. K. H. Zervoudakis*[1], R. L. Galati[1], P. V. R. Paulino[2], L. C. R. P. Silva[1], R. P. da Silva[1], J. Q. Soares[1], and T. de Paulo Trindade[1], [1]*Universidade Federal de Mato Grosso, Cuiabá, Mato Grosso, Brazil*, [2]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

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T258 **Oocyte and embryo quality of dairy cows fed omega 3 and 6 fatty acids sources in the transition period and early lactation.**
J. R. Gandra*, R. D. Mingoti, L. C. Verdurico, R. V. Barletta, J. E. Freitas, C. S. Takiya, T. H. A. Vendramine, R. Gardinal, and F. P. Rennó, *1University of Sao Paulo, Sao Paulo, Brazil*.

T259 **Effects of different PUFAs supplementation during the postpartum periods of early lactating dairy cows. I: Milk production and composition.**
E. Dirandeh[1], A. Towhidi*[1], M. Ganjkhanlou[1], S. Zeinoaldini[1], Z. Ansari Pirsaraei[2], and A. R. Zarenezhad[3], [1]*Department of Animal Science, Faculty of Agricultural Science and engineering, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, Faculty of Animal Science and Fishery, Sari University of Agricultural and Natural Resources, Sari, Mazandaran, Iran*, [3]*Mahdasht Dairy Farm, Sari, Mazandaran, Iran*.

T260 **Effects of lipid and propionic acid infusions on feed intake of lactating dairy cows.**
S. E. Stocks* and M. S. Allen, *Michigan State University, East Lansing*.

T261 **Relationships between ruminal volatile fatty acid concentrations, milk production, digestibility, and milk fatty acid composition in dairy cows.**
A. N. Hristov*[1], K. J. Shingfield[2], P. Huhtanen[3], J. L. Firkins[4], and K. Harvatine[1], [1]*The Pennsylvania State University, University Park*, [2]*MTT Agrifood Research Finland, Jokioinen, Finland*, [3]*Swedish University of Agricultural Sciences, Umeå, Sweden*, [4]*The Ohio State University, Columbus*.

T262 **Occurrence and concentration of mycotoxins, molds and yeasts in total mixed rations from South Dakota and Minnesota dairy farms.**
F. Diaz-Royon*[1], A. Garcia[1], K. F. Kalscheur[1], K. A. Rosentrater[2], J. S. Jennings[3], and K. Mjoun[3], [1]*Dairy Science Department, South Dakota State University, Brookings*, [2]*Department of Agricultural and Biosystems Engineering, Iowa State University, Ames*, [3]*Alltech South Dakota, Brookings*.

T263 **Feed restriction, but not l-carnitine infusion, affects the liver transcriptome with an evident induction of gluconeogenesis and inhibition of energy production and sterol synthesis in mid-lactating dairy cows.**
H. Akbar*, M. Bionaz, D. B. Carlson, S. L. Rodriguez-Zas, R. E. Everts, H. A. Lewin, J. K. Drackley, and J. J. Loor, *University of Illinois, Urbana*.

T264 **A comparison of methods to analyze physical effective factor and physically effective NDF in TMR and orts.**
S. D. Ranathunga*, K. F. Kalscheur, and D. P. Casper, *Dairy Science Department, South Dakota State University, Brookings*.

T265 **Effect of post-ruminal supplementation of phytonutrients on bacterial diversity in feces of dairy cows.**
J. Oh*[1], A. N. Hristov[1], C. Lee[1], K. Heyler[1], T. Cassidy[1], S. Dowd[2], and D. Bravo[3], [1]*The Pennsylvania State University, University Park*, [2]*MR DNA Molecular, Shallowater, TX*, [3]*Pancosma, Geneva, Switzerland*.

T266 **Applicability of the plasma free amino acid dose response approach for determining lysine bioavailability of ruminally protected lysine products.**
N. L. Whitehouse*[1], E. S. Fletcher[1], A. F. Brito[1], and C. G. Schwab[2], [1]*University of New Hampshire, Durham*, [2]*Schwab Consulting LLC, Boscobel, WI*.

T267 **Physiological variables associated with reproductive success in dairy cows with different prepartum feeding strategies.**
F. C. Cardoso*, N. V. L. Serão, and J. K. Drackley, *University of Illinois, Urbana*.

T268 **Plasma responses to intra-ruminal or post-ruminal administration of 2-hydroxy-4-methylthio-butanoic acid and its isopropyl ester in dairy cattle to evaluate rumen escape.**
G. I. Zanton*, S. E. Bettis, and M. Vazquez-Anon, *Novus International, Inc., St. Charles, MO*.

T269 **Casein and fatty acid fractions in milk are affected by parity and nutritional regulated body condition score at the beginning of the transition period in dairy cows under grazing conditions.**
V. Artegoitia*[1,2], A. Meikle[2], L. Olazabal[3], J. P. Damian[2], M. L. Adrien[1], D. A. Mattiauda[1], J. Bermudez[1], A. Torre[3], and M. Carriquiry[1], [1]*Facultad de Agronomía, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [3]*Laboratorio Tecnológico del Uruguay, Montevideo, Uruguay*.

T270 **Arterial amino acid concentrations drives milk yield in postpartum transition dairy cows.**
M. Larsen* and N. B. Kristensen, *Department of Animal Science, Aarhus University, Foulum, Tjele, Denmark*.

T271 **Productive performance of dairy cows fed with omega 3 and 6 fatty acids sources in the transition period and early lactation.**
J. R. Gandra*, L. C. Verdurico, R. D. Mingoti, R. V. Barletta, J. E. Freitas, C. E. Araújo, K. A. Koyama, G. D. Calomeni, E. Ferreira de Jesus, and F. P. Rennó, *University of Sao Paulo, Sao Paulo, Brazil*.

T272 **Effects of 18-carbon fatty acids on triacylglycerol accumulation in bovine mammary epithelial cells in vitro.**
R. L. Cui, J. Q. Wang*, H. Y. Wei, D. P. Bu, X. M. Nan, H. Hu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T273 **Effects of 18-carbon fatty acids on cell proliferation and triacylglycerol accumulation in bovine mammary epithelial cells in vitro.**
R. L. Cui, J. Q. Wang*, H. Y. Wei, D. P. Bu, X. M. Nan, H. Hu, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T274 **Lipopolysaccharide-induced alterations in milk fatty acid composition and mRNA expression of genes related to fatty acid metabolism.**
Y. D. Zhang, J. Q. Wang*, D. P. Bu, T. Hu, X. M. Nan, H. Hu, R. L. Cui, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

T275 **Hepatic expression of GH-IGF axis genes in Holstein cows with different nutritional managements during early lactation.**
A. L. Astessiano*[1], P. Chilibroste[2], M. Fajardo[2], J. Laporta[1], J. Gil[2], D. A. Mattiauda[1], A. Meikle[3], and M. Carriquiry[1], [1]*1School of Agronomy, UDELAR, Montevideo, Uruguay*, [2]*2School of Veterinary Medicine, UDELAR, Paysandú (EEMAC), Uruguay*, [3]*3School of Veterinary Medicine, UDELAR, Montevideo, Uruguay*.

T276 **New discovery on bovine glutathione peroxidase 3.**
H. R. Khazanehei*, P. Eck, and J. C. Plaizier, *University of Manitoba, Winnipeg, MB, Canada*.

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Dairy: Feed additives II
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T277 **Effect of post-ruminal supplementation of phytonutrients on total-tract digestibility, nitrogen losses, and milk production and composition in dairy cows.**
J. Oh*[1], A. N. Hristov[1], C. Lee[1], K. Heyler[1], T. Cassidy[1], and D. Bravo[2], [1]*The Pennsylvania State University, University Park*, [2]*Pancosma, Geneva, Switzerland*.

T278 **Effects of plant extracts on microbial population, methane emission and ruminal fermentation characteristics in in vitro.**
E. T. Kim*[1], K.-S. Min[2], C.-H. Kim[2], S. C. Kim[1], and S. S. Lee[1], [1]*Division of Applied Life Science (BK21 Program), Gyeongsang National University, Jinju, Gyeongsangnamdo, Republic of Korea*, [2]*Hankyong National University, Anseong, Gyeonggido, Republic of Korea*.

T279 **Adding plant oils to dairy goat diets: Changes in milk fatty acids with sampling time.**
A. L. Martínez Marín[1], P. Gómez-Cortés[2], G. Gómez Castro[1], M. Juarez[2], L. M. Pérez Alba[1], M. Pérez Hernández[1], and M. A. de la Fuente*[2], [1]*Universidad de Córdoba, Córdoba, Spain*, [2]*Instituto de Investigación en Ciencias de la Alimentación, Madrid, Spain*.

T280 **Supplementing rumen-protected Met and Lys in low protein diets based on corn distillers grains fed to lactating dairy cows.**
N. E. Lobos*[1], G. A. Broderick[2], and M. J. de Veth[3], [1]*University of Wisconsin, Madison, WI*, [2]*U.S. Dairy Forage Research Center, Madison, WI*, [3]*Balchem Corporation, New Hampton, NY*.

T281 **Performance and diet digestibility of dairy cows supplemented with *Bacillus subtilis* spores.**
V. L. Souza[2], V. A. Silveira[1], N. M. Lopes[1], O. F. Zacaroni[1], R. A. M. Pereira[3], J. A. de Freitas*[2], R. Almeida[2], and M. N. Pereira[1], [1]*Universidade Federal de Lavras, Lavras, Brazil*, [2]*Universidade Federal do Parana, Curitiba, Brazil*, [3]*Empresa de Pesquisa Agropecuaria de Minas Gerais, Lavras, Brazil*.

T282 **Milk fatty acids composition of dairy ewes fed increasing levels of an unprotected CLA (UnCLA) supplement.**
D. R. M. Alessio[1], M. Baldin[1], R. Dresch[1], J. Souza[2], M. A. S. Gama[3], M. P. Soares[4], and D. E. Oliveira*[5,1], [1]*Centro de Ciências Agroveterinárias, UDESC, Lages, SC, Brasil*, [2]*Esalq/USP, Piracicaba, SP, Brasil*, [3]*Embrapa, CNPGL, Juiz de Fora, MG, Brasil*, [4]*Instituto Federal Catarinense, Araquari, SC, Brasil*, [5]*Centro de Educação Superior do Oeste, UDESC, Chapecó, SC, Brasil*.

T283 **Effect of monensin and tallow on methane estimation and protozoan and bacterial populations in dairy cows rumen.**
A. R. Castillo-Gonzalez*[1], M. E. Burrola-Barraza[1], J. A. Ortega-Gutierrez[1], M. I. Rivas-Martinez[2], and A. Chavez-Martinez[1], [1]*Facultad de Zootecnia y Ecología, Chihuahua, Chihuaha, México*, [2]*Colegio de Postgraduados, Texcoco, Edo. de México, México*.

T284 **Hepatic transcriptomics in dairy cows supplemented with SmartamineM or MetaSmart during the peripartal period.**
J. S. Osorio*[1], P. Ji[1], S. L. Rodriguez-Zas[1], D. Luchini[2], R. E. Everts[1], H. A. Lewin[1], J. K. Drackley[1], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*Adisseo, Alpharetta, GA*.

T285 **Production response of lactating dairy cows in a confinement operation to a commercial probiotic.**
J. K. Bernard* and N. A. Mullis, *University of Georgia, Tifton*.

T286 **Evaluating in situ procedures for testing lipid encapsulated products — lysine as an example.**
T. F. Gressley*[1], M. J. de Veth[2], N. K. Diana[1], and E. Mackey[1], [1]*University of Delaware, Newark*, [2]*Balchem Corporation, New Hampton, NY*.

T287 **Effects of PEG and water on condensed tannin deactivation and nutrient digestibility of sainfoin in Holstein cows.**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], K. Rezayazdi[1], and F. Ghaziani[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T288 **Effect of dietary methionine supplementation in early lactation dairy cows I: dry matter intake, milk yield, milk composition and component yields.**
A. H. Souza*[1], P. D. Carvalho[1], A. R. Dresch[1], L. M. Vieira[1,2], K. S. Hackbart[1], D. Luchini[3], S. Bertics[1], N. Betzold[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Sao Paulo-VRA, SP 05508, Brazil*, [3]*Adisseo, Alpharetta, GA*, [4]*U.S. Dairy Forage Research Farm, Prairie du Sac, WI*.

T289 **Effect of dietary antioxidant and increased rumen unsaturated fatty acid load on milk fat yield and fatty acid composition.**
J. C. Ploetz*, C. L. Preseault, and A. L. Lock, *Michigan State University, East Lansing*.

T290 **Effects of condensed tannins on ruminal VFA profile in fistulated Holstein cows fed sainfoin (*Onobrychis vicifolia*).**
H. Khalilvandi-Behroozyar*[1,2], M. Dehghan-Banadaky[1], K. Rezayazdi[1], and F. Ghaziani[1], [1]*Department of Animal Science, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran*.

T291 **Influence of ionophore source and a proprietary nutrition supplement on the performance and rumen metabolism of Holstein calves previously fed a high plane of milk replacer.**
K. K. Guatam*[1], C. J. Cobb[1], B. S. Obeidat[1], M. L. Galyean[1], B. L. Miller[2], J. A. Davidson[2], K. L. Perfield[3], T. A. Brooks[1], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O'Lakes Purina Feed, Gray Summit, MO*, [3]*Elanco, Greenfield, IN*.

T292 **Effect of feeding *Bacillus subtilis* spores on performance of Holstein dairy calves.**
V. L. de Souza[1], J. A. de Freitas*[1], S. L. Viechinieski[5], P. H. N. Pinto[2], M. N. Pereira[3], and J. C. Souza[4], [1]*Federal University of Parana, Curitiba, Parana, Brazil*, [2]*FAG, Cascavel, Parana, Brazil*, [3]*Federal University of Lavras, Lavras, Minas Gerais, Brazil*, [4]*Federal University of South of MAto Grosso, Aquidauana, Mato Grosso do Sul, Brazil*, [5]*Iguacu Farm - Star Milk, Vera Cruz do Oeste, Parana, Brazil*.

T293 **Interaction between vitamin E and rumen-protected conjugated linoleic acid on milk composition in grazing dairy cows.**
M. Ramírez-Mella[1], O. Hernández-Mendo[1], J. E. Ramírez-Bribiesca[1], R. D. Améndola-Massiotti[2], M. M. Crosby-Galván[1], J. A. Burgueño-Ferreira[3], and G. Aranda-Osorio*[2], [1]*Colegio de Postgraduados, Montecillos, Texcoco, México*, [2]*Universidad Autónoma Chapingo, Chapingo, Texcoco, México*, [3]*Centro Internacional de Mejoramiento de Maíz y Trigo, Estado de México, México*.

T294 **Assessment of lysine released from rumen-protected lysine products exposed to high and low moisture TMR over 24 hours.**
P. Ji*, C. S. Ballard, R. E. Clark, B. M. Sweeney, and C. Kokko, *William H. Miner Agricultural Research Institute, Chazy, NY*.

T295 **Does mechanical mixing of TMR compromise protection efficacy of rumen-protected lysine products?**
P. Ji*, C. S. Ballard, R. E. Clark, B. M. Sweeney, and C. Kokko, *William H. Miner Agricultural Research Institute, Chazy, NY*.

T296 **Ionophore source in a calf starter influences the performance of calves during the immediate post-weaned period.**
C. J. Cobb*[1], B. S. Obeidat[1], D. L. Hanson[1], M. D. Sellers[1], B. L. Miller[2], J. A. Davidson[2], K. L. Perfield[3], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O' Lakes Purina Feed, Gray Summit, MO*, [3]*Elanco, Greenfield, IN*.

T297 **Effects of microbial additives on nutrient metabolism in continuous culture of rumen contents.**
W. Braman* and L. C. Solórzano, *Chr. Hansen Inc., Milwaukee, WI*.

T298 **Immunometabolic indices in dairy cows supplemented with Smartamine M or MetaSmart during the peripartal period.**
J. S. Osorio*[1], E. Trevisi[2], P. Ji[1], D. Luchini[3], J. K. Drackley[1], G. Bertoni[2], and J. J. Loor[1], [1]*University of Illinois, Urbana*, [2]*Universita Cattolica del Sacro Cuore, Piacenza, Italy*, [3]*Adisseo, Alpharetta, GA*.

T299 **Ruminal biohydrogenation and abomasal fatty acid flow in dairy cows fed with fatty acids unsaturated sources.**
J. E. Freitas*[1], R. V. Barletta[1], K. Havartine[2], S. L. D. A. Robassini[1], M. D. S. Oliveira[3], B. C. Venturelli[1], E. F. Jesus[1], F. G. Vilela[1], G. D. Calomeni[1], J. R. Gandra[1], T. S. Canaes[1], and F. P. Rennó[1], [1]*University of São Paulo, Pirassununga, SP, Brazil*, [2]*Penn State University, University Park*, [3]*State University Julio de Mesquita, Jaboticabal, SP, Brazil*.

T300 **Evaluation of models ruminal biohydrogenation in dairy cows fed unsaturated fatty acids sources.**
J. E. Freitas*[1], R. V. Barletta[1], K. Harvatine[2], V. P. Bettero[1], M. D. S. Oliveira[3], B. C. Venturelli[1], R. Gardinal[1], J. R. Gandra[1], C. E. Araújo[1], F. G. Vilela[1], V. G. C. Lacuna[1], and F. P. Rennó[1], [1]*University of São Paulo, Pirassununga, SP, Brazil*, [2]*Pennsylvania State University, University Park*, [3]*State University Julio of Mesquita, Jaboticabal, SP, Brazil*.

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Feeds

T301 **Evaluating the mineral composition of *Vernonia amygdalina* leaf.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

T302 **Determination of the nutritional value of some perennial forage species for ruminants.**
C. Bayourthe*[1,2] and C. Julien[1,2], [1]*INRA, UMR1289 TANDEM, Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme, Castanet Tolosan Cedex, France*, [2]*Université de Toulouse, INPT-ENSAT, INP-ENVT, UMR1289 TANDEM, Castanet Tolosan Cedex, France*.

T303 **Dry matter changes in corn silage with rain.**
H. A. Rossow[1], L. Kallaway*[1], N. Falcony[2], and T. Meister[3], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California-Davis, Tulare*, [2]*Alpha Dairy Consulting, Visalia, CA*, [3]*John Deere Forage Products, Moline, IL*.

T304 **Canola meals from different production plants differ in ruminal protein degradability.**
G. A. Broderick*[1], S. Colombini[2], M. A. Karsli[3], L. Nernberg[4], and D. Hickling[4], [1]*U.S. Dairy Forage Research Center, Madison, WI*, [2]*University of Milan, Milan, Italy*, [3]*Yüzüncü Yil University, Van, Turkey*, [4]*Canola Council of Canada, Winnipeg, MB, Canada*.

T305 **Influence of different levels of exogenous enzymes preparation at two application methods on in vitro ruminal fermentation of some fibrous feeds in sheep.**
A. Z. M. Salem*[1], H. Gado[2], N. E. Odongo[3], R. Rojo[4], M. M. Y. Elghandour[1], and A. Olmido[4], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca, Estado de Mexico, Mexico*, [2]*Faculty of Agriculture, Ain Shams University, Cairo, Egypt*, [3]*Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, International Atomic Energy Agency, Vienna, Austria*, [4]*CU-UAEM- Temascaltepec, Universidad Autónoma del Estado de México, Estado de México, México*.

T306 **Composition of diets fed to different groups of lactating cows on California dairies.**
A. R. Castillo*[1], N. Silva del Rio[2], N. R. St-Pierre[3], and W. P. Weiss[3], [1]*University of California, Cooperative Extension, Merced*, [2]*University of California, Cooperative Extension, Tulare*, [3]*The Ohio State University, Department of Animal Science, Columbus*.

T307 **Ruminal degradability, duodenal flow, and intestinal digestibility of protein from canola meal or corn and wheat distillers grains in growing beef heifers.**
C. Li[1,2], J. Q. Li[2], K. A. Beauchemin[1], and W. Z. Yang*[1], [1]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [2]*College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*.

T308 **Tables of nutritive values for farm animals in tropical and Mediterranean regions: an important asset for improving the use of local feed resources.**
D. Sauvant*[4,1], G. Tran[1], V. Heuze[1], D. Bastianelli[2], and H. Archimède[3], [1]*Association Française de Zootechnie, Paris, France*, [2]*CIRAD, Systèmes d'élevage et produits animaux, Montpellier, France*, [3]*INRA, UR143 Unité de Recherches Zootechniques, Petit-Bourg, Guadeloupe, France*, [4]*AgroParisTech-INRA, Paris, France*.

T309 **Quality evaluation of italian rye grass and whole crop barley with homofermentative and heterofermentative lactic acid bacteria.**
H. Lee[1], M. Jeong[1], S. Kim[1], L. Mamuad[1], B. Cha[1], E. Kang[1], C. Jeong[1], D. Kim[1], D. Kim[2], and S. Lee*[1], [1]*Sunchon National University, Suncheon, Republic of Korea*, [2]*National Institute of Animal Science, Suwon, Korea*.

T310 **Sunflower cake in multiple supplements for cattle grazing in the dry season: pH and ruminal ammonia nitrogen.**
R. P. da Silva*[1], A. C. Mesacasa[1], J. T. Zervoudakis[1], L. K. Hatamoto-Zervoudakis[1], L. da Silva Cabral[1], F. de Paula Leonel[2], R. G. F. da Silva[1], J. Q. Soares[1], L. C. R. P. Silva[1], A. J. Neto[1], A. de Oliveira Zanette[1], and J. F. W. Koscheck[1], [1]*Federal University of Mato Grosso, Cuiaba, Mato Grosso, Brazil*, [2]*University of ST John King Del, Sao Joao Del-Rei, Minas Gerais Brazil*.

T311 **Prediction of carbohydrate fractions in some tropical grasses.**
R. S. Fukushima*, C. B. Bacha, A. P. Fuzeto, A. C. R. Port, and A. V. Vargas, *Universidade de Sao Paulo, Pirassununga, SP, Brazil*.

T312 **Using the acetyl bromide lignin method to quantify lignin content in forages.**
M. H. Ramos[1], R. S. Fukushima*[2], and M. S. Kerley[1], [1]*University of Missouri, Columbia, MO*, [2]*Universidade de Sao Paulo, Pirassununga, SP, Brazil*.

T313 **Estimates of kinetic degradability parameters and passage of materials originated from intercropping between brachiaria grass and plantations of corn and soybeans.**
T. S. de Oliveira*[1], V. S. de Oliveira[1], T. M. de Oliveira Alves[1], J. C. Pereira[1], and R. A. M. Vieira[2], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Universidade Estadual Norte Fluminense, Campos dos Goytacazes, Rio de Janeiro, Brazil*.

T314 **Utilization of infrared thermography image analysis in ruminant feeding experiments.**
M. S. V. Salles*[1], S. C. Silva[1], L. C. Roma Junior[1], C. E. L. Oliveira[2], F. A. Salles[1], C. M. M. Bittar[3], and L. El Faro[1], [1]*APTA Centro Leste, Ribeirao Preto, Sao Paulo State, Brazil*, [2]*FZEA USP, Pirassununga, Sao Paulo State, Brazil*, [3]*ESALQ USP, Piracicaba, Sao Paulo State, Brazil*.

T315 **Evaluating and refining the CNCPS feed library.**
R. J. Higgs*, L. E. Chase, D. A. Ross, and M. E. Van Amburgh, *Department of Animal Science, Cornell University, Ithaca, NY*.

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General II

T316 **Investigation on the nutritive value of *Vernonia amygdalina* leaves (bitter leaves) for ruminant animals.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

T317 **Screening of dairy cows for ketosis by routine analysis of β-hydroxybutyrate in DHI test milk samples.**
D. E. Santschi* and D. M. Lefebvre, *Valacta, Ste-Anne-de-Bellevue, Quebec, Canada*.

T318 **Prediction of empty body weight of adult Pelibuey ewes.**
A. J. Chay-Canul[1], J. C. Ku-Vera*[2], A. J. Ayala-Burgos[2], J. G. Magaña-Monforte[2], and L. O. Tedeschi[3], [1]*División Académica de Ciencias Agropecuarias, Universidad Juárez Autónoma de Tabasco, Villahermosa, Tabasco, México*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Yucatán, Yucatán, México*, [3]*Department of Animal Science, Texas A&M University, College Station*.

T319 **Increased lamb production by implanting melatonin to induce out of season breeding.**
T. Wuliji*[1,2], [1]*Lincoln University, Jefferson City, MO*, [2]*University of Nevada, Reno*.

T320 **Effects of different levels of quebracho tannins and sunflower oil on nutrients digestibility and milk fatty acids composition in dairy ewes.**
S. N. Al-Dobaib*[1], H. E. M. Kamel[1], M. A. M. M. Shehab-El-Deen[1], and M. Y. Al-Saiady[2], [1]*Qassim University, Buriedah-51452, Saudi Arabia*, [2]*Arabian Agricultural Services Company, Riyadh-11593, Saudi Arabia*.

T321 **Relationships between residual feed intake and performance of Nellore bulls in feedlot.**
T. P. Guimarães[1], J. J. de Resende Fernandes*[1], K. K. G. Moreira[1], M. D. de Freitas Neto[1,2], V. R. M. Couto[1], B. J. M. Lemos[1], L. F. N. Souza[2], and É. G. Moraes[2], [1]*Universidade Federal de Goiás, Goiânia, Goiás, Brazil*, [2]*Nelore Qualitas, Goiânia, Goiás, Brazil*.

T322 **Adipose tissue preferences for acetate in finishing steers.**
W. A. D. Nayananjalie*, T. R. Wiles, D. E. Gerrard, M. A. McCann, and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg*.

T323 **Effects of different amino acid patterns on the expression of four major milk protein genes in primary cultured bovine mammary epithelial cells.**
X. F. Zhang[1], M. Gao*[2], R. P. Du[2], D. X. Lu[2], C. J. Ao[1], K. Erdene[1], and H. Zhang[1], [1]*Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*, [2]*Inner Mongolia Academy of Agricultural & Animal Husbandry Sciences, Hohhot, Inner Mongolia, China*.

T324 **Evaluation of equations to predict body composition in Nellore bulls.**
L. F. Costa e Silva*, S. C. Valadares Filho, E. Detmann, M. I. Marcondes, and P. P. Rotta, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

T325 **Performance of Holstein dairy cows under different feeding strategies in early lactation.**
M. Fajardo*[1], D. A. Mattiauda[1], A. Meikle[2], M. Carriquiry[1], J. Gil[2], G. Motta[1], G. Guala[1], G. Ortega[1], D. Pelaez[1], P. Sorhouet[1], F. Souza[1], and P. Chilibroste[1], [1]*Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

T326 **Effect of dietary cation-anion difference (DCAD) on beef tenderness.**
J. P. Schoonmaker*, K. T. Korn, K. N. Condron, C. N. Shee, M. C. Claeys, T. D. Nennich, and R. P. Lemenager, *Purdue University, West Lafayette, IN*.

T327 **Performance of early lactation cows fed whole versus chopped sugarcane.**
J. E. P. de la Ossa*[1,2], R. Lana[1,2], and E. M. Balbino[1], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*FAPEMIG, Viçosa, MG, Brazil*, [3]*CNPq, Viçosa, MG, Brazil*.

T328 **The relationship of feed efficiency and visceral organ size in growing lambs fed a concentrate or forage-based diet.**
R. A. Vraspir*, M. J. Ellison, K. M. Cammack, and A. M. Meyer, *Department of Animal Science, University of Wyoming*.

T329 **Performance of Nellore young bulls grazing *Brachiaria brizantha* 'Xaraés' supplemented with different lipid sources.**
A. L. S. Valente*, R. A. Reis, T. T. Berchielli, T. Borgui, I. P. Carvalho de Carvalho, and L. G. Rossi, *Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

T330 **Seminiferous tubule traits of lambs fed with cottonseed co-products (*Gossypium* ssp.).**
T. Paim*[1], P. Viana[2], E. Brandão[2], S. Amador[2], T. Barbosa[2], C. Cardoso[2], A. Abdalla[1], C. McManus[3], and H. Louvandini[1], [1]*Center of Nuclear Energy in Agriculture, Piracicaba, SP, Brazil*, [2]*College of Agronomy and Veterinary, University of Brasília, Brasília, DF, Brazil*, [3]*Animal Production Department, University of Rio Grande do Sul, Porto Alegre, RS, Brazil*.

T331 **Fatty acid profile of meat from lambs fed with cottonseed co-products.**
T. Paim[1], P. Viana[2], E. Brandão[2], S. Amador[2], T. Barbosa[2], C. Cardoso[2], B. Berenchtein[1], C. McManus[3], A. Abdalla[1], and H. Louvandini*[1], [1]*Center of Nuclear Energy in Agriculture, Piracicaba, SP, Brazil*, [2]*College of Agronomy and Veterinary, University of Brasília, Brasília, DF, Brazil*, [3]*Animal Production Department, University of Rio Grande do Sul, Porto Alegre, RS, Brazil*.

T332 **Inclusion of urea in spineless cactus diets for Girolando steers.**
R. A. S. Pessoa*[1], R. da Silva Lima[2], W. G. do Nascimento[2], I. Ferraz[3], and P. C. Vasconcelos[2], [1]*Universidade Federal Rural de Pernambuco, Animal Science Department, Recife, Pernambuco, Brazil*, [2]*Universidade Federal Rural de Pernambuco, Unidade Acadêmica de Garanhuns, Garanhuns, Pernambuco, Brazil*, [3]*Instituto Agronômico de Pernambuco, Recife, Pernambuco, Brazil*.

T333 **Levels of roughage supplementation with cottonseed hull for cattle grazing during the rainy transition season: Performance.**
A. J. Neto*[1], J. T. Zervoudakis[1], L. da Silva Cabral[1], L. K. Hatamoto-Zervoudakis[1], R. L. Galati[1], P. V. R. Paulino[2], R. P. da Silva[1], L. C. R. P. Silva[1], J. Q. Soares[1], and A. P. de Souza Borges[1], [1]*Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*, [2]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*.

T334 **Blood cell and metabolic profile of Nellore bulls ranked by residual feed intake.**
K. K. G. Moreira[1], J. J. de Resende Fernandes*[1,4], T. P. Guimarães[1], E. A. Bento[3,4], E. Arnhold[1], H. F. Oliveira[1], M. D. de Freitas Neto[1,2], V. R. M. Couto[1], É. G. de Moraes[2], and L. F. N. Souza[2], [1]*Universidade Federal de Goiás, Goiânia, Goiás, Brazil*, [2]*Nelore Qualitas, Goiânia, Goiás, Brazil*, [3]*Instituto Federal Goiano, Rio Verde, Goiás, Brazil*, [4]*Conselho Regional de Medicina Veterinaria e Zootecnia, Goiânia, Goiás, Brazil*.

T335 **Carcass evaluation of subjected to feed restriction.**
A. R. C. Lima*, M. H. M. da Rocha Fernandes, I. A. M. de Almeida Teixeira, K. T. de Resende, and R. G. Aparecido, *Sao Paulo State University, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Sao Paulo, Brazil*.

T336 **Carcass traits and meat quality of goats subjected to feed restriction.**
A. K. Almeida*, L. S. Fonseca, D. C. Soares, S. P. Silva, I. A. M. A. Teixeira, K. T. Resende, and H. Borba, *Universidade Estadual Paulista, UNESP, Jaboticabal, São Paulo, Brazil*.

T337 **The relationship between feed efficiency and pancreatic α-amylase and trypsin activity in growing lambs.**
F. E. Doscher*[1], A. M. Meyer[2], M. J. Ellison[2], K. M. Cammack[2], and K. C. Swanson[1], [1]*North Dakota State University, Fargo*, [2]*University of Wyoming, Laramie*.

T338 **Effect of zinc concentration on performance and carcass characteristics of feedlot steers.**
E. Caldera*[1], J. J. Wagner[1,2], K. L. Neuhold[1], G. I. Zanton[3], K. S. Sellins[1], and T. E. Engle[1], [1]*Colorado State University, Fort Collins*, [2]*Southeast Colorado Research Center, CSU, Lamar*, [3]*Novus International Inc., St. Charles, MO*.

T339 **Effects of feeding corn- or legume/grass silage-based diets on ruminal bacteria and archaea communities.**
A. Lettat*, F. Hassanat, and C. Benchaar, *Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*.

T340 **Biochemical blood parameters and liver enzymes of Saanen dairy goats fed with diets containing tannin and polyethylene glycol supplement.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. R. Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*.

T341 **Levels of concentrate for crossbred Holstein-Zebu cows under grazing.**
C. P. Ghedini[1], R. P. Lana[1], A. S. Oliveira[2], J. Perottoni[4], D. C. Abreu*[1], R. L. Albino[1], J. E. P. de la Ossa[1], R. M. Paula[1], P. E. P. Barros[3], and F. G. Silva[1], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*, [3]*Universidade Federal de Lavras, Lavras, MG, Brazil*, [4]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*.

T342 **The relationship between feed efficiency traits and fertility in young beef bulls.**
B. J. Awda*[1], S. P. Miller[1], Y. R. Montanholi[1], G. Vander Voort[1], T. Caldwell[1], M. M. Buhr[2], and K. C. Swanson[3], [1]*Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Department of Animal and Poultry Sciences, College of Agriculture & Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*, [3]*Department of Animal Sciences, North Dakota State University, Fargo*.

T343 **Influence of tannins extract addition on feedlot-performance of bulls fed sorghum-based diets.**
R. Barajas*[1], B. J. Cervantes[2], M. A. Espino[1,3], A. Camacho[1], M. Verdugo[1], L. R. Flores[1], S. C. Aréchiga[1], J. J. Lomeli[1], and J. A. Romo[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S. A. de C. V., Culiacán, Sinaloa, México*, [3]*Pronutrient Developers, León, Guanajuato, México*.

T344 **Performance of milking crossbred cows under pasture as a function of levels of concentrate in the diet.**
D. C. Abreu*[1], R. P. Lana[1], A. S. Oliveira[2], C. P. Ghedini[1], R. M. Paula[1], R. L. Albino[1], F. G. Silva[1], and E. M. Balbino[1], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*.

T345 **Effect of supplementation of tannin-extract in corn silage based-diets on performance of growing bulls under commercial feedlot conditions.**
M. A. Espino[1,2] and R. Barajas*[2], [1]*Pronutrient Developers, León, Guanajuato, México*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*.

T346 **Effect of pasture type and dietary lipid supplementation on animal performance, carcass composition and fatty acid composition of muscle and adipose tissue in lamb.**
N. S. Brooks*[1], J. L. Duynisveld[3], D. M. W. Barrett[1], Y. A. Papadopolous[1,4], J. Wort[2], A. H. Fredeen[1], and K. E. Glover[1], [1]*Nova Scotia Agricultural College, Truro, NS, Canada*, [2]*AgraPoint, Truro, NS, Canada*, [3]*Agriculture and Agri-Food Canada, Nappan, NS, Canada*, [4]*Agriculture and Agri-Food Canada, Truro, NS, Canada*.

T347 **The effect of diet on feed intake traits and relationships with carcass traits in sheep.**
M. J. Ellison*, R. R. Cockrum, K. W. Christensen, R. A. Vraspir, L. Speiser, W. J. Means, A. M. Meyer, and K. M. Cammack, *Department of Animal Science, University of Wyoming*.

T348 **Effects of roughage level and corn processing method on finishing performance of Nellore bulls.**
M. Caetano*[1], R. S. Goulart[2], P. M. Rizzo[1], S. L. Silva[3], P. R. Leme[3], J. S. Drouillard[4], and D. P. D. Lanna[1], [1]*University of Sao Paulo, ESALQ, Piracicaba, SP, Brazil*, [2]*North Dakota State University, Fargo*, [3]*University of Sao Paulo, FZEA, Pirassununga, SP, Brazil*, [4]*Kansas State University, Manhattan*.

T349 **Estimation of carcass and body fat composition using biometric measurements of grazing beef cattle.**
N. F. De Paula[1,2], L. O. Tedeschi[2], M. F. Paulino[1], H. J. Fernandes[3], M. A. Fonseca*[1,2], V. R. M. Couto[1], I. F. S. Maciel[1], and D. M. Almeida[1], [1]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*, [2]*Texas A&M University, College Station*, [3]*Universidade Estadual do Mato Grosso do Sul, Aquidauana, Mato Grosso do Sul, Brazil*.

T350 **Performance of dairy kids submitted to different sources of goat milk replacers.**
M. I. Marcondes*, L. S. Knupp, A. L. Silva, L. M. Carvalho, M. M. S. Santos, J. S. A. A. Santos, C. G. Vitor, and C. M. Veloso, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

T351 **Early feeding of low levels of fat supplement suppresses postprandial in vitro rumen metabolism.**
Q. Baptiste*, K. D'Souza, S. Simpson, S. Chavez, E. Nestor, M. Knights, and E. Felton, *West Virginia University, Morgantown*.

Ruminant Nutrition
Young Stock

T352 **Effects of limiting concentrate during growing period on performance and plasma variables, and gene expression of hepatic gluconeogenic enzymes in Holstein calves.**
J. D. Lohakare*, N. K. Singh, J. Ghassimi Nejad, K. I. Sung, and S. L. Ingale, *College of Animal Life Sciences, Kangwon National University, Chuncheon, Kangwon Province, South Korea*.

T353 **Plane of nutrition during the pre- and post-weaned periods influences the performance and innate immune activity of Jersey calves.**
D. L. Hanson*[1], C. J. Cobb[1], M. D. Sellers[1], T. J. Earleywine[2], and M. A. Ballou[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Land O'Lakes, Animal Milk Products Co., Shoreview, MN*.

T354 **Influence of tannins-extract supplementation on plasma urea nitrogen concentration of bull-calves grazing Bermuda grass.**
D. González*[1,2], M. A. Espino[2], and R. Barajas[2], [1]*Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias. Campo Experimental Valle de Culiacán, Culiacán, Sinaloa, México*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*.

T355 **The influence of grassland management and housing on voluntary dry matter intake in heifers.**
O. Latal*[1], J. Pozdisek[2], and J. Bezdicek[1], [1]*Agrovyzkum Rapotin Ltd., Vikyrovice, Czech Republic*, [2]*Research Institute for Cattle Breeding Ltd., Vikyrovice, Czech Republic*.

T356 **Effect of time of access to temperate forage on intake and digestibility of organic matter and fiber fractions in heifers.**
A. Félix[1], N. Hernández[1], P. Restuccia[1], S. Ruiz[1], M. Aguerre[1], A. Pérez-Ruchel[2], J. L. Repetto[1], and C. Cajarville*[2], [1]*Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*, [2]*Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*.

T357 **Assessment of bone metabolism in pregnant heifers with high and low residual feed intake.**
R. Dias[1], J. Kim*[1], S. Lopez[2], Y. Montanholi[1], B. Smith[1], S. Miller[1], and J. France[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Universidad de León, Leon, Leon, Spain*.

T358 **Dried citrus pulp alters feedlot performance of crossbred heifers during the receiving period.**
J. T. Cribbs*[1], T. R. Young[1], M. A. Jennings[1], N. C. Burdick[2], J. A. Carroll[2], T. R. Callaway[3], T. B. Schmidt[4], B. J. Johnson[1], and R. J. Rathmann[1], [1]*Texas Tech University, Lubbock*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*USDA-ARS, Food and Feed Safety Research Unit, College Station, TX*, [4]*Mississippi State University, Department of Animal and Dairy Science, Starkville*.

T359 **Effect of time of access to temperate pasture on nitrogen utilization, digestibility of nitrogen and microbial protein synthesis in heifers.**
N. Hernández[1], A. Félix[1], A. Pérez Ruchel[2], M. Aguerre[1], C. Cajarville[2], and J. L. Repetto*[1], [1]*Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*, [2]*Departamento de Nutrición, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay*.

T360 **Comparison of pH, volatile fatty acids, and microbial quantification on rumen samples from young calves obtained via cannula or stomach tube.**
M. Terré*[1], Ll. Castells[1], and A. Bach[2,1], [1]*Institut de Recerca i Tecnologia Agroalimentàries, Caldes de Montbui, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain*.

T361 **Effects of limiting concentrate during growing period on performance and plasma variables, and gene expression of hepatic gluconeogenic enzymes and visfatin in Korean native beef calves.**
J. D. Lohakare*[1], S. S. Chang[2], N. K. Singh[1], E. G. Kwon[2], J. Ghassimi Nejad[1], K. I. Sung[1], and S. K. Hong[2], [1]*College of Animal Life Sciences, Kangwon National University, Chuncheon, South Korea*, [2]*Hanwoo Experimental Station, National Institute of Animal Science, RDA, Pyeongchang, South Korea*.

T362 **How the provision of forage in pre-weaned calves affects performance and digestibility after weaning.**
Ll. Castells*[1], A. Bach[1,2], C. Montoro[1], E. M. Rodríguez[1], P. Ureña[1], and M. Terré[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*ICREA, Barcelona, Spain*.

Small Ruminant Production

T363 **The effects of confinement and protein levels on carcass traits of kids raised under mixed-species grazing system.**
S. Gebrelul*, L. Gray, R. Marshall, and C. Chisley, *Southern University Ag Center, Baton Rouge, LA*.

T364 **Fatty acids profile in *Longissimus dorsi* of Santa Ines lambs fed with different energy levels.**
P. C. L. Arruda, E. S. Pereira*, P. G. Pimentel, G. M. B. Moreno, J. N. Rocha Junior, J. G. L. Regadas Filho, and R. M. Fontenele, *Federal University of Ceara, Fortaleza, Ceara, Brazil*.

T365 **The effect of induction hypothyroidism on carcass quality and performance in lamb.**
Y. Baghcheghi*, A. Yousefi, A. Z. Shahneh, M. G. Khanlo, and M. Poorhamdollah, *University of Tehran, Karaj, Tehran, Iran*.

T366 **Effect of transient hypothyroidism on lamb's meat quality.**
Y. Baghcheghi*[1], A. Z. Shahneh[1], A. Yousefi[1], M. Poorhamdollah[1], and M. Joki[2], [1]*Department of Animal Sciences, University of Tehran, Karaj, Tehran, Iran*, [2]*Department of Food Sciences, University of Tehran, Karaj, Tehran, Iran*.

T367 **Biochemical and hormonal response and chemical composition of milk following ACTH administration in goats fed lemongrass (*Cymbopogon citratus* (DC.) Stapf).**
T. S. Canaes*[1], S. N. Macedo[1], C. G. Lima[1], V. A. Pimentel[2], and J. A. Negrão[1], [1]*Sao Paulo University, Sao Paulo, Sao Paulo, Brazil*, [2]*Federal University of Espirito Santo, Sao Mateus, Espirito Santo, Brazil*.

T368 **Forage yield and quality changes in mixed cattle and goats grazing practices.**
Y. Ghebreiyessus*, S. Gebrelul, M. Berhane, and R. Payne, *Southern University Ag Center, Baton Rouge, LA*.

T369 **Quantitative traits of carcass of Ile de France lambs fed diets containing different percentages of hay mulberry.**
V. T. Santana, A. G. Silva Sobrinho, L. G. A. Cirne*, V. Endo, N. L. L. Lima, F. A. Almeida, G. M. Manzi, and N. M. B. L. Zeola, *Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil*.

T370 **Relationships among internal fat depots and subcutaneous fat in sheep.**
R. C. Gomes*, C. Constantino, F. Fernandes, N. A. Koritiaki, M. V. G. Niwa, M. N. Marconato, F. A. B. Castro, and E. L. A. Ribeiro, *Department of Animal Science, State University of Londrina, Londrina, Parana, Brazil*.

T371 **Impact of different stocking rates of goats under pine silvopasture systems on understory biomass, crown cover density, and animal productivity.**
I. Howard*, A. S. Kumi, N. K. Gurung, U. Karki, R. Smith, S. G. Solaiman, W. H. McElhenney, and B. R. Min, *Tuskegee University, Tuskegee, AL*.

T372 **Influence of trenbolone acetate and estradiol ear-implant level on feedlot-performance of hair lambs.**
B. Ortiz*[1], J. J. Álvarez[2], and R. Barajas[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Productores de Ovinos de Guanajuato, SPR de RL, Silao, Guanajuato, México*.

T373 **Femur biometry and densitometry of Saanen goats subjected to feed restriction.**
D. C. Soares*, K. T. Resende, A. K. Almeida, S. P. Silva, M. H. M. R. Fernandes, E. M. Oliveira, S. M. B. Artoni, and I. A. M. A. Teixeira, *UNESP/Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

T374 **Influence of dry period length on blood leukocyte subsets of Sarda dairy ewes and their offspring.**
P. Bonelli[1], C. Carzedda[2], A. Fenu[2], G. Spanu[2], C. Dimauro*[2], R. Re[1], P. Nicolussi[1], and SPG Rassu[2], [1]*Istituto Zooprofilattico Sperimentale della Sardegna, Sassari, Italy*, [2]*Dipartimento di Agraria, Sezione di Scienze Zootecniche, University of Sassari, Italy*.

T375 **Effects of plant extracts and monensin on metabolite status and performance of peripartum ewes.**
H. Mirzaei Alamouti*, H. Namdarpor, H. Amanlo, M. H. Shahir, and D. Aliyari, *University of Zanjan, Zanjan, Iran*.

T376 **Efficacy of a bovine colostrum replacement product for goat kids.**
S. Hart*[1], S. Genova[2], D. M. Haines[3,4], and B. Bah[1], [1]*American Institute for Goat Research, Langston Univ., Langston, OK*, [2]*Boren Veterinary Teaching Hospital, Oklahoma State Univ., Stillwater*, [3]*Department of Veterinary Microbiology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK, Canada*, [4]*The Saskatoon Colostrum Co., Saskatoon, SK, Canada*.

T377 **Effect of chromium supplementation on carcass traits and blood parameters of Mahabadi goat kids.**
A. Emami, M. Ganjkhanlou*, A. Zali, A. Akbari, and A. Hojabri, *University of Tehran, Tehran, Iran*.

T378 **Pasture lambing: An alternative to intensive indoor management at lambing.**
N. L. Pettifor* and M. L. Thonney, *Cornell University, Ithaca, NY*.

T379 **Evaluation of the impact of dietary sericea lespedeza on rumen microflora and innate immunity in goats.**
A. Abdalla*, H. Ismail, S. Ibrahim, N. Whitley, and M. Worku, *North Carolina A&T University, Greensboro*.

T380 **Effect of continuous suckling/ewe-rearing and supplementation on growth performance of Katahdin lambs.**
S. L. Rastle-Simpson*, K. N. D'Souza, M. Knights, and Q. S. Baptiste, *West Virginia University, Morgantown*.

T381 **Pre-partum nutritional supplementation strategies in goats managed under grazing conditions: 2. Serum glucose concentration profiles and milk production.**
V. Contreras-Villarreal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], R. Rodriguez-Martinez[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], and F. G. Véliz*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

T382 **Comparison of different mathematical models applied to lactation adjustment of F_1 sheep in an organic production system.**
J. C. Angeles Hernandez*, B. Albarran Portillo, A. V. Gomez Gonzalez, N. Pescador Salas, and M. Gonzalez Ronquillo, *Universidad Autonoma del Estado de Mexico, Facultad de Medicina Veterinaria y Zootecnia, Toluca, Estado de Mexico, Mexico*.

T383 **Pre-partum nutritional supplementation strategies in goats managed under grazing conditions: 1. Doe and offspring BW dynamics.**
V. Contreras-Villareal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], R. Rodriguez-Martinez[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], and F. G. Véliz*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

T384 **Pre-partum nutritional supplementation (energy or protein) strategies in goats managed under grazing conditions: 3. Offspring growth dynamics and doe milk production.**
V. Contreras-Villarreal[1], O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], R. Rodriguez-Martinez[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], and F. G. Véliz*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

T385 **Effects of ground linted cottonseed on growth and carcass characteristics of feedlot lambs fed high-concentrate diets.**
R. A. Souza, R. S. Gentil, E. M. Ferreira, D. M. Polizel, M. I. C. Alves, L. G. M. Gobato, A. V. Pires, and I. Susin*, *Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, São Paulo, Brazil*.

T386 **Effect of concentrate versus forage diet on feed intake and reproductive traits in crossbred ewes.**
R. R. Cockrum*, S. L. Lake, R. H. Stobart, and K. M. Cammack, *University of Wyoming, Laramie*.

T387 **Influence of level of zilpaterol hydrochloride supplementation at different live weight on carcass characteristics of feedlot lambs.**
J. C. Robles-Estrada*[1], H. Dávila-Ramos[1], A. Estrada-Angulo[1], F. G. Ríos[1], K. I. Leyva-Medina[1], and A. Plascencia[2], [1]*Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Universidad Autónoma de Baja California, Mexicali, Baja California, México*.

T388 **Fatty acids in milk of goats fed sunflower seeds at different crude protein levels in the diet and thrombogenicity and atherogenicity indexes.**
C. Vázquez Fontes*[1], A. Domïnguez López[1], N. Pescador Salas[2], L. R. Bernal Martinez[1], and M. Gonzalez Ronquillo[2], [1]*Universidad Autónoma del Estado de Mexico. Facultad de Ciencias Agricolas*, [2]*Facultad de Medicina Veterinaria y Zootecnia, Toluca, Estado de Mexico. Mexico. 50000*.

Swine Species II
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T389 **Genistein decreases LPS-stimulated production of TNF-α in porcine peripheral blood mononuclear cells.**
L. Seefeldt* and J. Clapper, *South Dakota State University, Brookings*.

T390 **Effort on an oral endotoxin challenge in pigs.**
S. Schaumberger* and G. Schatzmayr, *Biomin Research Center, Tulln, Austria*.

T391 **Effect of Actigen supplementation in gestation and lactation on sow and piglet performance, colostrum Ig level and milk composition.**
R. S. Samuel* and K. M. Brennan, *Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY.*

T392 **Effect of maternal Actigen supplementation during gestation and lactation on piglet gut development and gene expression.**
K. M. Brennan* and D. E. Graugnard, *Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY.*

T393 **Effect of social ranks on oxidative stress status, reproductive performance, and immune status of sows housed in groups during gestation.**
Y. Zhao*, W. L. Flowers, and S. W. Kim, *North Carolina State University, Raleigh*.

T394 **Novel strategies to stimulate GLP-2 secretion and intestinal adaptation in weanling piglets.**
I. R. Ipharraguerre*[1], D. G. Burrin[2], G. Tedó[1], D. Menoyo[3], J. J. Holst[4], and A. Mereu[1], [1]*Feed Additives Division, Lucta S. A., Montornés del Vallés, Spain*, [2]*USDA/ARS Children's Nutrition Research Center, Department of Pedriatics, Baylor College of Medicine, Houston, Texas*, [3]*Departamento de Producción Animal, Universidad Politécnica de Madrid, ETS Ingenieros Agrónomos, Madrid, Spain*, [4]*Department of Biomedical Sciences, University of Copenhagen, Copenhagen, Denmark.*

Teaching/Undergraduate and Graduate Education

T395 **Student perceptions and moral conflict of animal use in society.**
M. Amstutz, K. Bennett-Wimbush*, and D. Willoughby, *Ohio State ATI, Wooster*.

T396 **Developing horsemanship skills through the understanding of equine behavior.**
M. Nicodemus* and S. Lindsey, *Mississippi State University, Mississippi State*.

T397 **A web-based computer simulator to teach dairy farm management.**
S. Calsamiglia*, L. Castillejos, A. Ferret, G. Vera, and G. Espinosa, *Universidad Autonoma de Barcelona, Barcelona, Spain*.

T398 **Relationships between course schedule and student academic performance and attendance in undergraduate animal science courses.**
K. Stutts, M. Beverly*, S. Kelley, M. McMillan, A. Bullion, and L. McMillan, *Sam Houston State University, Huntsville, TX.*

T399 **The effects of note-taking method on academic performance in undergraduate animal science courses.**
K. Stutts*, M. Beverly, S. Kelley, M. McMillan, A. Bullion, and L. McMillan, *Sam Houston State University, Huntsville, TX.*

SYMPOSIA AND ORAL SESSIONS

ADSA Foundation Scholar Lecture: Production
Chair: Lance Baumgard, Iowa State University
121C

9:30 AM **Introduction.**
L. Baumgard, *Iowa State University*.

9:40 AM **Got Inflammation? The complex links between metabolic and inflammatory pathways in the dairy cow.**
B. A. Bradford*, *Kansas State University*.

ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium
How Dairy Exporters Can Provide Food Security
Chair: Katharine F. Knowlton, Virginia Tech
Sponsor: ADSA
121AB

9:30 AM **Introduction**
K. F. Knowlton, *Virginia Tech*.

9:45 AM 301 **Making safe, affordable, abundant food a global reality.**
T. A. Armstrong*, *Elanco Animal Health, Greenfield, IN*.

10:30 AM 302 **How dairy foods aid in food security.**
V. Lagrange*, *US Dairy Export Council*.

11:15 AM 303 **Development of local dairy production: The Indian experience.**
G. Sohani*, *BAIF Development Research Foundation, Pune, Maharashtra, India*.

Animal Health III
Chair: Holly Neibergs, Washington State University
Sponsors: Elanco Animal Health and Pfizer Animal Health
228AB

9:30 AM 304 **Effect of vaccination technique and antibody level on primary and secondary response in beef calves after vaccination against bovine viral diarrhea virus.**
M. R. Rey*[1], J. C. Rodriguez-Lecompte[1], T. Joseph[3], J. Morrison[2], A. Yitbarek[1], K. M. Wittenberg[1], M. Undi[1], and K. H. Ominski[1], [1]*Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada*, [2]*Department of Biosystems Engineering, University of Manitoba, Winnipeg, MB, Canada*, [3]*Veterinary Diagnostic Services, Manitoba Agriculture, Food and Rural Initiatives, Winnipeg, MB, Canada*.

9:45 AM 305 **Bacteria counts in on-farm pasteurized milk for dairy calves versus season and time post-pasteurization.**
D. J. Wilson*[1], K. A. Rood[1], and G. M. Goodell[2], [1]*Utah State University, Logan*, [2]*The Dairy Authority, Greeley, CO*.

10:00 AM 306 ***Salmonella* carriage rates in neonatal dairy calves.**
E. M. Chavez*[1], R. B. Harvey[2], K. Andrews[2], T. S. Edrington[2], C. M. Scanlan[3], and G. R. Hagevoort[1], [1]*Agricultural Science Center at Clovis, New Mexico State University, Clovis*, [2]*Food and Feed Safety Research Unit, Agricultural Research Service, USDA, College Station, TX*, [3]*Department of Veterinary Pathobiology, Texas A&M University, College Station*.

10:15 AM 307 **The association between colostrum bacteria counts and immunoglobulin absorption, calf growth and mortality.**
A. Lago*[1], J. Quigley[2], J. Polo[2], and J. Campbell[2], [1]*DairyExperts, Tulare, CA*, [2]*APC Inc., Ankeny, IA*.

10:30 AM 308 **Adding an anti-inflammatory lactic acid bacteria to a *Bacillus*-based direct-fed microbial improves calf immune development.**
M. Duersteler*[1], K. N. Novak[1], C. A. Wehnes[1], M. E. Davis[1], D. R. Shields[2], and A. H. Smith[1], [1]*Danisco USA Inc., Waukesha, WI*, [2]*Merrick's Inc., Union Center, WI*.

10:45 AM 309 **An evaluation of the efficacy of Metacam NSAID therapy for improving calf vigor, general health and overall performance in newborn Ontario dairy calves.**
C. Murray*, S. Deelen, D. B. Haley, T. Duffield, and K. Leslie, *University of Guelph, Guelph, ON, Canada*.

11:00 AM 310 **Innate immunological or metabolic status prior to an oral *Salmonella typhimurium* challenge is not predictive of a heightened acute phase response in weaned Jersey calves.**
M. A. Ballou*, M. D. Sellers, D. L. Hanson, A. R. Pepper-Yowell, C. J. Cobb, and B. S. Obeidat, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

11:15 AM 311 **Outdoor group-housed calves have improved performance and heightened innate immune responses during the neonatal and weaning periods compared to outdoor single-housed calves.**
C. J. Cobb*, D. L. Hanson, M. D. Sellers, A. R. Pepper-Yowell, B. S. Obeidat, and M. A. Ballou, *Texas Tech University, Lubbock*.

11:30 AM 312 **Immune, health, and growth responses of beef calves administered modified-live virus respiratory vaccine during the presence of maternal antibody versus a traditional vaccination regimen.**
J. G. Powell*[1], J. T. Richeson[2], E. B. Kegley[1], K. P. Coffey[1], G. F. Erf[1], A. H. Brown[1], W. Downum[1], and D. T. Ensley[3], [1]*University of Arkansas, Fayetteville*, [2]*West Texas A&M University, Canyon*, [3]*Boehringer Ingelheim Vetmedica Inc., St. Joseph, MO*.

11:45 AM 313 **Dietary adjuvanting prior to vaccine administration increases maternal antibody transfer to calves.**
A. D. Rowson, T. H. Schell, Y. Wang, N. E. Forsberg, and S. B. Puntenney*, *OmniGen Research LLC, Corvallis, OR*.

12:00 PM 314 **Correlation between circulating white blood cell counts and level of protective immune response against bovine viral diarrhea virus elicited by a modified live vaccine.**
S. M. Falkenberg*[1], J. Ridpath[1], J. R. Tait[2], B. Vander Lay[1,2], and J. M. Reecy[2], [1]*USDA-ARS-National Animal Disease Center, Ames, IA*, [2]*Iowa State University, Ames*.

12:15 PM 315 **Omnigen-AF restores GR-1, L-selectin, and RANTES expression by immunosuppressed murine PMN challenged with lipopolysaccharide in a MyD88-dependent manner.**
R. J. Ortiz-Marty[1], N. E. Forsberg[2], J. D. Chapman[3], and I. K. Mullarky*[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*OmniGen Research LLC, Corvallis, OR*, [3]*Prince Agri Products Inc., Quincy, IL*.

ARPAS Symposium
Feed Efficiency: Opportunities for improvement, economics, and integration with environmental sustainability
Chair: Bill Sanchez, Diamond V
Sponsor: ARPAS
125AB

9:30 AM **Introduction**
B. Sanchez, *Diamond V*.

9:35 AM 316 **Feed efficiency: Basic principles and opportunities for improvement.**
M. VandeHaar*[1], L. Armentano[2], D. M. Spurlock[3], J. Patience[3], and J. Taylor[4], [1]*Michigan State University, East Lansing*, [2]*University of Wisconsin, Madison*, [3]*Iowa State University, Ames*, [4]*University of Missouri, Columbia*.

10:15 AM 317 **Impact of milk yield, herd size, and feed efficiency on economic change between and within California dairies from 2006 through 2010.**
L. Rodriguez*[1], G. Bethard[2], D. Tomlinson[1], and M. McGilliard[3], [1]*Zinpro Corporation, Elk Grove, CA*, [2]*G & R Consulting, Blacksburg, VA*, [3]*Virginia Tech, Blacksburg*.

11:00 AM 318 **Integrating productivity and whole-farm efficiency to achieve environmental sustainability.**
J. L. Capper*[1] and D. E. Bauman[2], [1]*Washington State University, Pullman*, [2]*Cornell University, Ithaca, NY*.

Bioethics Symposium
Bioethical Challenges in Education: New challenges and opportunities
Chair: Jodie Pennington, Lincoln University
Sponsor: Elanco Animal Health
227AB

9:30 AM — **Introduction**
J. Pennington, *Lincoln University*.

9:35 AM 319 — **Challenges and opportunities in teaching agricultural animal bioethics: Part 1.**
C. C. Croney*[1], W. R. Stricklin[2], and D. Scott[3], [1]*Purdue University*, [2]*University of Maryland, College Park*, [3]*University of Montana*.

10:05 AM 319 — **Challenges and opportunities in teaching agricultural animal bioethics: Part 2**
C. C. Croney[1], W. R. Stricklin*[2], and D. Scott[3], [1]*Purdue University*, [2]*University of Maryland, College Park*, [3]*University of Montana*.

10:35 AM — **Break**

10:50 AM 320 — **Assessing the merits of animal welfare assessment tools: A philosophical framework from virtue ethics and narrative ethics.**
R. Anthony*, *University of Alaska, Anchorage*.

11:30 AM 321 — **Challenges and opportunities for bioethical education in extension/outreach activities.**
H. M. Zaleski*[1] and D. Newman[2], [1]*University of Hawaii at Manoa, Honolulu*, [2]*North Dakota State University, Fargo*.

12:10 PM — **Panel Discussion and Comments**

Breeding and Genetics
Dairy Cattle Breeding II—Applied molecular biology and genomics
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS, USDA
123

9:30 AM 322 — **Effects of genomic inbreeding on production, reproduction, and udder health in Holstein dairy cows.**
D. W. Bjelland*[1], K. A. Weigel[1], D. J. Nkrumah[2], and N. Vukasinovic[2], [1]*Uinversity of Wisconsin-Madison, Madison*, [2]*Pfizer Animal Genetics, Kalamazoo, MI*.

9:45 AM 323 — **Maternal grandsire confirmation and discovery in dairy cattle.**
G. R. Wiggans[1], T. A. Cooper*[1], P. M. VanRaden[1], J. R. O'Connell[2], and L. R. Bacheller[1], [1]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [2]*University of Maryland School of Medicine, Baltimore*.

10:00 AM 324 — **Sequence analysis and methylation patterns of the bovine IWS1 gene localized to a region of BTA2 involved in postnatal growth.**
I. G. Imumorin*[1], M. De Donato[1,2], S. O. Peters[1,3], A. M. Corn[1], Y. Bing[1], H. E. Rudolfo[2,4], M. Al-Abri[1,4], and T. Hussain[1,5], [1]*Cornell University, Ithaca, NY*, [2]*Universidad de Oriente, Cumana, Venezuela*, [3]*Federal University of Agriculture, Abeokuta, Nigeria*, [4]*Sultan Qaboos University, Muscat, Oman*, [5]*University of Veterinary and Animal Sciences, Lahore, Pakistan*.

10:15 AM 325 — **Characterization of sequence diversity of IFNAA and INFB1 in Pakistani breeds of cattle.**
T. Hussain*[1,2], M. E. Babar[1], A. Nadeem[1], A. Ali[1], A. Wajid[1], M. Al Abri[2], M. De Donato[2,3], S. O. Peters[2], and I. G. Imumorin[2], [1]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, [2]*Department of Animal Science, Cornell University, Ithaca, NY*, [3]*IIBCA, Universidad de Oriente, Cumana, Venezuela*.

10:30 AM 326 — **Effect of GHR *Alu*I polymorphism on reproductive performance of Holstein cows.**
A. Schneider*[1], M. N. Corrêa[1], and W. R. Butler[2], [1]*Veterinary College, Federal University of Pelotas, Pelotas, RS, Brazil*, [2]*Department of Animal Science, Cornell University, Ithaca, NY*.

10:45 AM 327 — **Genomic evaluation of rectal temperature in Holstein cattle.**
S. Dikmen*[1], J. B. Cole[2], D. J. Null[2], and P. J. Hansen[3], [1]*Department of Animal Science, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey*, [2]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [3]*Department of Animal Sciences, University of Florida, Gainesville*.

11:00 AM 328 **Feasibility of genomic prediction of fatty acids composition in milk of dairy cattle from Luxembourg using single-step procedure.**
P. Faux*[1], V. M.-R. Arnould[1,2], H. Soyeurt[1,3], and N. Gengler[1,3], [1]*Animal Science Unit, Gembloux Agro-Bio Tech, University of Liege, Gembloux, Belgium*, [2]*CONVIS s.c., Ettelbruck, Luxembourg*, [3]*National Fund for Scientific Research (FNRS), Brussels, Belgium*.

11:15 AM 329 **Microsatellite markers based genetic evaluation of Pakistani cattle breeds.**
M. E. Babar*[1], T. Hussain[1,2], A. Nadeem[1], A. Ali[1], A. Wajid[1], S. A. Shah[1], K. Abbas[1], A. Azam[1], Z. Ahmad[1], M. De Donato[1,3], S. O. Peters[1], and I. G. Imumorin[1], [1]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, [2]*Dept. Animal Science, Cornell University, Ithaca, NY*, [3]*IIBCA, Universidad de Oriente, Cumana, Venezuela*.

11:30 AM 330 **Effects of β-casein, κ-casein and β-lactoglobulin gene allelic variants on milk production and protein composition traits of Brown Swiss cows.**
C. Ribeca*, A. Cecchinato, M. Penasa, V. Bonfatti, F. Tiezzi, P. Carnier, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE), Legnaro, Padova, Italy*.

11:45 AM 331 **Associations between single nucleotide polymorphisms in multiple candidate genes on milk yield, composition, coagulation properties and individual cheese yield in Brown Swiss cows.**
A. Cecchinato*, C. Ribeca, M. Penasa, C. Cipolat Gotet, M. De Marchi, A. Maurmayr, and G. Bittante, *Department of Agronomy, Food, Natural Resources, Animals and Environment (DAFNAE), University of Padova, Legnaro, Padova, Italy*.

12:00 PM 332 **Sire and vaccine treatment effects on immune response to BVDV 1b challenge.**
E. D. Downey*[1], X. Fang[1], C. A. Runyan[1], J. E. Sawyer[2], T. B. Hairgrove[3], J. F. Ridpath[4], C. A. Gill[1], and A. D. Herring[1], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, College Station*, [3]*Texas AgriLife Extension, College Station*, [4]*National Animal Disease Center, USDA-ARS, Ames, IA*.

12:15 PM 333 **Genome-wide DNA methylation fluctuation in mastitis mice infected by *Staph. aureus*.**
Y. Yu*, Y. Wei, L. Fan, Y. He, and Y. Wang, *China Agricultural University, China*.

CSAS Symposium
Are We Experiencing a Paradigm Shift in How We Feed Livestock As Industrial Agriculture Evolves in the 21st Century?
Chair: Gregory Penner, University of Saskatchewan
Sponsor: Canadian Society of Animal Science
223

9:15 AM **Introduction**
G. Penner, *University of Saskatchewan, Saskatoon, SK, Canada*.

9:20 AM 334 **Are we experiencing a paradigm shift in how we feed livestock as industrial agriculture evolves in the 21st century?**
J. Newman*, *American Feed Industry Association, Arlington, VA*.

10:05AM 335 **Rethinking and expanding the role of co-products and crop residues as livestock feeds.**
S. S. Donkin*[1] and M. J. Cecava[2], [1]*Purdue University, West Lafayette, IN*, [2]*Archer Daniels Midland Company, Decatur, IL*.

10:50 AM 336 **Feeding low starch diets to swine.**
A. D. Beaulieu*[1] and R. T. Zijlstra[2], [1]*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, [2]*University of Alberta, Edmonton, AB, Canada*.

11:20 AM 337 **Alternatives to starch-based feeding programs for growing and finishing cattle.**
J. J. McKinnon*[1] and T. A. McAllister[2], [1]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

11:50 AM 338 **Ethanol co-products for dairy cows: There goes our starch ... now what?**
H. Paz and P. J. Kononoff*, *University of Nebraska-Lincoln, Lincoln*.

Extension Education I
Chair: Elaine Grings, South Dakota State University
128AB

9:30 AM 339 **The Missouri Show-Me-Select Replacement Heifer Program: A retrospective on marketing and sales.**
J. M. Nash*, N. T. Martin, J. M. Thomas, B. D. Mayhan, M. F. Smith, S. E. Poock, and D. J. Patterson, *University of Missouri, Columbia*.

9:45 AM 340 **The Missouri Show-Me-Select Replacement Heifer Program: Prebreeding reproductive evaluation of heifers and subsequent pregnancy outcome after fixed-time AI.**
J. M. Thomas*, J. M. Nash, N. T. Martin, B. D. Mayhan, M. F. Smith, S. E. Poock, and D. J. Patterson, *University of Missouri, Columbia*.

10:00 AM 341 **The Missouri Beef Project: An industry partnership designed to link economic incentives with technology adoption.**
D. J. Patterson*, D. S. Brown, S. E. Poock, and M. F. Smith, *University of Missouri*.

10:15 AM 342 **Impact of management practices on the value of heifers sold in Texas auction barns.**
K. Stutts*, M. Beverly, S. Kelley, and B. Freel, *Sam Houston State University, Huntsville, TX.*

10:30 AM 343 **Phenotypic characteristics that affect the value of heifers sold in Texas auction barns.**
M. Beverly, S. Kelley*, K. Stutts, and B. Freel, *Sam Houston State University, Huntsville, TX.*

10:45 AM 344 **Beef Excellence Education for You: A program to teach youth about the beef industry.**
L. A. Kriese-Anderson*[1], C. L. Bratcher[1], R. A. Ebert[1], J. B. Elmore[2], R. W. Colquitt[2], and M. K. Stanford[2], [1]*Auburn University, Auburn, AL*, [2]*Alabama Cooperative Extension System, Auburn, AL*.

11:00 AM 345 **A survey of the presence, structure, and effectiveness of Beef Quality Assurance (BQA) or BQA-type programs across the United States.**
J. K. Ahola* and R. J. Urie, *Colorado State University, Fort Collins*.

11:15 AM 346 **National Animal Identification System versus National Livestock Identification System.**
K. Semple[1], M. Robert*[2], and H. Pittman[1], [1]*Department of Primary Industries, Melbourne, Victoria, Australia*, [2]*The National Agricultural Law Center, Fayetteville, AR*.

11:30 AM 347 **Development of the pioneer organic beef supply chain in the Mexican tropics—Promotion of sustainable beef production through integration of extension, education and research.**
P. Fajersson*[1,3] and P. Parada[2], [1]*EcoAgroPec, Hueytamalco, Puebla, Mexico*, [2]*Carnes La Rumorosa, Poza Rica, Veracruz, Mexico*, [3]*Colegio de Postgraduados, Campus Veracruz, Veracruz, Mexico*.

Forages and Pastures I
Chair: Matt Poore, North Carolina State University
225AB

9:30 AM 348 **Sustainable goat farming: Pasture enhancement and identification of suitable forages for goats.**
U. Karki*[1], L. B. Karki[2], N. K. Gurung[1], and A. Elliott[1], [1]*Tuskegee University, Tuskegee, AL*, [2]*PadmaDal Memorial Foundation, Auburn, AL*.

9:45 AM 349 **Effects of co-grazing on herbivory patterns and performance by cattle and goats grazing native tallgrass rangeland infested by sericea lespedeza (*Lespedeza cuneata*).**
L. A. Pacheco*[1], W. H. Fick[2], G. W. Preedy[1], E. A. Bailey[1], D. L. Davis[1], and K. C. Olson[1], [1]*Department of Animal Sciences & Industry, Kansas State University, Manhattan*, [2]*Department of Agronomy, Kansas State University, Manhattan*.

10:00 AM 350 **Effect of different regrowth ages of *Andropogon gayanus* grass silages on intake, digestive efficiency and methane emissions in sheep.**
G. O. Ribeiro Junior*, L. C. Gonçalves, and N. M. Rodriguez, *School of Veterinary, Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*.

10:15 AM 351 **Effects of feeding perennial peanut hay on growth, development, attainment of puberty, and fertility in beef replacement heifers.**
K. M. Bischoff*[1], T. E. Black[1], V. R. G. Mercadante[1], G. H. L. Marquezini[1], R. O. Myer[1], A. T. Adesogan[2], N. DiLorenzo[1], and G. C. Lamb[1], [1]*North Florida Research and Education Center, University of Florida, Marianna*, [2]*Department of Animal Sciences, University of Florida, Gainesville*.

10:30 AM 352 **Effects of different sources of rumen-degradable protein supplementation on performance of cows and calves grazing limpograss stockpiled pastures in Florida.**
A. D. Aguiar*[1], J. M. B. Vendramini[1], J. D. Arthington[1], and L. E. Sollenberger[2], [1]*Range Cattle Research Education Center, Ona, FL*, [2]*University of Florida, Gainesville*.

10:45 AM 353 **Effects of three levels of rumen-undegradable protein supplementation on performance of early weaned calves receiving stargrass.**
J. M. B. Vendramini*[1], J. D. Arthington[1], and L. E. Sollenberger[2], [1]*University of Florida/IFAS Range Cattle Research and Education Center, Ona*, [2]*University of Florida, Department of Agronomy, Gainesville*.

11:00 AM 354 **Ruminal availability of iron in forages.**
Y. L. Huang*[1,2], K. E. Lloyd[1], C. L. Pickworth[1], and J. W. Spears[1], [1]*North Carolina State University, Raleigh*, [2]*Southwest University for Nationalities, Chengdu, Sichuan, China*.

11:15 AM 355 **Nutritional profile of native warm season grass grown as a mono- or multi-species pasture.**
B. S. Oloyede*, B. J. Rude, H. T. Boland, and B. S. Baldwin, *Mississippi State University, Starkville*.

11:30 AM 356 **Using switchgrass to produce stocker cattle gain and bioenergy feedstock I: Production potential.**
J. R. Blanton*, J. T. Biermacher, J. Mosali, and B. J. Cook, *The Samuel Roberts Noble Foundation, Ardmore, OK*.

11:45 AM 357 **Using switchgrass to produce stocker cattle gain and bioenergy feedstock II: Economic potential.**
J. T. Biermacher*, J. Mosali, B. Cook, and J. Blanton, *The Samuel Roberts Noble Foundation Inc., Ardmore, OK*.

12:00 PM 358 **Investigating the nutritive value of *Panicum maximum* leaves for ruminant animals.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

12:15 PM 359 **Evaluating the mineral composition of *Panicum maximum* leaves.**
A. H. Ekeocha* and O. T. Bankole, *University of Ibadan, Ibadan, Oyo, Nigeria*.

Horse Species I
Chair: Carrie Hammer, North Dakota State University
Sponsor: Zinpro Corp.
229AB

9:30 AM 360 **Influence of maternal plane of nutrition and arginine supplementation on mares and their foals: Determination of voluntary dry matter intake of mares during late pregnancy.**
K. N. Winsco*[1], J. A. Coverdale[1], T. A. Wickersham[1], C. J. Hammer[2,3], and J. L. Lucia[1], [1]*Department of Animal Science, Texas A&M University, College Station*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*, [3]*Center for Nutrition and Pregnancy, North Dakota State University, Fargo*.

9:45 AM 361 **The effect of hay steaming on forage quality and intake by horses.**
J. E. Earing*, M. R. Hathaway, C. C. Shaeffer, J. C. Paulson, S. L. Privatsky, and K. L. Martinson, *University of Minnesota, St. Paul*.

10:00 AM 362 **High non-structural carbohydrate diet in ponies alters location and absorptive capacity of glucose, phosphorus and glutamine across the gastrointestinal tract.**
B. E. Aldridge*[1], A. D. Woodward[2], J. S. Radcliffe[1], R. J. Geor[3], L. J. McCutcheon[3], and N. L. Trottier[2], [1]*Purdue University, West Lafayette, IN*, [2]*Michigan State University, Department of Animal Science, East Lansing*, [3]*Michigan State University, Department of Large Animal Clinical Science, East Lansing*.

10:15 AM 363 **Exercise-induced suppression of lymphocyte function is unaffected by a higher level of dietary selenium.**
J. Bobel*, L. K. Warren, and S. White, *University of Florida, Gainesville*.

10:30 AM 364 **Feeding graded amounts of lysine to yearling Thoroughbred colts does not activate the mTOR signaling pathway.**
S. L. Tanner*, L. R. Good, E. A. DeLuca, R. J. Coleman, and K. L. Urschel, *University of Kentucky*.

10:45 AM **Break**

11:00 AM 365 **Influence of oral glucosamine supplementation on young horses in training: Pharmacokinetics.**
J. L. Lucia*[1], K. L. Gehl[1], J. A. Coverdale[1], C. E. Arnold[2], R. Dabareiner[2], and E. D. Lamprecht[3], [1]*Department of Animal Science, Texas A&M University, College Station*, [2]*Large Animal Teaching Hospital, Texas A&M University, College Station*, [3]*Cargill Animal Nutrition, Elk River, MN*.

11:15 AM 366 **Effects of prolonged exercise and citrulline supplementation on metabolic status in equine blood and skeletal muscle.**
S. White*, L. K. Warren, S. E. Johnson, and B. Miller, *University of Florida, Gainesville*.

11:30 AM 367 **Selenium supplementation and immune function.**
M. Brummer*, S. Hayes, A. Betancourt, A. A. Adams, D. W. Horohov, and L. M. Lawrence, *University of Kentucky, Lexington*.

11:45 AM 368 **Effect of strenuous exercise on stallion sperm quality.**
J. L. Rosenberg*, C. A. Cavinder, C. C. Love, M. M. Vogelsang, S. R. Teague, D. H. Sigler, D. D. Varner, and T. L. Blanchard, *Texas A&M University, College Station*.

Lactation Biology II
Chair: Eric Scholljegerdes, New Mexico State Univeristy
122C

9:30 AM 369 **Milk fat synthesis in thyroid hormone responsive spot 14 null mice is acutely responsive to *trans*-10, *cis*-12 conjugated linoleic acid (CLA).**
K. J. Harvatine*[1], M. Tanino[2], Y. R. Boisclair[2], and D. E. Bauman[2], [1]*Penn State University, University Park*, [2]*Cornell University, Ithaca, NY*.

9:45 AM 370 **Increased milk production by Holstein cows consuming endophyte-infected fescue seed during the dry period.**
R. L. Baldwin*[1], A. V. Capuco[1], C. M. Evock-Clover[1], P. Grossi[2], R. K. Choudhary[3], T. H. Elsasser[1], G. Bertoni[2], E. Trevisi[2], D. L. Harmon[4], and K. R. McLeod[4], [1]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD*, [2]*Istituto di Zootecnica, Università Cattolica del Sacro Cuore, Piacenza, Italy*, [3]*Department of Animal and Avian Sciences, University of Maryland, College Park*, [4]*Department of Animal Sciences, University of Kentucky, Lexington*.

10:00 AM 371 **Association between plasma insulin and progesterone concentrations and the composition of milk fatty acids and lipids.**
N. Argov-Argaman*, H. Malka, and R. Mesilati-Stahy, *Animal Science Department, Hebrew University, Rehovot, Israel*.

10:15 AM 372 **Ontogeny of nuclear and cytoplasmic myoepithelial cell markers in pre-weaning Holstein heifers.**
S. Safayi[1], N. Korn[1], A. DiMascio[2], R. M. Akers[3], A. V. Capuco[4], and S. Ellis*[1], [1]*Clemson University, Clemson, SC*, [2]*University of Georgia, Athens*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*, [4]*USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD*.

10:30 AM 373 **Ultrasonographic monitoring of mammary parenchyma growth in preweaned Holstein heifers.**
K. M. Esselburn*[1], T. M. Hill[2], K. M. O'Diam[1], V. A. Swank[1], H. G. Bateman[2], R. L. Schlotterbeck[2], and K. M. Daniels[1], [1]*Department of Animal Sciences, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster*, [2]*Nurture Research Center, Provimi North America, Brookville, OH*.

10:45 AM 374 **Proteomic analysis of the nuclear phosphorylated proteins in dairy cow mammary epithelial cells treated with prolactin.**
J.-G. Huang, X.-J. Gao*, Q.-Z. Li, L. Zhang, F. Zhao, N. Zhang, Y. Lin, and Z. Sun, *Key Lab of Dairy Science, Ministry of Education, Northeast Agriculture University, Harbin, Heilongjiang, China*.

11:00 AM 375 **Analysis of differentially expressed miRNA in dairy cow mammary gland identifies HK2-regulating miRNAs.**
Z. Li*, H. Y. Liu, and J. X. Liu, *Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*.

Meat Science and Muscle Biology Symposium
In Utero Factors that Influence Postnatal Muscle Growth, Carcass Composition, and Meat Quality
Chair: Brian Bowker, USDA-ARS
Sponsors: Cargill Animal Nutrition and EAAP
122AB

9:30 AM 376 **Fetal programming of skeletal muscle mitochondrial function and insulin sensitivity: Perspectives from non-human primates and mouse models.**
J. A. Houck[1], K. L. Grove[2], and C. E. McCurdy*[1], [1]*Department of Pediatrics, University of Colorado*, [2]*National Primate Research Center, Oregon Health and Sciences University*.

10:10 AM 377 **Manipulating mesenchymal progenitor cell differentiation to optimize performance and carcass value of beef cattle.**
M. Du*, *Department of Animal Sciences, Washington State University, Pullman*.

10:50 AM 378 **EAAP-ASAS Speaker Exchange Presentation: In utero nutrition related to fetal development, postnatal growth, and pork quality.**
N. Oksbjerg*, *Aarhus University-Foulum, Dept. of Food Science, Tjele, Denmark*.

11:30 AM 379 **Maternal nutrition on pasture mediates long-term consequences for offspring primarily through effects on growth early in life of beef cattle.**
P. L. Greenwood*, L. M. Cafe, and D. L. Robinson, *Australian Cooperative Research Centre for Beef Genetic Technologies, and NSW Department of Primary Industries, UNE, Armidale NSW, Australia*.

Nonruminant Nutrition
Management/Metabolism
Chair: Ryan Dilger, University of Illinois
222AB

9:30 AM 380 **Diet form and by-product level affect growth performance and carcass characteristics of grow-finish pigs.**
R. S. Fry*, W. Hu, S. B. Williams, N. D. Paton, and D. R. Cook, *Provimi North America, Akey Nutrition and Research Center*.

9:45 AM 381 **Influence of ingredient complexity, feed form, and length of feeding of the phase I diets on nutrient digestibility and productive performance of Iberian pigs.**
J. D. Berrocoso, B. Saldaña, L. Cámara, M. P. Serrano, M. A. Ibáñez, and G. G. Mateos*, *Universidad Politécnica de Madrid, Madrid, Spain*.

10:00 AM 382 **Hepatic gene expression analysis of nursery pigs fed simple and complex starter diets.**
M. Rudar*, L. D. Skinner, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:15 AM 383 **Development and evaluation of a model estimating nitrogen partitioning in lactating sows.**
A. V. Hansen[1], A. B. Strathe[1], P. K. Theil[2], and E. Kebreab*[1], [1]*Department of Animal Science, University of California, Davis*, [2]*Department of Animal Science, Faculty of Science and Technology, Aarhus University, Tjele, Denmark*.

10:30 AM 384 **Dynamics of nitrogen retention in entire male pigs immunized with Improvest.**
L. Huber*, D. Wey, and C. de Lange, *University of Guelph, Guelph, ON, Canada*.

10:45 AM 385 **Effects of dietary protein and lipid levels on growth and stress tolerance of juvenile tilapia (*Oreochromis niloticus*).**
C. G. Hooley*[1], F. T. Barrows[3], J. A. Paterson[1], and W. M. Sealey[2], [1]*Montana State University, Bozeman*, [2]*United States Fish and Wildlife Service, Bozeman, MT*, [3]*US Department of Agriculture, Agriculture Research Service, Bozeman, MT*.

11:00 AM 386 **Comparison of the in vitro fermentation activity of fecal inocula from piglets and dogs.**
S. Brambillasca*, C. Deluca, A. Britos, and C. Cajarville, *Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

11:15 AM 387 **Prediction of voluntary feed intake in weaner pigs using physicochemical properties of bulky diets.**
S. P. Ndou*, M. Chimonyo, and R. M. Gous, *Animal and Poultry Science, University of KwaZulu-Natal, Scottsville, Pietermaritzburg, South Africa*.

Physiology and Endocrinology Symposium:
The Current Status of Heat Shock in Early Embryonic Survival and Reproductive Efficiency
Chair: Robert A. Cushman, USDA-ARS U.S. Meat Animal Research Center
Sponsor: ASAS Foundation
222C

9:30 AM **Introduction**

9:35 AM 388 **Influence of sire breed on heat stress tolerance of in vitro-produced bovine embryos.**
C. M. Barros* and R. A. Satrapa, *Department of Pharmacology, Institute of Biosciences, University of Sao Paulo State, Botucatu, Sao Paulo, Brazil*.

10:05 AM 389 **Associations between heat shock protein 70 genetic polymorphisms and calving traits in crossbred Brahman cows.**
C. Rosenkrans*[1], M. Brown[2], H. Brown[1], and M. Looper[1], [1]*University of Arkansas, Fayetteville*, [2]*USDA-ARS, El Reno, OK*.

10:35 AM **Break**

10:50 AM 390 **Expression of heat shock protein genes and their splice variants in in vivo and in vitro bovine preimplantation embryos.**
H. Khatib*, *University of Wisconsin, Madison*.

11:20 AM 391 **Consequences of heat shock on development of the preimplantation bovine embryo: Role of free radicals, antioxidants, apoptosis, and heat shock proteins.**
P. J. Hansen*[1] and M. Sakatani[2], [1]*University of Florida, Gainesville*, [2]*Kyushu-Okinawa Agricultural Research Center, National Agriculture and Food Research Organization, Kumamoto, Japan*.

11:50 AM **Concluding Questions.**

TUESDAY ORALS

Production, Management and the Environment
Beef Production
Chair: Marcia Endres, University of Minnesota
226ABC

9:30 AM 392 **GPS/GIS technology in range cattle management.**
D. M. Anderson*, *USDA-ARS, Jornada Experimental Range, Las Cruces, NM*.

10:15 AM 393 **Detection of pregnancy in Arizona range cattle using near infrared spectroscopy of feces.**
D. R. Tolleson* and D. W. Schafer, *University of Arizona, V Bar V Ranch, Rimrock*.

10:30 AM 394 **Effect of beef heifer development system on ADG, reproduction, and feed efficiency during first pregnancy.**
A. F. Summers*, T. L. Meyer, S. P. Weber, and R. N. Funston, *University of Nebraska, West Central Research and Extension Center, North Platte*.

10:45 AM 395 **Use of MTB-100, provided through a mineral mix, in a strategic supplementation plan to alleviate the effects of fescue toxicity when lactating beef cows graze endophyte-infected tall fescue.**
M. E. Hoar*, D. K. Aaron, D. G. Ely, and M. M. Simpson, *University of Kentucky, Lexington, Ky, United States*.

11:00 AM 396 **Effects of anti-phospholipase A2 antibody (aPLA2) supplementation on DMI, feed efficiency and blood differentials of steers fed forage and grain-based diets.**
V. R. G. Mercadante*[1], K. M. Bischoff[1], G. H. L. Marquezini[1], J. D. Arthington[2], N. DiLorenzo[1], and G. C. Lamb[1], [1]*North Florida Research and Education Center, University of Florida, Marianna*, [2]*Range Cattle Research and Education Center, University of Florida, Ona*.

11:15 AM 397 **Effects of acclimation to human handling on temperament, physiological responses, and performance of beef steers during feedlot receiving.**
C. L. Francisco*[1,2], R. F. Cooke[1], R. S. Marques[1], T. Leiva[1], F. Sanches[1], A. Bouck[1], F. N. T. Cooke[1], and D. W. Bohnert[1], [1]*Oregon State University, EOARC, Burns*, [2]*Universidade Estadual Paulista - FMVZ/DPA, Botucatu, SP, Brazil*.

11:30 AM 398 **Effects of 24-h transport or 24-h nutrient restriction on acute-phase and performance responses of feeder cattle.**
R. S. Marques*[1], R. F. Cooke[1], C. L. Francisco[1,2], T. Leiva[1], F. Sanches[1], A. Bouck[1], F. N. T. Cooke[1], and D. W. Bohnert[1], [1]*Oregon State University, EOARC, Burns*, [2]*Universidade Estadual Paulista - FMVZ/DPA, Botucatu, SP, Brazil*.

Ruminant Nutrition
Beef Production II
Chair: Aimee Wertz, ADM
131ABC

9:30 AM 399 **Precision processing barley grain improves the feeding value of barley grain in beef cattle.**
W. Z. Yang*[1], M. Oba[2], and T. A. McAllister[1], [1]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

9:45 AM 400 **Effect of rumen degradable energy source on performance and forage intake of steers grazing stockpiled crested wheatgrass pasture.**
F. Anez*[1], J. J. McKinnon[1], H. A. Lardner[1,2], G. B. Penner[1], and P. G. Jefferson[1,2], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada*.

10:00 AM 401 **Effects of sugarcane fiber digestibility and concentrate level on intake and growth of finishing Nellore bulls.**
B. S. Mesquita, D. O. Souza, J. F. Penso, M. H. A. Santana, J. B. S. Ferraz, and L. F. P. Silva*, *Universidade de São Paulo, Pirassununga, SP, Brazil*.

10:15 AM 402 **High dietary sulfur decreases apparent absorption of copper and manganese by steers.**
D. J. Pogge, M. E. Drewnoski*, and S. L. Hansen, *Iowa State University*.

10:30 AM 403 **Comparison of receiving strategies on feedlot performance in beef calves at weaning.**
K. L. Neuhold*[1], J. K. Ahola[1], C. W. Shonk[1,2], T. E. Engle[1], and J. J. Wagner[1,3], [1]*Colorado State University, Fort Collins*, [2]*Agriculture, Research, Development and Education Center, Wellington, CO*, [3]*Southeast Colorado Research Center, Lamar*.

10:45 AM 404 **Determining the influence of dietary NDF concentration from bromegrass hay on performance of steers fed high sulfur diets.**
S. J. Morine*, M. E. Drewnoski, and S. L. Hansen, *Iowa State University, Ames*.

11:00 AM 405 **Effects of method of forage finishing and cattle breed on growth performance, carcass characteristics, meat quality, and fatty acid composition.**
L. Shepherd*[1], R. Berthiaume[2], C. Lafreniere[3], C. Campbell[1], L. Pivotto[1], and I. Mandell[1], [1]*Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Agriculture & Agri-Food Canada, Kapuskasing, ON, Canada*.

11:15 AM 406 **Evaluation of weight gain pattern between 7 and 18 months of age of Hereford heifers and reproductive performance when mated at 18 months of age.**
J. B. G. Costa Junior*[1], J. O. J. Barcellos[1], J. C. Whittier[2], I. D. P. S. Diaz[3], L. Canellas[1], V. Peripolli[1], J. K. Ahola[2], and R. K. Peel[2], [1]*Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*, [2]*Colorado State University, Fort Collins*, [3]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*.

11:30 AM 407 **Evaluation of feed efficiency and feeding behavior traits in performance tested bulls.**
J. G. Moreno*[1], G. E. Carstens[1], D. Crews[2], L. O. Tedeschi[1], L. R. McDonald[3], and S. Williams[3], [1]*Texas A&M University, College Station*, [2]*Colorado State University, Fort Collins*, [3]*Midland Bull Test, Columbus, MT*.

11:45 AM 408 **Ergot alkaloids decrease rumen epithelial blood flow.**
A. P. Foote*[1], N. B. Kristensen[2], J. L. Klotz[3], D. H. Kim[1], A. F. Koontz[1], K. R. McLeod[1], L. P. Bush[1], and D. L. Harmon[1], [1]*University of Kentucky, Lexington*, [2]*Syddansk Kvæg, Vojens, Denmark*, [3]*USDA-ARS, FAPRU, Lexington, KY*.

12:00 PM 409 **Feeding distillers grains as an energy source to gestating and lactating beef heifers: Effect on feedlot performance, carcass characteristics, and glucose tolerance of steer progeny.**
P. J. Gunn*[1], G. A. Bridges[2], R. P. Lemenager[1], and J. P. Schoonmaker[1], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

12:15 PM 410 **Effects of roughage concentration in dry-rolled corn-based diets containing wet distillers grains with solubles on performance and carcass characteristics of finishing beef steers.**
K. E. Hales* and H. C. Freetly, *USDA, ARS, US Meat Animal Research Center, Clay Center, NE*.

Ruminant Nutrition
Dairy Production III
Chair: Guillermo Scaglia, Louisiana State University Ag Center
132ABC

9:30 AM 411 **Impacts of feeding a citrus extract on measures of heat stress, as well as production, of high producing dairy cows during summer heat.**
J. M. Soderstrom*[1], P. H. Robinson[1], and J. M. Clauzel[2], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Phodé Laboratoires, Terssac, France*.

9:45 AM 412 **Meta-analysis of the effects of dietary sugar on intake and productivity of dairy cattle.**
C. F. Vargas*[1], C. D. Reinhardt[1], J. L. Firkins[2], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Ohio State University, Columbus*.

10:00 AM 413 **Potential use of specific milk fatty acids to predict enteric methane emissions from lactating dairy cows.**
K. E. DeLand*, M. Hollmann, J. C. Ploetz, W. J. Powers, D. K. Beede, and A. L. Lock, *Michigan State University, East Lansing*.

10:15 AM 414 **Nitrogen concentration and source alter products from fermentation of glucose by mixed ruminal microbes.**
M. B. Hall*, *U.S. Dairy Forage Research Center, USDA-ARS, Madison, WI.*

10:30 AM 415 **Interactions in rumen pool characteristics by dairy cows fed two concentrations of a novel co-product from corn wet milling with different forage sources.**
D. M. Shepherd*[1], J. L. Firkins[1], and P. von Behren[2], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Cargill Corn Milling, Blaire, NE*.

10:45 AM 416 **Fates of medium-chain fatty acids fed to lactating dairy cows.**
M. Hollmann*[1], M. S. Allen[1], T. H. Herdt[2,3], J. S. Zyskowski[3], K. M. Lebbin[1], J. P. Steibel[1], and D. K. Beede[1], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Large Animal Clinical Sciences, Michigan State University, East Lansing*, [3]*Diagnostic Center for Population and Animal Health, Michigan State University, East Lansing*.

11:00 AM 417 **The effect of rumen digesta inoculation on the time course of recovery from diet induced milk fat depression in dairy cows.**
D. E. Rico*, Y. Ying, A. R. Clarke, and K. J. Harvatine, *Penn State University, University Park.*

11:15 AM 418 **Effect of carbohydrate conformation in hulless barley *(Hordeum vulgare* L.) on in situ rumen and in vitro intestinal nutrient availability.**
L. Yang*[1,3], J. McKinnon[1,3], D. Christensen[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, SK, Canada*.

11:30 AM 419 **Palmitic acid increased milk yield and feed efficiency across production level of lactating cows.**
P. Piantoni*, A. L. Lock, and M. S. Allen, *Michigan State University, East Lansing*.

11:45 AM 420 **Palmitic acid increased the yield of milk fat and improved feed efficiency across production level of cows compared with stearic acid.**
J. E. Rico*, M. S. Allen, and A. L. Lock, *Michigan State University, East Lansing*.

12:00 PM 421 **Linseed oil reduces methane emissions from grazing dairy cows.**
T. M. Boland*[1], K. M. Pierce[1], J. D. Rowntree[1], D. A. Kenny[2], and A. K. Kelly[1], [1]*University College Dublin, Lyons Research Farm, Newcastle, Co. Dublin, Ireland*, [2]*Animal Bioscience Centre, Teagasc, Grange, Dunsany, Co. Meath, Ireland*.

12:15 PM 422 **Effects of different protein supplements on AA availability in dairy cows.**
G. Maxin*, D. R. Ouellet, and H. Lapierre, *Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.

Small Ruminant
Nutrition and Parasites
Chair: R. Reid Redden, North Dakota State University
127C

9:30 AM 423 **Nitrogen balance of growing West African Dwarf ewe fed Mexican sunflower leaf meal based diets.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

9:45 AM 424 **Excess iodine intake by the ewe in late pregnancy programs on the lamb for reduced immunoglobulin G absorption.**
T. M. Boland*, *University College Dublin, Lyons Research Farm, Newcastle, Co. Dublin, Ireland*.

10:00 AM 425 **Effects of different NFC/NDF ratios of TMR on ruminal pH and VFA in meat sheep.**
J. Liu*, Q. Y. Diao, Y. Tu, Y. G. Zhao, X. H. Gao, and L. H. Zhao, *Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China*.

10:15 AM 426 **Protein supplementation of low-quality forage: Effects of amount and frequency on intake and nutrient digestibility by lambs.**
M. L. Van Emon*[1,2], C. S. Schauer[2], and D. W. Bohnert[3], [1]*Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Hettinger Research Extension Center, North Dakota State University, Hettinger*, [3]*Eastern Oregon Agricultural Research Center, Oregon State University, Burns*.

10:30 AM 427 **Effect of feeding differently processed sweet sorghum (*Sorghum bicolor* L. Moench) bagasse based complete diet on nutrient utilization and microbial N supply in growing ram lambs.**
N. Nalini Kumari[1], Y. Ramana Reddy*[1], M. Blummel[2], T. Monika[1], B. V. S. Reddy[3], and Ch. Ravinder Reddy[3], [1]*S. V. Veterinary University, Tirupati, Andhra Pradesh, India*, [2]*International Livestock Research Institute (ILRI), Patancheru, Andhra Pradesh, India*, [3]*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India*.

10:45 AM 428 **Effect of the dietary cation-anion difference on the lactation performances of dairy ewes at early-mid lactation.**
M. M. Youssef, G. Caja*, A. A. K. Salama, A. Ait-Saidi, and E. Albanell, *Grup de Recerca en Remugants (G2R), Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain*.

11:00 AM 429 **Factors affecting dry matter intake of grazing goats in the Brazilian rangelands.**
M. A. D. Bomfim*[1,2], L. O. Tedeschi[2], and N. F. De Paula[3,2], [1]*Embrapa Goats and Sheep, Sobral, Ceara, Brazil*, [2]*Texas A&M University, College Station*, [3]*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

11:15 AM 430 **Effects of diet on carcass quality and consumer taste panel acceptance of intact or castrated hair lambs.**
J. D. Kohler*[1], W. W. Miller[1], J. L. Vest[1], J. M. Burke[2], M. A. Brown[3], K. R. Maddock Carlin[4], M. D. Hudson[1], and E. L. Walker[1], [1]*Missouri State University, Springfield*, [2]*Dale Bumpers Small Farms Research Center, Booneville, AR*, [3]*USDA ARS Grazinglands Research Laboratory, El Reno, OK*, [4]*North Dakota State University, Fargo*.

11:30 AM 431 **Exploring the combined effects of dietary tannins and saponins on sheep infected with *Haemonchus contortus*.**
G. Copani[1], H. Hall[2], J. Miller[3], A. Priolo[1], and J. Villalba*[2], [1]*University of Catania, Catania, Sicily, Italy*, [2]*Utah State University, Logan*, [3]*Louisiana State University, Baton Rouge*.

11:45 AM 432 **Effect of feeding sericea lespedeza pellets on *Haemonchus contortus* in goats.**
D. S. Kommuru*[1], T. H. Terrill[1], N. C. Whitley[2], J. E. Miller[3], and J. M. Burke[4], [1]*Fort Valley State University, Fort Valley, GA*, [2]*North Carolina A&T State University, Greensboro*, [3]*Louisiana State University, Baton Rouge*, [4]*USDA/ARS/DBSFRC, Booneville, AR*.

ASAS/ADSA Northeast Section Symposium
The Future of Animal Agriculture Programs in the Northeast in the Face of Reducing Animal Holdings on Campus
Chair: Heather Dann, William H. Miner Agricultural Research Institute
Sponsor: ASAS/ADSA Northeast Section
122C

2:00 PM **Welcome and Introduction.**
L. Holden, *The Pennsylvania State University*.

2:05 PM 433 **The challenges associated with sustaining livestock farms for undergraduate teaching programs.**
T. Etherton[1], and M. Wilson*[2], [1]*The Pennsylvania State University, University Park*, [2]*West Virginia University, Morgantown*.

2:40 PM 434 **Budgeting for teaching programs in animal science with shrinking resources.**
M. G. Hogberg*, *Iowa State University, Ames*.

3:15 PM 435 **Who are the animal science customers of the future? An industry perspective.**
D. E. Putnam*, *Balchem Corporation, New Hampton, NY*.

3:50 PM **Panel Discussion**

4:10 PM **NE ASAS/ADSA Business Meeting, Awards, and Reception.**

Animal Health IV
Chair: Todd Bilby, Texas AgriLife Research and Extension
228AB

2:00 PM 436 **I. Demographic trends in livestock inventory and number of operations in the United States.**
G. M. Schuenemann* and W. P. Shulaw, *Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*.

2:15 PM 437 **II. Effect of trends in livestock inventory and number of operations on food animal veterinary practices in the United States.**
G. M. Schuenemann* and W. P. Shulaw, *Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*.

2:30 PM 438 **Estimation of genetic parameters for hoof lesions in Canadian Holstein cows.**
N. Chapinal*[1,2], A. Koeck[3], S. Mason[4], A. Sewalem[5,6], D. Kelton[1], and F. Miglior[5,6], [1]*Department of Population Medicine, University of Guelph, Guelph, ON, Canada*, [2]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [3]*Centre for Genetic Improvement of Livestock, Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada*, [4]*Alberta Milk, Edmonton, AB, Canada*, [5]*Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada*, [6]*Canadian Dairy Network, Guelph, ON, Canada*.

2:45 PM 439 **An international overview of the recording and use of functional traits in dairy cattle breeding and management.**
J. B. Cole*[1], K. F. Stock[2], J. Pryce[3], A. Bradley[4], N. Gengler[5], L. Andrews[6], and C. Egger-Danner[7], [1]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [2]*Vereinigte Informationssysteme Tierhaltung w.V. (vit), Verden, Germany*, [3]*Department of Primary Industries, Victorian AgriBiosciences Centre, Bundoora, Victoria, Australia*, [4]*Quality Milk Management Services Ltd., Westbury-sub-Mendip, United Kingdom*, [5]*University of Liège, Gembloux Agro-Bio Tech (GxABT), Animal Science, Gembloux, Belgium*, [6]*Holstein UK, Rickmansworth, United Kingdom*, [7]*ZuchtData EDV-Dienstleistungen GmbH, Vienna, Austria*.

3:00 PM 440 **Effect of intrauterine dextrose therapy on reproductive performance of lactating dairy cows with clinical endometritis.**
M. G. Maquivar*[1], G. M. Schuenemann[1], S. Bas[1], and T. A. Brick[2], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Large Animal Medicine and Surgery Academic Program, St. George's University, Grenada, West Indies*.

3:15 PM 441 **Efficacy of two herbal remedies as alternatives to antibiotic dry cow therapy: preliminary microbiology results.**
K. A. E. Mullen*, R. L. Lyman, S. P. Washburn, and K. L. Anderson, *North Carolina State University, Raleigh*.

3:30 PM 442 **Comparison of low versus high calcium "anionic" diets for prevention of hypocalcemia and milk fever.**
J. P. Goff*[1] and R. L. Horst[2], [1]*Iowa State University, Ames*, [2]*Heartland Assays, Ames, IA*.

3:45 PM 443 **Variation in metabolic, hematologic, and innate immunologic parameters in early postpartum dairy cows is not largely influenced by dairy, days in milk, or parity.**
M. D. Sellers*, A. R. Pepper-Yowell, D. L. Hanson, C. R. Nightingale, C. J. Cobb, B. S. Obeidat, and M. A. Ballou, *Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

4:00 PM 444 **Production and metabolic response of lactating dairy cows supplemented with a dietary antioxidant to intramammary infusion of lipopolysaccharide during thermoneutral and heat stress conditions.**
A. L. Kenny*[1], Y. M. Yang[2], N. M. Barkley[1], R. R. Rodrigues[1], G. I. Zanton[2], and M. R. Waldron[1], [1]*University of Missouri, Columbia*, [2]*Novus International Inc., St. Charles, MO*.

4:15 PM 445 **Potential risk of western juniper-induced abortion in beef cattle.**
C. T. Parsons*[1], D. R. Gardner[2], K. D. Welch[2], D. Cook[2], J. A. Pfister[2], and K. E. Panter[2], [1]*Oregon State University, Corvallis*, [2]*USDA Agricultural Research Service, Poisonous Plant Research Laboratory, Logan, UT*.

4:30 PM 446 **Assessment of daily milk fat and protein composition and the milk fat-protein ratio early postpartum as a predictor for subclinical ketosis in dairy cows.**
F. S. Lima*[1], C. A. Risco[1], R. V. K. Pereira[2], K. N. Galvão[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*Cornell University, Ithaca, NY*.

Breeding and Genetics
Advances in Genomic Methodology
Chair: Katie Olson, ABS Global Inc.
125AB

2:00 PM 447 **Iterative combination of national phenotype, genotype, pedigree, and foreign information.**
P. M. VanRaden*, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*.

2:15 PM 448 **Adaptation of BGF90 package for genomic computations.**
I. Misztal*[1], A. Aguilar[3], S. Tsuruta[1], and A. Legarra[3], [1]*University of Georgia, Athens*, [2]*INIA, Las Brujas, Canelones, Uruguay*, [3]*INRA, UR631 Station d'Amélioration Génétique des Animaux (SAGA), Castanet-Tolosan, France*.

2:30 PM 449 **Methods to include foreign information in national evaluations.**
P. M. VanRaden and M. E. Tooker*, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*.

2:45 PM 450 **Characteristics and use of the Illumina BovineLD BeadChip.**
G. R. Wiggans*[1], P. M. VanRaden[1], T. A. Cooper[1], C. P. Van Tassell[2], T. Sonstegard[2], and B. Simpson[3], [1]*Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*, [2]*Bovine Functional Genomics Laboratory, ARS, USDA, Beltsville, MD*, [3]*GeneSeek, Lincoln, NE*.

3:00 PM 451 **Partitioning genetic (co)variances leading to alternative derivation of single-step type genomic prediction equations allowing joint estimation of GEBV and SNP effects.**
N. Gengler*[1], G. Nieuwhof[2], K. Konstantinov[2], and M. Goddard[3,4], [1]*ULg - Gembloux Agro-Bio Tech, Gembloux, Belgium*, [2]*ADHIS, Bundoora, Australia*, [3]*DPI, Bundoora, Australia*, [4]*University of Melbourne, Melbourne, Australia*.

3:15 PM 452 **Use of canonical discriminant analysis for detecting selection signatures in cattle.**
R. Steri, C. Dimauro, S. Sorbolini, G. Marras, M. Cellesi, G. Gaspa, and N. P. P. Macciotta*, *Dipoartimento di AGRARIA, Università di Sassari, Sassari, Italia*.

3:30 PM 453 **Genome-wide association mapping including phenotypes from relatives without genotypes.**
H. Wang*[1], I. Misztal[1], I. Aguilar[2], A. Legarra[3], and W. Muir[4], [1]*Department of Animal and Dairy Science, University of Georgia, Athens*, [2]*Instituto Nacional de Investigación Agropecuaria, INIA Las Brujas, Canelones, Uruguay*, [3]*INRA, UR631 Station d'Amélioration Génétique des Animaux (SAGA), Castanet-Tolosan, France*, [4]*Department of Animal Science, Purdue University, West Lafayette, IN*.

3:45 PM 454 **Genotyping by sequencing (GBS): A novel, efficient and cost-effective genotyping method in cattle.**
M. De Donato*[1,2], S. O. Peters[1,3], S. E. Mitchell[4], T. Hussain[1,5], and I. G. Imumorin[1], [1]*Department of Animal Science, Cornell University, Ithaca, NY*, [2]*IIBCA, Universidad de Oriente, Cumana, Venezuela*, [3]*Department of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria*, [4]*Institute for Genomic Diversity, Cornell University, Ithaca, NY*, [5]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*.

4:00 PM 455 **Models' predictive ability of breeding values for a small data set of genotyped animals.**
F. M. Rezende*[1], J. B. S. Ferraz[1], F. V. Meirelles[1], J. P. Eler[1], and N. Ibañéz-Escriche[2], [1]*Faculdade de Zootecnia e Engenharia de Alimentos-Universidade de São Paulo, Pirassununga, São Paulo, Brazil*, [2]*Genètica i Millora Animal-IRTA, Lleida, Cataluña, Spain*.

4:15 PM 456 **Improving efficiency of inferring genetic architecture parameters in whole genome prediction models.**
W. Yang* and R. J. Tempelman, *Michigan State University, East Lansing*.

4:30 PM 457 **A multi-compartment model for genomic selection in admixture populations.**
E. Hay*, S. Smith, and R. Rekaya, *University of Georgia, Athens*.

4:45 PM 458 **Bayesian integration of external information into the single step approach for genomically enhanced prediction of breeding values.**
J. Vandenplas*[1,2], I. Misztal[3], P. Faux[1], and N. Gengler[1], [1]*University of Liege - Gembloux Agro-Bio Tech, Gembloux, Belgium*, [2]*National Fund for Scientific Research, Brussels, Belgium*, [3]*University of Georgia, Animal and Dairy Science Department, Athens*.

5:00 PM 459 **Conceptual comparison between standard multiple-trait and structural equation models in animal breeding applications.**
B. D. Valente*, G. J. M. Rosa, X.-L. Wu, D. Gianola, and K. A. Weigel, *University of Wisconsisn, Madison*.

Breeding and Genetics
Beef Cattle Breeding I—Production traits
Chair: D. H. Crews Jr., Colorado State University
123

2:00 PM 460 **Incorporation of external EBV into the American Gelbvieh Association carcass national cattle evaluation.**
S. E. Speidel*[1], R. M. Enns[1], and S. Willmon[2], [1]*Colorado State University, Fort Collins*, [2]*American Gelbvieh Association, Westminster, CO*.

2:15 PM 461 **Across-population estimation of heritability of carcass traits in beef cattle: Meta- vs. mega-analyses.**
H. Okut*[1,3], X.-L. Wu[1], D. Gianola[1], G. J. M. Rosa[1], S. Bauck[2], and B. W. Woodward[2], [1]*University of Wisconsin, Madison*, [2]*Merial Limited, Duluth, GA*, [3]*University of Yuzuncu Yil, Van, Turkey*.

2:30 PM 462 **Accuracies with different genomic models for traits with maternal effects.**
D. A. L. Lourenco*[1], I. Misztal[1], H. Wang[1], I. Aguilar[2], and S. Tsuruta[1], [1]*University of Georgia, Athens*, [2]*Instituto Nacional de Investigación Agropecuaria INIA, Las Brujas, Canelones, Uruguay*.

2:45 PM 463 **Cumulative discounted gene expression for economically relevant traits for terminal and maternal purpose in cattle production system.**
X. Zeng*, B. W. Brigham, S. E. Speidel, D. H. Crews, and R. M. Enns, *Colorado State University, Fort Collins*.

3:00 PM 464 **Cluster and meta analyses of genetic parameters for feed intake traits in beef cattle.**
I. D. P. S. Diaz[1], D. H. Crews*[2], and R. M. Enns[2], [1]*Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil*, [2]*Colorado State University, Fort Collins*.

3:15 PM 465 **Marbling change patterns of rib eye area by slaughter age using random regression sire model.**
K. Kato*, Y. Nakahashi, and K. Kuchida, *Obihiro University of Agriculture & Veterinary Medicine, Obihiro, Japan*.

3:30 PM 466 **Estimation of heterotic effects on stayability in beef cattle.**
E. M. Huff*[1], B. W. Brigham[1], S. Willmon[2], and R. M. Enns[1], [1]*Department of Animal Science, University of Colorado, Fort Collins*, [2]*American Gelbvieh Association, Westminster, CO*.

3:45 PM 467 **Comparison of single breed and admixed reference populations for across-breed prediction of direct genomic breeding values in Red Angus beef cattle.**
M. Saatchi*[1], R. D. Schnabel[2], J. F. Taylor[2], and D. J. Garrick[1,3], [1]*Department of Animal Science, Iowa State University, Ames*, [2]*Division of Animal Science, University of Missouri, Columbia*, [3]*Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand*.

4:00 PM 468 **Adipose and muscle tissue expression of two genes (*NCAPG* and *LCORL*) located in a chromosomal region associated with cattle feed intake and gain.**
A. K. Lindholm-Perry*, A. K. Sexten, L. A. Kuehn, L. A. Rempel, J. R. Miles, R. A. Cushman, and H. C. Freetly, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

4:15 PM 469 **Identification of single nucleotide polymorphisms for feed efficiency and performance in crossbred beef cattle.**
M. K. Abo-Ismail*[1], G. Vander Voort[1], E. J. Squires[1], K. C. Swanson[1,2], J. Thomson[3], B. Karisa[3], G. Plastow[3], S. Moore[3], and S. P. Miller[1,3], [1]*Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, ON, Canada*, [2]*Animal Sciences Department, North Dakota State University, Fargo*, [3]*Faculty of Agricultural, Life and Environmental Sciences, University of Alberta, Edmonton, AB, Canada*.

470 **Withdrawn by author**

4:30 PM 471 **Genetic and environmental influences on movement patterns of beef cattle grazing foothill rangeland.**
D. Bailey*[1], D. Jensen[2], M. Thomas[3], D. Boss[2], and R. Welling[4], [1]*New Mexico State University, Las Cruces*, [2]*Montana State University, Havre*, [3]*Colorado State University, Fort Collins*, [4]*CashCattleBiz.com, Vaughn, MT*.

Cell Biology Symposium
Molecular Basis for Feed Efficiency
Chair: James Sartin, Auburn University
Sponsors: ADSA, ASAS, and EAAP
121AB

2:00 PM **Introduction**

2:05 PM 472 **Unique roles for agouti proteins and melanocortin signaling in lower vertebrates.**
C. Zhang[1,2], P. M. Forlano[3], and R. D. Cone*[1], [1]*Department of Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN*, [2]*Department of Cell and Developmental Biology, Oregon Health Science University, Portland*, [3]*Department of Biology and The Aquatic Research and Environmental Assessment Center, Brooklyn College of The City University of New York, Brooklyn*.

2:50 PM **Introduction**

2:55 PM 473 **The physiological basis defining feed efficiency differences in pigs selected on residual feed intake.**
N. K. Gabler*, J. K. Grubbs, A. Harris, S. M. Cruzen, E. Huff-Lonergan, J. F. Patience, J. C. M. Dekkers, and S. M. Lonergan, *Iowa State University, Ames*.

3:40 PM **Introduction**

3:45 PM 474 **EAAP-ADSA Speaker Exchange Presentation: Genetics of feed efficiency in dairy and beef cattle.**
D. P. Berry*[1] and J. J. Crowley[2], [1]*Teagasc, Moorepark Dairy Production Research Center, Fermoy, Co. Cork, Ireland*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

4:30 PM **Introduction**

4:35 PM 475 **Feed efficiency: Mitochondrial function to global gene expression.**
W. G. Bottje* and B.-W. Kong, *Department of Poultry Science, Center of Excellence for Poultry Science, University of Arkansas, Fayetteville*.

Companion Animals Symposium
Impact of Anthropomorphism on Companion and Captive Animal Husbandry
Chair: Greg Aldrich, Pet Food & Ingredient Technology Inc.
Sponsors: Hill's Science Diet, Procter and Gamble, and Purina
121C

2:00 PM **Introduction**

2:05 PM 476 **Capitalizing on human health trends to improve feline health and wellbeing.**
M. R. Lappin*, *Department of Clinical Sciences, Colorado State University, Fort Collins*.

2:40 PM 477 **Effect of anthropomorphism on companion and captive animal husbandry.**
T. M. Edling*, *Petco Animal Supplies Inc., San Diego, CA*.

3:15 PM 478 **Companion animal and captive animal husbandry: The balance between what animals need and what people think they need.**
M. S. Edwards*, *California Polytechnic State University, San Luis Obispo*.

3:50 PM 479 **Antimicrobial cathelicidin peptides: What are they and how do they help protect the dog?**
T. Melgarejo* and F. Blecha, *Kansas State University, Manhattan*.

4:25 PM 480 **New findings in the obligate carnivore-omnivore debate: Regulation of macronutrient intake in cats and dogs.**
A. K. Hewson-Hughes*[1], V. L. Hewson-Hughes[1], A. Colyer[1], A. T. Miller[1], S. M. McGrane[1], S. R. Hall[1], R. F. Butterwick[1], S. J. Simpson[2], and D. Raubenheimer[3], [1]*Waltham Centre for Pet Nutrition, Waltham-on-the-Wolds, Leicestershire, UK*, [2]*University of Sydney, Sydney, Australia*, [3]*Massey University, Auckland, New Zealand*.

Dairy Foods Symposium
Bioactive Components in Milk and Dairy Products: Recent international perspectives and progress in different dairy species
Chair: Young Park, Fort Valley State University
Sponsor: EAAP
122AB

2:00 PM **Introduction**
Y. Park, *Fort Valley State University, Fort Valley, GA*.

2:05 PM 481 **Bioactive components in cow milk and products.**
H. J. Korhonen*, *MTT Agrifood Research Finland, Jokioinen, Finland*.

2:35 PM 482 **Bioactive components in buffalo milk and products.**
M. Guo*, *University of Vermont, Burlington*.

3:05 PM **Break**

3:20 PM 483 **Bioactive components in goat milk and products.**
Y. W. Park*, *Fort Valley State University, Fort Valley, GA*.

3:50 PM 484 **EAAP-ADSA Speaker Exchange Presentation: Bioactive components in sheep milk and products.**
M. A. de la Fuente* and M. Juarez, *Instituto de Investigacion en Ciencias de la Alimentacion, Madrid, Spain*.

4:20 PM 485 **Biosynthesis and secretion of bioactive compounds in milk in relation to genetic, molecular, and endocrine mechanisms.**
R. M. Akers*, *Virginia Tech, Blacksburg*.

Forages and Pastures II
Chair: Limin Kung, University of Delaware
225AB

2:00 PM 486 **Corn hybrid and plant density effects on corn silage quality and yield.**
D. B. Burken*, J. L. Harding, T. C. Hoegemeyer, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska-Lincoln, Lincoln*.

2:15 PM 487 **Characterization of aerobic deterioration of corn silage treated with stabilizers.**
C. Merrill*, A. P. T. P. Roth, M. A. Santos, M. C. Der Bedrosian, and L. Kung, *University of Delaware, Newark*.

2:30 PM 488 **Exogenous fibrolytic enzyme effects on preingestive fiber hydrolysis and release of sugars and phenolics from bermudagrass haylage.**
J. J. Romero*[1], K. G. Arriola[1], M. A. Zarate[1], C. R. Staples[1], C. F. Gonzalez[2], W. Vermerris[3], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida, Gainesville*, [2]*Department of Microbiology and Cell Science, IFAS, University of Florida, Gainesville*, [3]*Department of Agronomy, IFAS, University of Florida, Gainesville*.

2:45 PM 489 **Indigestible NDF in predictions of grass and red clover silage digestibility.**
S. J. Krizsan*[1], H. M. Alamouti[2], and P. Huhtanen[1], [1]*Swedish University of Agricultural Sciences, Department of Agricultural Research for Northern Sweden, Umeå, Sweden*, [2]*Zanjan University, Department of Animal Science, Zanjan, Iran*.

3:00 PM 490 **The effect of inoculants containing *Lactobacillus buchneri* on the fermentation of alfalfa silage harvested at two dry matters.**
M. C. Der Bedrosian*, B. G. Case, M. C. Santos, J. Lim, and L. Kung, *University of Delaware, Newark*.

3:15 PM 491 **Alfalfa/grass mixtures yield more DM, CP, NDF, and dNDF than alfalfa in monocultures.**
J. Paulson*, D. Holen, and P. Peterson, *University of Minnesota, St. Paul*.

3:30 PM 492 **Effect of land clearing and tillage methods on weed incidence under maize-cassava inter-cropping system.**
A. H. Ekeocha*, *University of Ibadan, Ibadan, Oyo, Nigeria*.

3:45 PM 493 **Agronomic characteristics of pearl millet genotypes for forage production in southwestern Nigeria.**
B. Ogunlolu*, A. Jolaosho, O. Onifade, B. Oduguwa, and P. Dele, *Department of Pasture and Range Management, University of Agriculture, Abeokuta, Ogun State, Nigeria*.

4:00 PM 494 **Influence of sample preparation technique on masticate fiber content collected from esophageally fistulated cattle.**
K. L. Gillespie*, J. A. Musgrave, L. A. Stalker, T. J. Klopfenstein, and S. K. Pruitt, *University of Nebraska, Lincoln*.

4:15 PM 495 **Influence of pre-collection diet and squeezing on crude protein content of masticate collected from fistulated cattle.**
J. A. Musgrave*, K. L. Gillespie, S. K. Pruitt, L. A. Stalker, and T. J. Klopfenstein, *University of Nebraska, Lincoln*.

4:30 PM 496 **Variability and implications of indigestible neutral detergent fiber in C3 and C4 forages.**
E. Raffrenato*[1,4], D. M. McNeill[2], D. G. Barber[3], M. N. Callow[3], and D. P. Poppi[1], [1]*School of Agriculture and Food Sciences, The University of Queensland, Gatton, Queensland, Australia*, [2]*School of Veterinary Science, The University of Queensland, Gatton, Queensland, Australia*, [3]*Agri-Science Queensland, Department of Employment, Economic Development and Innovation, Lawes, Queensland, Australia*, [4]*Department of Animal and Wildlife Sciences, University of Pretoria, Pretoria, Gauteng, South Africa*.

4:45 PM 497 **Fecal NIRS relationship with intake and diet digestibility of grazed Bahiagrass by cows determined by n-alkanes.**
S. W. Coleman*[1], C. C. Chase[2], and D. G. Riley[3], [1]*USDA ARS, El Reno, OK*, [2]*USDA ARS, Clay Center, NE*, [3]*Texas Agrilife, College Station*.

5:00 PM 498 **Dry season nutrient availability of vegetation species selected by the African elephant (*Loxodanta africana*) in the Pongola Game Reserve, South Africa.**
E. Cuthbert*, P. Yu, and D. A. Christensen, *University of Saskatchewan, Saskatoon, SK, Canada*.

Horse Species II
Chair: Carrie Hammer
229AB

2:00 PM 499 **Estimation of ideal body weight in horses and ponies using morphometric measurements.**
K. Martinson*[1], R. Coleman[2], J. Earing[1], A. Rendahl[1], and M. McCue[1], [1]*University of Minnesota, St. Paul*, [2]*University of Kentucky, Lexington*.

2:15 PM 500 **Influence of maternal plane of nutrition and arginine supplementation on mares and their foals: Glucose and insulin dynamics.**
A. E. Hanson*[1], K. N. Winsco[1], J. A. Coverdale[1], C. J. Hammer[2], and A. N. Wolford[1], [1]*Texas A&M University, College Station*, [2]*North Dakota State University, Fargo*.

2:30 PM 501 **Prevalence of internal parasites and anthelmintic efficacy in horses in relation to age, season and housing system.**
E. R. Share*, J. M. Reddish, C. Dyer, K. Koke, K. Barnhart, P. Sparks, and K. Cole, *The Ohio State University, Columbus*.

2:45 PM 502 **Antibiotic therapy disrupts equine fecal microflora.**
B. E. Davis*[1], L. M. Lawrence[1], M. D. Flythe[2,1], S. H. Hayes[1], G. L. Gellin[2], L. A. Strasinger[1], M. Brummer[1], and A. L. Fowler[1], [1]*University of Kentucky, Lexington*, [2]*United States Department of Agriculture, Agricultural Research Service, Forage-Animal Production Research Unit, Lexington, KY.*

3:00 PM 503 **Influence of probiotics on microflora in the gastrointestinal and reproductive tracts of horses.**
K. Barnhart*[1], J. M. Reddish[1], C. Dyer[1], J. Saul[1], M. A. Coutinho da Silva[2], and K. Cole[1], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Department of Veterinary Clinical Sciences, The Ohio State University, Columbus*.

3:15 PM 504 **Effects of weight distribution on movement of mature riding horses.**
H. Roberts*, J. M. Reddish, and K. Cole, *The Ohio State University, Columbus*.

Nonruminant Nutrition
Feed Ingredients
Chair: Ryan Dilger, University of Illinois
222AB

2:00 PM 505 **Energy, phosphorus, and amino acid digestibility in Lemna protein concentrate, fish meal, and soybean meal fed to weanling pigs.**
O. J. Rojas* and H. H. Stein, *University of Illinois, Urbana*.

2:15 PM 506 **Amino acid digestibility in camelina seeds and camelina expellers fed to growing pigs.**
F. N. Almeida*[1], J. K. Htoo[2], J. Thomson[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Evonik Industries AG, Hanau, Germany*, [3]*Evonik Degussa Corporation, Kennesaw, GA*.

2:30 PM 507 **Withdrawal patterns of DDGS on performance, belly firmness, and fatty acids in pigs—A cooperative study.**
G. L. Cromwell*, M. J. Azain, O. Adeola, S. K. Baidoo, S. D. Carter, T. D. Crenshaw, G. M. Hill, P. S. Miller, J. F. Patience, M. C. Shannon, and H. H. Stein, *NCCC-42 Committee on Swine Nutrition, University of Kentucky, Lexington*.

2:45 PM 508 **Wheat-DDGS pig finishing diet reduces feed cost but does not improve net profit of production.**
G. A. Mastromano*, M. R. Ashby, R. C. Roberson, J. M. Scheffler, and J. Escobar, *Virginia Tech University, Blacksburg*.

3:00 PM 509 **The effects of corn- or sorghum-based diets with or without sorghum dried distillers grains and solubles on lactating sow and litter performance.**
K. M. Sotak*, R. D. Goodband, M. D. Tokach, J. M. DeRouchey, S. S. Dritz, and J. L. Nelssen, *Kansas State University, Manhattan*.

3:15 PM **Break**

3:30 PM 510 **Amino acid digestibility in blood products fed to weanling pigs.**
F. N. Almeida*[1], J. K. Htoo[2], J. Thomson[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Evonik Industries AG, Hanau, Germany*, [3]*Evonik Degussa Corp., Kennesaw, GA*.

3:45 PM 511 **Amino acid digestibility in hydrolyzed feather meal fed to pigs.**
F. N. Almeida*[1], L. I. Chiba[2], S. D. Brotzge[2], R. L. Payne[3], and H. H. Stein[1], [1]*University of Illinois, Urbana*, [2]*Auburn University, Auburn, AL*, [3]*Evonik-Degussa Corp., Kennesaw, GA*.

4:00 PM 512 **Nutritive value and relationship between nutrient content and protein quality of soybean meals according to origin.**
G. G. Mateos*[1], M. P. Serrano[1], M. González[2], S. Sueiro[2], M. Hermida[2], R. Lázaro[1], and P. G. Rebollar[1], [1]*Universidad Politécnica de Madrid, Madrid, Spain*, [2]*Laboratorio de Mouriscade, Pontevedra, Spain*.

4:15 PM 513 **Influence of soybean meal source and micronization (fine grinding) of soybean meal on productive performance and digestive traits of Iberian pigs from 30 to 51 days of age.**
J. D. Berrocoso*, M. P. Serrano, L. Camara, P. G. Rebollar, A. Lopez, R. Abad, and G. G. Mateos, *Universidad Politecnica de Madrid, Madrid, Spain*.

4:30 PM 514 **Net portal absorption of amino acids in Iberian pigs fed with acorn.**
J. M. Rodriguez-Lopez, M. Lachica, L. Gonzalez-Valero, and I. Fernandez-Figares*, *CSIC (Spanish National Research Council), Granada, Spain*.

4:45 PM 515 **Gas production, in vitro organic matter disappearance, volatile fatty acid concentrations and physicochemical characteristics of fibrous sources for pigs.**
M. Chimonyo* and S. P. Ndou, *Animal and Poultry Science, Pietermaritzburg, South Africa*.

Physiology and Endocrinology
Pregnancy
Chair: George Perry, South Dakota State University
222C

2:00 PM 516 **Membrane progesterone receptors (α, β, and γ) in early pregnancy.**
R. L. Ashley*, S. M. Stanbrough, K. E. Quinn, J. D. Lindsey, and A. K. Ashley, *New Mexico State University, Las Cruces*.

2:15 PM 517 **Expression of PRSS, the plasminogen activator system and its activity in the ovine placentome during stage 2 of parturition.**
A. K. McNeel*, R. A. Cushman, and J. L. Vallet, *USDA, ARS US Meat Animal Research Center, Clay Center, NE*.

2:30 PM 518 **Physiological responses to repeated transportation of gestating Brahman cows.**
D. M. Price*[1], A. W. Lewis[1], D. A. Neuendorff[1], J. A. Carroll[2], T. H. Welsh[3], R. C. Vann[4], and R. D. Randel[1], [1]*Texas Agrilife Research, Texas A&M University System, Overton*, [2]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [3]*Texas Agrilife Research, Texas A&M System, College Station*, [4]*MAFES, Mississippi State University, Raymond*.

2:45 PM 519 **Reduced fertility in female progeny from beef heifers on dietary restriction during development.**
S. E. Echternkamp*, D. R. Eborn, and R. A. Cushman, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

3:00 PM 520 **The impact of cow nutrient status during the second and third trimester on development of the reproductive axis and fertility of daughters.**
R. A. Cushman*, A. K. McNeel, and H. C. Freetly, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

3:15 PM 521 **Feeding distillers grains as an energy source to gestating and lactating beef heifers: Impact on growth, puberty attainment and reproductive processes in female progeny.**
P. J. Gunn*[1], J. P. Schoonmaker[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

3:30 PM 522 **Chronic uterine infusion of melatonin or melatonin receptor antagonist alters ovine placental efficiency and fetal blood flow during mid-gestation.**
C. O. Lemley*, L. E. Camacho, and K. A. Vonnahme, *North Dakota State University, Fargo*.

3:45 PM 523 **Influence of metabolizable protein supplementation during late gestation on vasoreactivity of maternal placental arteries in sheep.**
L. A. Lekatz*[1], A. Reyaz[1], M. S. Sane[2], F. Yao[2], S. T. O'Rourke[2], C. Schwartz[1], M. L. Van Emon[3], C. S. Schauer[3], K. M. Carlin[1], C. O. Lemley[1], and K. A. Vonnahme[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Department of Pharmaceutical Sciences, North Dakota State University, Fargo*, [3]*Hettinger Research Extension Center, North Dakota State University, Hettinger*.

4:00 PM 524 **Transgenerational effects of n-3 and n-6 supplementation under the control of transcription factors related to lipid metabolism.**
C. B. Jacometo[1], S. Halfen[1], F. T. da Rosa[1], A. Schneider[1], C. C. Brauner[1], F. A. B. Del Pino[1], J. J. Loor[2], N. J. L. Dionello[1], L. F. M. Pfeifer[3], E. Schmitt*[1], and M. N. Corrêa[1], [1]*Federal University of Pelotas, Pelotas, Rio Grande do Sul, Brazil*, [2]*University of Illinois, Urbana*, [3]*Embrapa Rondônia, Porto Velho, RO, Brazil*.

Production, Management and the Environment
Dairy
Chairs: Stephanie Hill-Ward, Mississippi State University, and Marcia Endres, University of Minnesota
227AB

2:00 PM 525 **Use of electrical conductivity for the detection of subclinical mastitis in dairy cows in Saudi Arabia.**
A. Alyemni[1,2], R. Aljummah[2], M. Ayadi[2], M. Hussein[2], and M. Alshaikh*[2], [1]*Arasco, Riyadh, Saudi Arabia*, [2]*King Saud University, Riyadh, Saudi Arabia*.

2:15 PM 526 **Effect of feeding duration on growth, health, and economics of group-fed dairy calves in an organic production system.**
B. J. Heins* and E. A. Bjorklund, *University of Minnesota, West Central Research and Outreach Center, Morris*.

2:30 PM 527 **Survey of lameness, body condition score, hygiene, and hock lesions of Colorado dairy cows housed in outdoor dirt lots or free stalls with outdoor access.**
R. Woiwode*, T. Grandin, and I. Roman-Muniz, *Colorado State University, Fort Collins*.

2:45 PM 528 **Economics of using sheath protectors at the time of AI in dairy cows.**
S. Bas*[1], K. N. Galvão[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

3:00 PM 529 **Effect of AI technicians on reproductive performance and economics of lactating dairy cows.**
G. M. Schuenemann*[1], S. Bas[1], and K. A. Galvão[2], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Large Animal Clinical Sciences, University of Florida, Gainesville*.

3:15 PM 530 **The effect of reproductive performance on the herd value assessed by integrating a daily dynamic programming with a daily Markov chain model.**
A. S. Kalantari* and V. E. Cabrera, *Department of Dairy Science, University of Wisconsin-Madison, Madison*.

3:30 PM 531 **Regression meta-models to predict the value of pregnancy in dairy cows.**
A. De Vries*, *University of Florida, Gainesville*.

3:45 PM 532 **Effect of heat stress during the dry period on immune function and growth performance of the offspring fed standardized pooled colostrum.**
A. P. A. Monteiro*, S. Tao, I. M. Thompson, and G. E. Dahl, *University of Florida, Gainesville*.

4:00 PM 533 **Accuracy of the AfiLab real time milk analyzer to predict DHIA fat, DHIA protein and lactose.**
K. Kanyiamattam*, K. D. Gay, E. J. Diepersloot, D. R. Bray, C. R. Staples, and A. De Vries, *University of Florida, Gainesville*.

4:15 PM 534 **Potential utility of a parlor-based individual quarter milking system.**
A. E. Sterrett*, C. L. Wood, K. J. McQuerry, and J. M. Bewley, *University of Kentucky*.

4:30 PM 535 **Reducing dietary protein decreased the ammonia-emitting potential of manure from commercial dairy farms.**
A. N. Hristov*, K. Heyler, E. Schurman, K. Griswold, P. Topper, M. Hile, V. Ishler, E. Wheeler, and S. Dinh, *The Pennsylvania State University, University Park*.

4:45 PM 536 **Dose effects of monensin on methane emissions from lactating Holstein dairy cattle.**
S. E. Place*[1], Y. Pan[1], Y. Zhao[1], C. E. Moore[2], J. K. Wittman[2], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California-Davis, Davis*, [2]*Elanco Animal Health, Greenfield, IN*.

5:00 PM 537 **Characterization of Shanghai dairy cattle lactation performance in 2008.**
C. G. Zhang[1], G. L. Liu*[1,2], L. M. Huang[1], Z. G. Wang[1], and G. Yang[1], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd., Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co., Ltd., Shanghai, China*.

Ruminant Nutrition
Beef Production III
Chair: Shawn Archibeque, Colorado State Universiry
131ABC

2:00 PM 538 **Effect of the forage-to-concentrate ratio on DMI and ruminal fermentation based on timing of feeding relative to feed restriction.**
R. I. Albornoz*[1], J. R. Aschenbach[2], D. R. Barreda[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Free University of Berlin, Berlin, Germany*, [3]*University of Alberta, Edmonton, AB, Canada*.

2:15 PM 539 **Rumen and cecum methane emissions between steers that are either negative or positive for residual gain.**
H. Freetly*, K. Hales, and J. Wells, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.

2:30 PM 540 **Evaluation of a complete-feed (RAMP) receiving diet.**
C. J. Schneider*[1], B. L. Nuttelman[1], W. A. Griffin[1], D. B. Burken[1], R. A. Stock[2], T. J. Klopfenstein[1], and G. E. Erickson[1], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Cargill Inc., Blair, NE*.

2:45 PM 541 **Effects of RAMP on feed intake and ruminal pH during adaptation to finishing diets.**
C. J. Schneider*[1], A. L. Shreck[1], R. A. Stock[2], T. J. Klopfenstein[1], and Galen Erickson[1], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Cargill Inc., Blair, NE*.

3:00 PM 542 **Effect of maturity on the yield and in situ digestibility of whole-crop cereals.**
C. L. Rosser*[1], A. Beattie[1], H. C. Block[2], J. J. McKinnon[1], H. A. Lardner[1,3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Agriculture and Agri-Food Canada, Brandon, MB, Canada*, [3]*Western Beef Development Centre, Humbolt, SK, Canada*.

3:15 PM 543 **Rumen bacterial population responses to inclusion of wet distillers grains plus solubles in finishing diets of feedlot cattle.**
G. M. Shipp*[1], W. E. Pinchak[2], D. W. Pitta[3], B. Milligan[4], S. L. Ivey[4], and J. C. MacDonald[1], [1]*Texas AgriLife Research, Amarillo*, [2]*Texas AgriLife Research, Vernon*, [3]*Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, Kennett Square*, [4]*New Mexico State University, Las Cruces*.

3:30 PM 544 **Effect of sugarcane fiber digestibility and mode of conservation on intake and rumen pH of growing Nellore steers.**
D. O. Souza, B. S. Mesquita, J. Diniz-Magalhães, F. D. Rodriguez, B. S. Marques, and L. F. P. Silva*, *Universidade de São Paulo, Pirassununga, SP, Brazil*.

3:45 PM 545 **Impact of diet on the abundance and diversity of fecal *Escherichia coli* shed from cattle in overwintering environments.**
K. Christiuk*, D. O. Krause, K. Ominski, T. De Kievit, and E. Khafipour, *University of Manitoba, Winnipeg, Manitoba, Canada*.

4:00 PM 546 **Comparison of different supplemental cobalt forms on fiber digestion and cobalamin levels.**
W. L. Kelly*[1], C. K. Larson[2], M. K. Petersen[1], and R. C. Waterman[1], [1]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*, [2]*Zinpro Corporation, Eden Prairie, MN*.

4:15 PM 547 **Comparison of animal and dietary effects on ruminal methanogens and their association with protozoa in beef cattle.**
M. Zhou*[1], M. Hünerberg[1], K. A. Beauchemin[2], T. A. McAllister[2], E. K. Okine[1], and L. L. Guan[1], [1]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*, [2]*Agriculture and Agri-Food Canada Lethbridge Research Centre, Lethbridge, Alberta, Canada*.

548 **Withdrawn by author**

4:30PM 549 **Assessing how RFI classification in the growing phase predicts RFI classification in the finishing phase.**
D. Johns*, G. Vander Voort, C. Campbell, M. Quinton, and I. Mandell, *Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*.

Ruminant Nutrition
Dairy: Feed additives
Chair: Rick Kohn, University of Maryland
132ABC

2:00 PM 550 **Effects of trace mineral source on oxidative metabolism, subclinical endometritis, and performance of transition dairy cows.**
T. Yasui*[1], C. M. Ryan[1], R. O. Gilbert[1], K. Perryman[2], and T. R. Overton[1], [1]*Cornell University, Ithaca, NY*, [2]*Micronutrients Inc., Indianapolis, IN*.

2:15 PM 551 **Effects of essential oils on methane production, fermentation, abundance and diversity of rumen microbial populations.**
A. Patra[1,2] and Z. Yu*[1], [1]*The Ohio State University, Columbus*, [2]*West Bengal University of Animal and Fishery Sciences, Kolkata, India*.

2:30 PM 552 **Effect of dietary fat and Rumensin on ruminal bacteriome revisited using metagenomic analysis.**
M. Kim[1], M. Morrison[2,1], M. Eastridge[1], and Z. Yu*[1], [1]*The Ohio State University, Columbus*, [2]*CSIRO Livestock Industries, St Lucia, QLD, Australia*.

2:45 PM 553 **Effect of dietary potassium on water intake and rumen dynamics.**
S. E. Fraley*[1], M. B. Hall[2], and T. D. Nennich[1], [1]*Purdue University, West Lafayette, IN*, [2]*USDA-ARS, Madison, WI*.

3:00 PM 554 **Effects of rumensin in lactating dairy cow diets with differing starch levels.**
M. S. Akins*[1], K. L. Perfield[2], H. B. Green[2], and R. D. Shaver[1], [1]*Department of Dairy Science, University of Wisconsin-Madison, Madison*, [2]*Elanco Animal Health, Greenfield, IN*.

3:15 PM 555 **Feeding blood meal or two rumen-protected lysine sources in early lactation dairy cows and the effect of withdrawal on production parameters.**
J. E. Nocek*[1] and I. Shinzato[2], [1]*Spruce Haven Farm and Research Center, Auburn, NY*, [2]*Ajinomoto Heartland Inc., Chicago, IL*.

3:30 PM 556 **Evaluation of dietary betaine (BET) in heat-stressed Holstein cows in lactation.**
L. W. Hall*[1], F. R. Dunshea[2], J. D. Allen[1], A. Wood[1], S. D. Anderson[1], S. Rungruang[1], J. L. Collier[1], N. M. Long[1], and R. J. Collier[1], [1]*The University of Arizona, Tucson*, [2]*The University of Melbourne, Parkville, Vic, Australia*.

3:45 PM 557 **Effect of dietary phytate on phosphorus digestibility in dairy cows.**
P. P. Ray* and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg*.

4:00 PM 558 **Application of rumen-protected lysine to lower crude protein diets for lactating dairy cows.**
J. P. Pretz*[1], M. J. de Veth[2], R. S. Ordway[2], and M. J. Brouk[1], [1]*Kansas State University, Manhattan*, [2]*Balchem Corp., New Hampton, NY*.

4:15 PM 559 **A meta-analysis of the effects of feeding yeast culture produced by anaerobic fermentation of *Saccharomyces cerevisiae*, on milk production of lactating dairy cows.**
G. D. Poppy*[1,2], A. R. Rabiee[3], I. J. Lean[3], W. K. Sanchez[2], K. L. Dorton[2], and P. S. Morley[1], [1]*Colorado State University, Fort Collins*, [2]*Diamond V, Cedar Rapids, IA*, [3]*SBScibus, Camden, NSW, Australia*.

4:30 PM 560 **Impact of feeding yeast culture under normal and SARA conditions in lactating dairy cows.**
S. Li*[1], E. Tesfaye[1], H. Khazanehei[1], M. Scott[2], I. Yoon[2], E. Khafipour[1], and J. C. Plaizier[1], [1]*University of Manitoba, Winnipeg, MB, Canada*, [2]*Diamond V, Cedar Rapids, IA*.

4:45 PM 561 **Effects of chromium propionate supplementation during the periparturient period and early lactation on metabolism, performance, and subclinical endometritis in dairy cows.**
T. Yasui*[1], J. A. A. McArt[1], C. M. Ryan[1], R. O. Gilbert[1], D. V. Nydam[1], F. Valdez[2], and T. R. Overton[1], [1]*Cornell University, Ithaca, NY*, [2]*Kemin Industries, Des Moines, IA*.

Ruminant Nutrition II
Chair: Guillermo Scaglia, Louisiana State University Ag Center
129AB

2:00 PM 562 **Study of effects of conjugated linoleic acid (CLA) on milk production and composition, and milk fatty acid profile of Holstein dairy cows.**
A. Mahdavi*, K. Rezayazdi, A. Z. Shahneh, and M. Dehghan-Banadaky, *Department of Animal Science, College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran*.

2:15 PM 563 **Measurement and regression models of methane emissions from sheep.**
Y.-G. Zhao, C.-G. Jiang, J. Liu, Y. Tu, K.-D. Deng, X.-H. Gao, and Q.-Y. Diao*, *Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China*.

2:30 PM 564 **Response of postpartum dairy cows to contrasting feeding strategies: Grazing plus supplements versus confinement on milk and solids production.**
M. Sprunck[1,2], D. A. Mattiauda[1], G. Motta[1], M. Fajardo[1], and P. Chilibroste*[1], [1]*Facultad de Agronomía, Paysandú, Paysandú, Uruguay*, [2]*Agencia Nacional de Investigación e Innovación, Montevideo, Montevideo, Uruguay*.

2:45 PM 565 **Effects of rumen-protected γ-aminobutyric acid on feed intake, performance and antioxidant status in transition cows.**
D. M. Wang*[1], C. Wang[1,2], H. Y. Liu[1], and J. X. Liu[1], [1]*Institute of Dairy Science, MoE Key laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*, [2]*College of Forestry and Biotechnology, Zhejiang A & F University, Lin'an, Hangzhou, China*.

3:00 PM 566 **Productive performance by lactating cows fed with different levels of Palm kernel cake.**
R. L. Oliveira*[1], R. L. N. Vaz Silva[2], A. C. Ferreira[1], A. G. Leão[1], M. C. A. Santana[1], A. A. Pinheiro[1], O. L. Ribeiro[1], and L. F. B. Pinto[1], [1]*Universidade Federal da Bahia, Salvador, BA, Brazil*, [2]*Instituto Federal Baiano, Catu, BA, Brazil*.

3:15 PM 567 **Effect of ruminal adaptation on short-chain fatty acid absorption and risk for ruminal acidosis.**
T. Schwaiger*[1,2], K. A. Beauchemin[2], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Lethbridge Research Center, Lethbridge, AB, Canada*.

3:30 PM 568 **Effect of simultaneous reduction of ruminally degradable protein and ruminally undegradable protein in dairy cattle.**
M. Aguilar* and M. D. Hanigan, *Virginia Polytechnic Institute and State University, Blacksburg*.

3:45 PM 569 **Effects of dietary forage-to-concentrate ratio and sulfur concentration on ruminal fermentation and sulfur metabolism in feedlot heifers.**
S. Amat*, J. J. McKinnon, G. B. Penner, E. Simko, and S. Hendrick, *University of Saskatchewan, Saskatoon, SK, Canada*.

4:00 PM 570 **Intake, digestibility and microbial protein synthesis in heifers fed pasture, total mixed ration or both.**
A. Santana*[1], A. Perez-Ruchel[2], C. Cajarville[2], and J. L. Repetto[1], [1]*Facultad de Veterinaria, UdelaR, Depto. Bovinos, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, UdelaR, Depto. Nutrición, Montevideo, Uruguay*.

4:15 PM 571 **A technology that enhances the utilization of low quality forages in ruminant animals.**
H.-L. Mao[1], H.-L. Mao[1], J. K. Wang*[1], J. A. Ye[1], J. X. Liu[1], and I. Yoon[2], [1]*Institute of Dairy Science, Zhejiang University, Hangzhou, China*, [2]*Diamond V, Cedar Rapids, IA*.

4:30 PM 572 **In vitro manipulation of Jersey cow rumen ecology with microbes from the wildebeest, horse and zebra.**
F. N. Fon* and I. V. Nsahlai, *University of KwaZulu-Natal, Pietermaritzburg, South Africa*.

4:45 PM 573 **Growth curve analysis of Sahiwal calves up to six-month age given milk or milk replacer up to weaning.**
M. S. Khan[1], S. A. Bhatti*[2], and H. A. Ahmad[3], [1]*Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Pakistan*, [2]*Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan*, [3]*Dept. Biology, Jackson State University, Jackson, MS.*

Small Ruminant Symposium
Novel Uses of Natural Bioactive Compounds in Small Ruminant Production and Future Directions
Chair: Sandra Solaiman, Tuskegee University
127C

2:00 PM **Introduction**
S. Solaiman, *Tuskegee University*.

2:05 PM 574 **Bioactive compounds and their mode of action in forage-fed ruminants.**
T. N. Barry*, *Massey University, Palmerston North, New Zealand*.

2:35 PM 575 **Consequences of plant secondary compounds on ruminant nutrition.**
B. R. Min* and S. Solaiman, *Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL*.

3:05 PM **Break**

3:15 PM 576 **Bioactive compounds for control of internal parasites.**
T. H. Terrill*, *Fort Valley State University, Fort Valley, GA*.

3:45 PM 577 **Emerging opportunities and challenges on exploitation of bioactive plant secondary compounds to mitigate environmental impacts by ruminants.**
J.-S. Eun*[1] and B. R. Min[2], [1]*Utah State University, Logan*, [2]*Tuskegee University, Tuskegee, AL*.

4:15 PM 578 **Bioactive plant compounds and food safety.**
R. C. Anderson*, *Southern Plains Agricultural Research Center, United States Department of Agriculture/Agricultural Research Service, College Station, TX.*

4:45 PM **Discussion**

Swine Species
Chair: J. Scott Radcliffe, Purdue University
128AB

2:00 PM 579 **Industry productivity analysis: Grow-finish traits.**
C. E. Hostetler*[1] and M. T. Knauer[2], [1]*National Pork Board, Des Moines, IA*, [2]*North Carolina State University, Raleigh*.

2:15 PM 580 **Periweaning failure to thrive syndrome in nursery pigs is associated with gastrointestinal lesions, but not enteric pathogens.**
C. K. Jones*, D. M. Madson, R. G. Main, N. K. Gabler, and J. F. Patience, *Iowa State University, Ames*.

2:30 PM 581 **Umbilical vein blood-oxygen relationship with pre-weaning growth in piglets.**
E. A. Hale*[1], T. J. Safranski[1], M. C. Lucy[1], J. N. Rhoades[1], J. W. Ross[2], N. K. Gabler[2], R. P. Rhoads[3], and L. H. Baumgard[2], [1]*University of Missouri, Columbia*, [2]*Iowa State University, Ames*, [3]*Virginia Tech, Blacksburg*.

2:45 PM 582 **Breed difference of porcine sirtuin 1 and its regulation by insulin.**
Y. Ren*, T. Z. Shan, L. N. Zhu, J. Huang, and Y. Z. Wang, *Institute of Animal Science, Zhejiang University, Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Key Laboratory of Feed and Animal Nutrition of Zhejiang Province, Hangzhou, Zhejiang Province, China*.

3:00 PM **Break**

3:30 PM 583 **Growth response and blood profile of weaner pigs fed additive-enhanced agro-industrial by-product based diet.**
A. O. K. Adesehinwa*[1], O. O. Mgbere[2], O. O. Obi[1], B. A. Makanjuola[1], and I. A. Okere[1], [1]*Institute of Agricultural Research & Training, Obafemi Awolowo University, Ibadan, Oyo State, Nigeria*, [2]*Hatfield International Biometrical Service Centre, Houston, TX*.

3:45 PM 584 **An evaluation of the effects of a blend of essential oil compounds (Crina Piglets AF), a feed-grade antibiotic program, and their combination in nursery diets on the growth and economic performance of pigs in a commercial research facility.**
J. Bergstrom*[1], D. Campbell[1], C. Paulus[2], and M. DeBeer[1], [1]*DSM Nutritional Products, Parsippany, NJ*, [2]*DSM Nutritional Products, Kaiseraugst, Switzerland*.

4:00 PM 585 **Dietary antioxidant (Agrado Plus) sparing vitamin E in nursery pigs fed distillers dried grains with solubles (DDGS).**
J. Zhao*[1], T. Engle[2], T. Wineman[1], M. Vazquez-Anon[1], and R. J. Harrell[1], [1]*Novus International Inc., St. Charles, MO*, [2]*Colorado State University, Fort Collins*.

Teaching/Undergraduate and Graduate Education
Graduate and Undergraduate Teaching
Chair: Mark Hanigan, Virginia Polytechnic Institute and State University
223

2:00 PM 586 **Gender has a substantial impact on student success in introductory animal science courses.**
C. G. Jackson*[1], B. J. Williams[2], and E. P. Berg[1], [1]*North Dakota State University, Fargo*, [2]*Hutchinson Community College, Hutchinson, KS.*

2:15 PM 587 **Meeting the changing needs of animal science majors.**
G. M. Hill* and J. E. Link, *Michigan State University, East Lansing*.

2:30 PM 588 **Addressing agricultural and societal issues using a variety of teaching methods.**
E. L. Walker*, *Missouri State University, Springfield*.

2:45 PM 589 **Assessing the land-grant mission through undergraduate demographic data: A quantitative approach.**
S. Archibeque-Engle* and K. Pond, *Colorado State University, Fort Collins*.

3:00 PM 590 **Student perceptions of ethics and animal intelligence influenced by introductory animal science course.**
A. L. Adams*, G. A. Holub, W. S. Ramsey, and T. H. Friend, *Texas A&M University, College Station*.

3:15 PM 591 **Background experience affects student perceptions of the livestock industry.**
A. L. Adams*, G. A. Holub, W. S. Ramsey, and T. H. Friend, *Texas A&M University, College Station*.

3:30 PM 592 **Beef production student instructional video project.**
C. L. Pickworth*[1,3] and S. Boyles[2], [1]*The Ohio State University, Wooster*, [2]*The Ohio State University, Columbus*, [3]*North Carolina State University, Raleigh*.

3:45 PM 593 **Integrated program for reducing bovine respiratory disease complex (BRDC) in beef and dairy cattle, coordinated agricultural project (CAP): overview of the teaching program.**
M. G. Thomas*[1], G. R. Hagevoort[2], T. T. Ross[2], R. M. Enns[1], H. Van Campen[1], A. L. Van Eenennaam[3], H. L. Neibergs[4], C. Chase[5], S. V. Dindot[6], N. D. Cohen[6], and J. E. Womack[6], [1]*Colorado State University, Fort Collins*, [2]*New Mexico State University, Las Cruces*, [3]*University of California, Davis*, [4]*Washington State University, Pullman*, [5]*South Dakota State University, Brookings*, [6]*Texas A&M University, College Station*.

4:00 PM 594 **Why your school should host a Block and Bridle National Convention.**
M. W. Orth*, *Michigan State University, East Lansing*.

4:15 PM 595 **Enhancing the student learning experience through an undergraduate research program.**
E. L. Karcher* and N. L. Trottier, *Department of Animal Science, Michigan State University, East Lansing*.

4:30 PM 596 **Implementation of a capstone experience requirement in animal and poultry sciences.**
C. M. Wood*, D. M. Denbow, E. A. Dunnington, and R. K. Splan, *Virginia Tech, Blacksburg*.

4:45 PM 597 **The Graduate Experience Program: An opportunity for undergraduates to explore graduate study.**
E. L. Berg*[1], A. M. Meyer[2], and L. A. Lekatz[1], [1]*North Dakota State University, Fargo*, [2]*University of Wyoming, Laramie*.

WSASAS Symposium
Growing Beef Cattle—The future of stocker/backgrounding systems in beef production
Chair: Gerald Horn, Oklahoma State University
Sponsors: ASAS Foundation and Western Section ASAS
226ABC

2:00 PM 598 **ASAS Early Career Achievement Award: Improving the production, environmental, and economic efficiency of the stocker cattle industry in the Southeastern United States.**
P. Beck*[1], M. Anders[2], B. Watkins[2], S. Gunter[3], D. Hubbell[4], and S. Gadberry[5], [1]*University of Arkansas, Southwest Research & Extension Center, Hope*, [2]*University of Arkansas Rice Research & Extension Center, Stuttgart*, [3]*USDA-ARS Southern Plains Range Research Station, Woodward, OK*, [4]*University of Arkansas Livestock & Forestry Research Station, Batesville*, [5]*University of Arkansas Cooperative Extension Service, Little Rock*.

2:30 PM 599 **Growth, development, and the expression of genes in marketable tissues.**
P. A. Lancaster*[1], E. D. Sharman[1], M. A. Vaughn[2], C. R. Krehbiel[1], G. W. Horn[1], J. D. Starkey[2], and U. DeSilva[1], [1]*Oklahoma State University, Stillwater*, [2]*Texas Tech University, Lubbock*.

3:10 PM 600 **Opportunities for grazing cattle systems.**
J. C. MacDonald*[1,2] and F. T. McCollum[3], [1]*Texas AgriLife Research, Amarillo*, [2]*West Texas A&M University, Canyon*, [3]*Texas AgriLife Extension, Amarillo*.

3:50 PM 601 **Opportunities for drylot backgrounding systems in the beef industry.**
B. P. Holland*, *Department of Animal Science, South Dakota State University, Brookings*.

4:30 PM **Wrap-Up: Summary and future research directions.**
G. Horn, *Oklahoma State University*.

Wednesday, July 18

POSTER PRESENTATIONS

Animal Behavior and Well-Being
Behavior Emphasis

W1 **Ruminal fermentation and behavior in Simmental heifers fed TMR with non-forage fiber sources in feedlots.**
S. P. Iraira*, J. L. Ruíz de la Torre, M. Rodríguez-Prado, X. Manteca, S. Calsamiglia, and A. Ferret, *Universitat Autònoma Barcelona, Bellaterra, Spain*.

W2 **Foraging behavior of beef cows grazing native grassland: Effect of herbage allowance on temporal and spatial grazing patterns.**
S. Scarlato*[1], M. Carriquiry[1], M. Do Carmo[1], A. Faber[1], C. Genro[3], E. Laca[2], and P. Soca[1], [1]*Unviersidad de la República, Paysandu Uruguay*, [2]*University of California, Davis*, [3]*Embrapa, Bage, Bage, RS, Brazil*.

W3 **Feeding behavior of grazing buffalo calves fed different types of supplement in tropical conditions.**
R. M. Patiño*, L. G. Altahona, and L. M. Botero, *University of Sucre, Sincelejo, Colombia*.

W4 **Effects of housing systems on behavioral responses of newborn Holstein calves.**
S. V. Matarazzo*[1], T. T. Fonseca[1], J. R. P. Arcaro[2], F. P. Campos[2], and S. A. de A. Fernandes[3], [1]*Universidade Estadual de Santa Cruz, UESC, Ilhéus, BA, Brazil*, [2]*Instituto de Zootecnia de Nova Odessa, Nova Odessa, SP, Brazil*, [3]*Universidade Estadual do Sudoeste da Bahia, Itapetinga, BA, Brazil*.

W5 **A preliminary study on the behavior of rodeo animals just prior to bucking events.**
E. A. Pajor*[1], T. Grandin[2], G. B. Bond[1], and C. Goldhawk[1], [1]*University of Calgary, Calgary, Alberta, Canada*, [2]*Colorado State University, Fort Collins*.

W6 **Determining the effects of castration with or without analgesia on growth performance, hematology, and behavior in neonatal beef cattle.**
A. C. Brown*[1], J. G. Powell[1], M. S. Gadberry[2], E. B. Kegley[1], J. T. Richeson[3], J. L. Reynolds[1], and Y. V. Thaxton[1], [1]*University of Arkansas Division of Agriculture, Fayetteville*, [2]*University of Arkansas Division of Agriculture, Little Rock*, [3]*West Texas A&M University, Canyon*.

W7 **Pain and pessimism: Dairy calves show negative bias in judgment tasks following hot-iron disbudding.**
H. W. Neave*, M. A. G. von Keyserlingk, and D. M. Weary, *University of British Columbia, Vancouver, BC, Canada*.

W8 **'The effect of previous experience on the adaptation to headlocks by Holstein dairy cows.**
P. D. Krawczel* and J. M. Hale, *Department of Animal Science, University of Tennessee, Knoxville*.

W9 **Lying behavior of lactating dairy cows is influenced by lameness especially around feeding time.**
C. Yunta*[1], I. Guasch[2], and A. Bach[1,3], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Barcelona, Spain*, [2]*La Pirenaica, La Seu d'Urgell, Lleida, Spain*, [3]*ICREA, Barcelona, Spain*.

W10 **Effect of grouping calves post-weaning according to pre-grouping feed intake on eating behavior.**
C. M. Matuk*[1], M. Chahine[1], A. Bach[2,3], B. Ozer[1], M. E. de Haro Marti[4], J. B. Glaze[1], T. Fife[1], and M. Nelson[1], [1]*University of Idaho, Twin Falls*, [2]*IRTA, Caldes de Montbui, Spain*, [3]*ICREA, Barcelona, Spain*, [4]*University of Idaho, Gooding*.

W11 **Association between behavioral patterns and risk of elevated somatic cell count in lactating dairy cows.**
M. E. A. Watters[1], K. Meijer[1], H. W. Barkema[2], K. E. Leslie[3], M. A. G. von Keyserlingk[4], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Production Animal Health, University of Calgary, Calgary, Alberta, Canada*, [3]*Dept. of Population Medicine, University of Guelph, Guelph, Ontario, Canada*, [4]*Animal Welfare Program, University of British Columbia, Vancouver, British Columbia, Canada*.

W12 **Association of social rank during the prepartum period with health, reproduction, and milk production of dairy cows.**
K. M. Lobeck*, M. I. Endres, P. R. B. Silva, and R. Chebel, *University of Minnesota, St. Paul*.

W13 **To move or not to move: When should dairy cows be moved to maternity pens?**
K. L. Proudfoot*[1], M. B. Jensen[2], and M. A. G. von Keyserlingk[1], [1]*University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Aarhus University, Tjele, Denmark*.

W14 **Web forums as a method for engagement on contentious issues in dairying: Should cows have access to pasture?**
M. A. G. von Keyserlingk*, C. A. Schuppli, and D. M. Weary, *University of British Columbia, Vancouver, BC, Canada*.

W15 **Social learning of feeding behavior in weaned pigs: Effects of the familiarity with conspecific model on flavor preferences.**
J. Figueroa*, D. Solà-Oriol, J. F. Pérez, and X. Manteca, *Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

W16 **Effect of feeding DDGS diets on behaviors of gestating sows in different housing systems.**
Y. Z. Li*[1], L. J. Johnston[1], S. K. Baidoo[2], C. E. Phillips[3], L. H. Wang[1], X. L. Xie[1], and G. C. Shurson[3], [1]*West Central Research and Outreach Center, University of Minnesota, Morris*, [2]*Southern Research and Outreach Center, University of Minnesota, Waseca*, [3]*Dept. Animal Science, University of Minnesota, St Paul*.

W17 **Piglet behavior as a measure of viability.**
R. Muns, E. G. Manzanilla, X. Manteca, and J. Gasa*, *Servei de Nutrició i Benestar Animal, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

W18 **Habitat selection and ranging patterns of the African elephant (*Loxodanta africana*) in the Pongola game reserve, South Africa.**
E. Cuthbert*, F. M. van Beest, D. A. Christensen, and R. Brook, *University of Saskatchewan, Saskatoon, SK, Canada*.

Animal Health III

W19 **Impaired vitamin E status in post-partum dairy cows as a complication of left displaced abomasum.**
G. Bobe*, K. Lytle, and M. Traber, *Oregon State University, Corvallis*.

W20 **Validation of three sampling strategies for estimating lameness prevalence in dairy herds.**
A. Hoffman[1], D. A. Moore*[1], J. R. Wenz[1], and J. Vanegas[2], [1]*Washington State University*, [2]*Oregon State University*.

W21 **Effects of feeding endophyte-infected fescue seed to Holstein cows during the dry period on plasma nitric oxide (NO), xanthine oxidase (XO), and haptoglobin (Hp) status in newborn calves.**
S. Kahl*[1], T. H. Elsasser[1], R. L. Baldwin[1], A. V. Capuco[1], P. Grossi[2], and K. R. McLoad[3], [1]*USDA, Agricultural Research Service, Beltsville, MD*, [2]*Istituto di Zootecnica, Università Cattolica, Piacenza, Italy*, [3]*University of Kentucky, Lexington*.

W22 **Leukocyte profiles of cows with claw horn disorders.**
K. K. M. O'Driscoll* and B. Earley, *Teagasc, Animal & Grassland Research and Innovation Centre, Grange, Dunsany, Co. Meath, Ireland*.

W23 **Investigation on a bio-hygienizing additive for oral use in dairy cows: Effect on milk somatic cell count.**
P. Luparia*[1], M. Poggianella[1], and V. Bronzo[2], [1]*SOP srl, Busto Arsizio, VA, Italy*, [2]*Universita di Milano, Milan, Italy*.

W24 **Oral administration of lipopolysaccharide and lipoteichoic acid modulated innate and humoral immunity in periparturient dairy cows.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada*.

W25 **Repeated oronasal administration of lipopolysaccharide modulated selected markers of innate and humoral immune responses in periparturient dairy cows.**
S. Iqbal*, Q. Zebeli, D. A. Mansmann, S. M. Dunn, and B. N. Ametaj, *University of Alberta, Edmonton, Alberta, Canada*.

W26 **Effect of polyunsaturated fatty acids (PUFA) on the infection of bovine epithelial cells with *Chlamydia psittaci*.**
A. Jaudszus[1], M. Grün[1], G. Jahreis[1], K. Sachse[2], and H. Sauerwein*[3], [1]*Institute of Nutrition, Department of Nutritional Physiology, Friedrich Schiller University Jena, Jena, Germany*, [2]*Institute of Molecular Pathogenesis, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Jena, Germany*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, Germany*.

W27 **Immune status of dairy calves in the northern plains of Costa Rica: Year 1.**
J. A. Elizondo-Salazar*[1], J. Sánchez-Salas[1], G. Arroyo-Quesada[2], E. González-Arias[2], and A. J. Heinrichs[3], [1]*Estación Experimental Alfredo Volio Mata. Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica*, [2]*Programa de Transferencia Tecnológica, Cooperativa de Productores de Leche R. L. Dos Pinos*, [3]*The Pennsylvania State University, University Park*.

W28 **Effects of Calibrin-Z on weanling pigs fed diets with naturally occurring deoxynivalenol.**
F. Chi[1], S. L. Johnston*[1], and D. C. Mahan[2], [1]*Amlan International Inc., Chicago, IL*, [2]*The Ohio State University, Columbus*.

W29 **Reproductive toxicity of liquid dishwashing detergent on male Swiss albino mice.**
A. Ata, M. S. Gulay*, S. Gungor, O. Yildiz Gulay, and A. Demirtas, *Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkiye*.

W30 **Valuation of antimicrobial activities of 29 kinds of Chinese herbs against *E. coli*.**
L. C. Xiao[1,2], X. F. Kong[1], M. Q. Huang[1,2], X. Q. Guo[2], and Y. L. Yin*[1], [1]*Research Center for Healthy Breeding of Livestock and Poultry and Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*College of Animal Science and Technology, Jiangxi Agricultural University, Nanchang, Jiangxi, China*.

W31 **Putrescine stimulates the mammalian target of rapamycin signaling pathway and protein synthesis in porcine trophectoderm cells.**
X. F. Kong[1,2], B. E. Tan[1,2], Y. L. Yin*[1], L. A. Jaeger[3], F. W. Bazer[2,3], and G. Y. Wu[1,2], [1]*Research Center for Healthy Breeding of Livestock and Poultry and Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Faculty of Nutrition and Department of Animal Science, Texas A&M University, College Station*, [3]*Department of Veterinary Integrative Biosciences, Texas A&M University, College Station*.

W32 **Dietary arginine supplementation confers immunostimulatory effects on inactivated *Pasteurella multocida* vaccines immunized mice.**
W. K. Ren[1], Y. L. Yin*[1], L. X. Zhou[2], Y. Wang[2], and Y. Peng[2], [1]*Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*, [2]*Chongqing Key Laboratory of Forage & Herbivorce, College of Animal Science and Technology, Southwest University, Chongqing, China*.

W33 **Prevalence of clinical and subclinical ketosis at 8 and 30 days in milk and its relationships with parity, dry period length, peak milk yield and change in body condition score in a Jersey herd in the highlands of Costa Rica.**
J. M. l. Sánchez* and A. Saborío, *Centro de Investigaciones en Nutrición Animal. Universidad de Costa Rica, San José, Costa Rica*.

W34 **Effects of soy isoflavones on the male reproductive regulation in Huanjiang male pigs.**
X. Yuan[1], L. Li[1], J. Fan[1,2], B. Zhang*[2], C. Xiao[3], and Y. Yin[1], [1]*Institute of Subtropical Agriculture, the Chinese Academy of Science, Changsha, Hunan, China*, [2]*College of Animal Sciences, Hunan Agricultural University, Changsha, Hunan, China*, [3]*Nutrition Research Division, Food Directorate, Health Products and Food Branch, Health Canada, Ottawa, Canada*.

W35 **Estimate of serum IgG concentration using refractometry with or without caprylic acid fractionation.**
K. M. Morrill*[1], A. Lago[3], J. Polo[3], J. D. Quigley[3], and H. D. Tyler[2], [1]*Cornell Cooperative Extension, Westport, NY*, [2]*Iowa State University, Ames*, [3]*APC Inc., Ankeny, IA*.

W36 **Haptoglobin is a potential early indicator of postpartal diseases.**
D. Sabedra[1], E. Ramsing[1], C. Shriver-Munsch[1], J. Males[1], W. Sanchez[2], I. Yoon[2], and G. Bobe*[1], [1]*Oregon State University, Corvallis*, [2]*Diamond V, Cedar Rapids, IA*.

W37 **Bovine hepatic retinol binding protein gene expression and its relationship with tumor necrosis factor-α.**
P. Rezamand[1], K. M. Hunt[1], J. S. Watts[1], J. D. Blickenstaff*[1], B. J. Bradford[2], and L. K. Mamedova[2], [1]*University of Idaho, Moscow*, [2]*Kansas State University, Manhattan*.

W38 **Dried citrus pulp modulates the physiological and acute phase responses of crossbred heifers to an endotoxin challenge.**
N. C. Burdick*[1], J. T. Cribbs[2], J. A. Carroll[1], T. R. Callaway[3], T. B. Schmidt[4], B. J. Johnson[2], and R. J. Rathmann[2], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [3]*USDA-ARS, Food and Feed Safety Research Unit, College Station, TX*, [4]*Mississippi State University, Department of Animal and Dairy Science, Mississippi State*.

Beef Species

W39 **Survey of beef quality assurance on California dairies.**
S. Aly[1], H. Rossow[1], G. Acetoze*[2], T. Lehenbauer[1], M. Payne[3], D. Meyer[2], J. Maas[4], and B. Hoar[3], [1]*Veterinary Medicine Teaching and Research Center, School of Veterinary Medicine, University of California-Davis, Tulare*, [2]*Department of Animal Science, University of California-Davis, Davis*, [3]*Western Institute of Food Safety and Security, University of California-Davis, Davis*, [4]*Veterinary Medicine Extension, School of Veterinary Medicine, University of California-Davis, Davis*.

W40 **Effects of stabilizing oxidative balance through dietary means on growth performance, antioxidant metabolites and fertility factors in bulls.**
T. J. Wistuba*, M. Becker, S. Court, and G. I. Zanton, *Novus International Inc., St. Charles, MO*.

W41 **Phenotypic correlations of the residual intake and gain with ultrasound carcass traits and other feed efficiency measures in Nellore cattle.**
R. C. Gomes*[1], S. L. Silva[2], M. H. A. Santana[2], J. B. S. Ferraz[2], P. Rossi[3], and P. R. Leme[2], [1]*Department of Animal Science, State University of Londrina, Londrina, Parana, Brazil*, [2]*College of Animal Science and Food Engineering, University of Sao Paulo, Pirassununga, Sao Paulo, Brazil*, [3]*Federal University of Parana, Curitiba, Parana, Brazil*.

W42 **Estimation of genetic parameters for carcass and image analysis traits of Japanese Black (Wagyu) in Australia.**
S. Maeda*[1], J. Grose[2], and K. Kuchida[1], [1]*Obihiro University of A&VM, Obihiro, Hokkaido, Japan*, [2]*Wagyu Genetics Pty Ltd., Brisbane, QLD, Australia*.

W43 **Effect of different feeding system on the fatty acid and lipid oxidation of raw and cooked meat of Sarda-Bruna young bulls.**
S. P. G. Rassu, R. Boe, R. Rubattu, A. Mazza, G. Pulina, and A. Nudda*, *Dipartimento di Agraria, Sezione di Scienze Zootecniche, Università di Sassari, Sassari, Italy*.

W44 **Analysis of twin births, calf stillbirth, abortion and calf death before 28 days of age in Irish Charolais and Limousin populations.**
A. M. Doyle*[1], R. D. Evans[2], and A. G. Fahey[1], [1]*School of Agriculture and Food Science, University College Dublin, Ireland*, [2]*Irish Cattle Breeding Federation, Bandon, Co. Cork, Ireland*.

W45 **The effect of limiting feed intake on visceral organ mass and performance in the pregnant beef cow.**
K. M. Wood*[1], C. J. Fitzsimmons[2,3], S. P. Miller[1], I. B. Mandell[1], B. W. McBride[1], and K. C. Swanson[4], [1]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Edmonton, AB, Canada*, [3]*Dept. of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

W46 **Whole cottonseed can promote as much rumination activity as barley straw when incorporated in TMR fed beef heifers at finishing period.**
S. P. Iraira*, J. L. Ruíz de la Torre, M. Rodríguez-Prado, X. Manteca, S. Calsamiglia, and A. Ferret, *Universitat Autònoma Barcelona, Bellaterra, Spain*.

W47 **Protein supplementation of low-quality forage: Effects of amount and frequency on cow performance and intake and nutrient digestibility by steers.**
D. W. Bohnert[1], R. F. Cooke[1], B. I. Cappellozza[1], D. L. McGuire*[1], and S. J. Falck[2], [1]*Eastern Oregon Agricultural Research Center, Oregon State University, Burns*, [2]*Eastern Oregon Agricultural Research Center, USDA-ARS, Burns*.

W48 **Using corn stover and DDGS to conserve stockpiled forages and improve reproductive performance and progeny growth in fall-calving beef cows.**
P. J. Gunn*[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

W49 **Meta-analysis on the effects of supplementing distiller's grains to beef cows during early lactation on reproductive efficiency and pre-weaning progeny growth.**
P. J. Gunn*[1], J. P. Schoonmaker[1], R. P. Lemenager[1], and G. A. Bridges[2], [1]*Department of Animal Sciences, Purdue University, West Lafayette, IN*, [2]*North Central Research and Outreach Center, University of Minnesota, Grand Rapids*.

W50 **Effects of water stress and plant population on corn plant yields and composition.**
S. Soderlund, C. J. Fagan, A. T. Hassen, and F. N. Owens*, *Pioneer Hi-Bred International, a DuPont Business, LaSalle, CO*.

W51 **Prediction of preweaning ADG in beef calves from milk fatty acid methyl esters.**
Z. Deng*[1], M. A. Brown[2], Y. Peng[3], S. Coleman[2], and R. G. Mateescu[1], [1]*Oklahoma State University, Stillwater*, [2]*USDA-ARS, Grazinglands Research Laboratory, El Reno, OK*, [3]*Xi'an Vertexe Electronics Technology Co. Ltd., Xi'an, Shaanxi, China*.

W52 **Correlation of IGF-1, growth hormone, and leptin to breeding beef heifer productivity.**
C. J. Mueller*[1], D. Keisler[2], H. DelCurto[1], and T. DelCurto[1], [1]*Eastern Oregon Agricultural Research Center, Oregon State University, Union*, [2]*University of Missouri, Columbia*.

W53 **Exposure of prepubertal beef bulls to cycling females does not enhance sexual development.**
N. Miller* and K. Fike, *Kansas State University, Manhattan*.

Breeding and Genetics
Molecular Biology and Genomics

W54 **Protection and stabilization of whole blood at room temperature does not influence DNA yield, purity, and integrity.**
R. Flores*[1], M. Udtha[1], J. E. Sanner[1], E. A. Backes[2], L. S. Wilbers[2], and J. D. Caldwell[2], [1]*The University of Texas Health Science Center at Houston, Houston*, [2]*Lincoln University, Jefferson City, MO*.

W55 **Maximum differences analysis: An empirical method for genome-wide association studies.**
M. Cellesi, N. P. P. Macciotta*, G. Pulina, G. Gaspa, and C. Dimauro, *Dipartimento di Agraria, Universitá di Sassari, Italy*.

W56 **Adjustment of selection index coefficients and polygenic variance to improve regressions and reliability of genomic evaluations.**
P. M. VanRaden, J. R. Wright*, and T. A. Cooper, *Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD*.

W57 **Use of canonical discriminant analysis to distinguish among three bovine breeds by using a low number of selected SNP markers.**
C. Dimauro*, M. Cellesi, R. Steri, S. Sorbolini, and NPP Macciotta, *Dipartimento di Agraria, Universitá di Sassari, Sassari, Italy*.

W58 **Reliability of genomic breeding values at different reference population's designs when some or all animals are genotyped.**
M. Pszczola[1,3], T. Strabel*[3], J. A. M. van Arendonk[2], and M. P. L. Calus[1], [1]*Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Lelystad, the Netherlands*, [2]*Animal Breeding and Genomics Centre, Wageningen University, Wageningen, the Netherlands*, [3]*Department of Genetics and Animal Breeding, Poznan University of Life Sciences, Poznan, Poland*.

W59 **Dealing with uncertainty of dependent variables in genome wide association studies.**
S. Smith*, E. H. Hay, and R. Rekaya, *University of Georgia, Athens*.

W60 **Increased use of young bulls in dairy cattle breeding programs.**
H. D. Norman, J. L. Hutchison*, and J. B. Cole, *Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD*.

W61 **Accuracy and bias for final score in US Holsteins from adding genomic information on bulls and cows.**
S. Tsuruta*[1], I. Misztal[1], and T. J. Lawlor[2], [1]*University of Georgia, Athens*, [2]*Holstein Association USA Inc., Brattleboro, VT*.

W62 **SNPs that affect microRNA binding sites in the bovine ACACA gene are associated with polyunsaturated fatty acid (PUFA) content of Canadian Holstein cows.**
E. M. Ibeagha-Awemu*[1], K. A. Akwanji[2], Z. Wang[3], and X. Zhao[2], [1]*Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Department of Animal Science, McGill University, Ste-Anne-De-Bellevue, QC, Canada*, [3]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*.

W63 **Genomic-polygenic evaluation of postweaning weight and ultrasound carcass traits in an Angus-Brahman multibreed population.**
M. A. Elzo*[1], C. A. Martinez[1], G. C. Lamb[1], D. D. Johnson[1], M. G. Thomas[2], I. Misztal[3], D. O. Rae[1], J. G. Wasdin[1], and J. D. Driver[1], [1]*University of Florida, Gainesville*, [2]*Colorado State University, Fort Collins*, [3]*University of Georgia, Athens*.

W64 **Genomic-polygenic evaluation of Angus-Brahman cattle for carcass traits with the Illumina 3K chip.**
M. A. Elzo*[1], G. Hu[1], C. A. Martinez[1], G. C. Lamb[1], D. D. Johnson[1], M. G. Thomas[2], I. Misztal[3], D. O. Rae[1], J. G. Wasdin[1], and J. D. Driver[1], [1]*University of Florida, Gainesville*, [2]*Colorado State University, Fort Collins*, [3]*University of Georgia, Athens*.

W65 **Using low-density commercial DNA-marker panels on prediction accuracy for expected progeny differences of selection criteria: An application in a marker-assisted breeding program for Nellore cattle in Brazil.**
J. B. S. Ferraz*[1], F. M. Rezende[1], R. C. G. Silva[1,2], X. Wu[3], S. Bauck[2], J. P. Eler[1], and E. C. Mattos[1], [1]*University of Sao Paulo/FZEA/ZAB/GMAB, Pirassununga, SP, Brazil*, [2]*Igenity Livestock Production Business Unit, Merial Ltd., Duluth, GA*, [3]*Department of Animal Science, Univ. of Wisconsin, Madison*.

W66 **SNP AY428575.1:g.346G>A of the bovine *TCAP* gene: Genotyping with PCR-RFLP and occurrence in Nelore animals (*Bos indicus*) and Angus (*B. taurus*) × Nelore.**
B. Borges*[1], R. Curi[2], A. Tamanaha[2], and L. A. Chardulo[3], [1]*College of Agrarian and Veterinary Sciences, UNESP, Jaboticabal, SP, Brazil*, [2]*College of Animal Production and Veterinary Medicine, Animal Breeding and Nutrition Department, UNESP, Botucatu, SP, Brazil*, [3]*Bioscience Institute, Chemistry and Biochemistry Department, UNESP, Botucatu, SP, Brazil*.

W67 **Association study of heat shock protein 70 gene with serum biochemical indices in Sanhe cattle.**
Y. Wang*[1], L. Liu[1], Q. Xu[2], Q. Chu[3], Y. Yu[1], H. Wu[4], D. Wang[4], P. Yuan[4], and A. Liu[5], [1]*College of Animal Science and Technology, China Agricultural University, Beijing, China*, [2]*College of Biology, Beijing Jiaotong University, Beijing, China*, [3]*Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*, [4]*Xiertala Breeding Farm, Hailaer Farm Buro, Hailaer, Inner Mongolia, China*, [5]*Hailaer Farm Buro, Hailaer, Inner Mongolia, China*.

W68 **Molecular characterization of constitutive androstane receptor (CAR) and its association with feed efficiency of Nellore (*Bos indicus*) cattle.**
P. Alexandre, M. H. A. Santana, R. C. Gomes, J. B. S. Ferraz*, and H. Fukumasu, *College of Animal Science and Food Engeneering - Animal Breeding and Biotechnology Group (USP/FZEA/ZAB/GMAB), Pirassununga, SP, Brazil*.

W69 **Assessment of 16 candidate genes for growth and maternal ability traits in Mexican Charolais cattle.**
L. A. Meza-García, V. I. Pacheco-Contreras*, G. M. Parra-Bracamonte, and A. M. Sifuentes-Rincón, *Laboratorio de Biotecnología Animal, Centro de Biotecnología Genómica, Instituto Politécnico Nacional, Reynosa, Tamaulipas, México*.

W70 **Distribution of molecular markers and determination of molecular breeding values associated with feed efficiency, beef tenderness, and marbling in Senepol cattle.**
B. Velez*, B. Diaz, and M. Pagan, *University of Puerto Rico, Mayaguez, Puerto Rico*.

W71 **Function analysis of liver X receptor α regulating fatty acid synthesis in mammary epithelial cells of dairy goats.**
W. Wang, J. Luo*, Y. Zhong, X. Lin, and H. Shi, *Shaanxi Key Laboratory of Molecular Biology for Agriculture, College of Animal Science and Technology, Northwest A&F University, Yangling, Shaanxi, China*.

W72 **Structural and functional analysis of fatty acid synthase gene promoter of Xinong Saanen dairy goat.**
J. Li, J. Luo*, and Y. Sun, *Shaanxi Key Laboratory of Molecular Biology for Agriculture, College of Animal Science and Technology, Northwest A&F University, Yangling, Shaanxi, China*.

W73 **Use of different statistical approaches to study genetic variability of OAR6 in sheep breeds farmed in Italy.**
R. Steri[1], A. Criscione[2], E. Ciani[3], B. Moioli[4], P. Crepaldi[5], L. Nicoloso[5], D. Marletta[2], E. L. Nicolazzi[6], A. Passero[3], G. Catillo[4], F. Pilla[7], and N. P. P. Macciotta*[1], [1]*Università di Sassari, Sassari, Italy*, [2]*Università di Catania, Catania, Italy*, [3]*Università di Bari, Bari, Italia*, [4]*CRA, Rome, Italy*, [5]*Università di Milano, Milan, Italy*, [6]*Università Cattolica, Piacenza, Italy*, [7]*Università del Molise, Campobasso, Italy*.

W74 **Genotyping of five Chinese local pig breeds focused on meat quality by using PCR-RFLP based on halothane and Mx1.**
Z. M. Feng, G. G. Lian, X. F. Kong, X. Zhou, and Y. L. Yin*, *Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*.

W75 **Which housekeeping gene can be used in gene expression analysis in Chinese local pig breeds?**
Z. M. Feng, J. P. Guo, X. F. Kong, and Y. L. Yin*, *Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, China*.

W76 **Genotype imputation accuracy in an F_2 pig cross using high-density and low-density SNP panels.**
J. L. Gualdrón Duarte*[1,3], R. O. Bates[1], C. W. Ernst[1], N. E. Raney[1], R. J. C. Cantet[3], and J. P. Steibel[1,2], [1]*Department of Animal Science, Michigan State University, East Lansing*, [2]*Department of Fisheries and Wildlife, Michigan State University, East Lansing*, [3]*Departamento de Producción Animal, Facultad de Agronomía, UBA - CONICET, Ciudad Autónoma de Buenos Aires, Buenos Aires, Argentina*.

W77 **The proteome and mRNA expression of vimentin in the adipose tissue of broiler chickens.**
G. Kelley*, A. Stewart-Bohannon, F. Chen, X. Wang, and S. Nahashon, *Tennessee State University, Nashville*.

Dairy Foods
Microbiology and Dairy Chemistry

W78 **Viability of free and encapsulated *Lactobacillus acidophilus* ATCC 4356 in yogurt and artificial human gastric digestion system.**
F. Ortakci*[1,2] and S. Sert[2], [1]*Western Dairy Center Nutrition Dietetics and Food Sciences Department, Logan, UT*, [2]*Ataturk University, Erzurum, Turkey*.

W79 **Complete genome sequence of *Bifidobacterium animalis* subspecies *lactis* BF-6.**
A. Baker[1], A. Negrete-Raymond[2], K. Polzin[1], M. Souza[2], Y. Yu*[3], J. Loquasto[3], J. Amos[3], and R. Roberts[3], [1]*Cargill Texturizing Solutions, Waukesha, WI*, [2]*Cargill Biotechnology Development Center, Navarre, MN*, [3]*The Pennsylvania State University, Department of Food Science, University Park*.

W80 **Growth of yogurt culture bacteria in the presence of two antimicrobials.**
M. Vives[1,2] and K. Aryana*[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W81 **Acquired resistance of yogurt culture bacteria to two different antimicrobials.**
M. Vives[1,2] and K. Aryana*[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W82 **Isolation of an oligotrophic *Lactobacillus* species that may be associated with late gas production and splits in cheese.**
C. J. Oberg*[1,2], M. Culumber[1], T. Oberg[2], J. R. Broadbent[2], and D. J. McMahon[2], [1]*Department of Microbiology, Weber State University, Ogden, UT*, [2]*Western Dairy Center, Utah State University, Logan*.

W83 **Influence of various health beneficial spices on the acid tolerance of *Streptococcus thermophilus* ST-M5.**
M. Sanchez-Vega*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W84 **Bile tolerance of *Lactobacillus delbrueckii* ssp. *bulgaricus* LB-12 subjected to mild sonication intensities at different temperatures.**
M. Moncada*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W85 **A new approach to make milk calibration standards for electronic somatic cell counters.**
J. Podoll, D. M. Barbano*, and K. L. Wojciechowski, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

W86 **Freezing and thawing milk calibration standards for electronic somatic cell counters.**
L. V. Marzo[1] and D. M. Barbano*[2], [1]*University of Sao Paulo, Pirassununga, Brazil*, [2]*Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

W87 **Protease activity of *Streptococcus thermophilus* ST-M5 subjected to mild sonication intensities at different temperatures.**
M. Moncada*[1,2] and K. Aryana[2,1], [1]*Louisiana State University*, [2]*Louisiana State University Agricultural Center*.

W88 **Prediction of fatty acid chain length and unsaturation of milk fat by mid-infrared milk analysis.**
K. L. Wojciechowski[1], D. M. Barbano*[1], and E. de Jong[2], [1]*Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*, [2]*Delta Instruments, Drachten, the Netherlands*.

W89 **A ruggedness study: Casein content of milk by Kjeldahl analysis for milk concentrates and non-bovine milks.**
K. L. Wojciechowski and D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*.

W90 **A review of the pH influenced casein-whey protein interactions in heated milk.**
H. Taterka*, B. Guamis, and M. Castillo, *Universitat Autònoma de Barcelona, Barcelona, Spain*.

W91 **Gel-based shotgun proteomics analysis of cow milk fat globules.**
T. J. Yuan, J. Q. Wang*, Y. X. Yang, D. P. Bu, J. H. Yang, P. Sun, and L. Y. Zhou, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*.

Forages and Pastures III

W92 **Chemical composition of oats straw treated with oxidizing and alkali-based agents.**
F. E. Miccoli[1,2], H. M. Arelovich*[2,3], R. D. Bravo[2,3], and M. F. Martínez[2,4], [1]*Facultad de Ciencias Agrarias, Universidad Nacional de Lomas de Zamora, Buenos Aires, Argentina*, [2]*Departamento de Agronomía, Universidad Nacional del Sur, Bahía Blanca, Argentina*, [3]*Comisión de Investigaciones Científicas (CIC), Buenos Aires, Argentina*, [4]*CERZOS-CONICET, Bahía Blanca, Argentina*.

W93 **In vitro true organic matter digestibility, partitioning factor, and ruminal microbial protein synthesis of crown rust resistant and susceptible oat cultivars in Northern Mexico.**
H. Bernal Barragán*[1,4], M. A. Cerrillo Soto[2,4], A. S. Juárez Reyes[2,4], M. Guerrero Cervantes[2,4], N. C. Vásquez Aguilar[1], F. G. Ríos Rincón[3,4], E. Gutiérrez Ornelas[1,4], and J. E. Treviño Ramirez[1], [1]*Universidad Autónoma de Nuevo León, Fac. Agronomía, San Nicolás de los Garza, NL, México*, [2]*Universidad Juárez del Estado de Durango, Fac. Medicina Veterinaria y Zootecnia, Durango, México*, [3]*Universidad Autónoma de Sinaloa, Fac. Medicina Veterinaria y Zootecnia, Culiacán, Sin, México*, [4]*Red Internacional de Nutición y Alimentación en Rumiantes, México*.

W94 **On farm corn silage evaluation method and its validation in a field study.**
B. Andrieu*, A. Perilhou, and J. Sindou, *Lallemand SAS, Blagnac, France*.

W95 **Transgenic corn hybrids reduce fungi in silage.**
G. B. Neto*[1], T. M. dos Santos Cividanes[1], R. B. F. Branco[1], A. L. Fachin[2], M. C. Beraldo[2], and T. A. Bitencourt[2], [1]*Agência Paulista de Tecnologia dos Agronegócios da Secretaria da Agricultura e Abastecimento do Estado de São Paulo, Ribeirão Preto, São Paulo, Brazil*, [2]*Universidade de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil*.

W96 **Effects of DM concentrations and inoculants on Jiggs and Tifton 85 bermudagrass silage.**
J. M. B. Vendramini*[1], A. T. Adesogan[2], L. E. Sollenberger[3], A. D. Aguiar[1], A. Valente[1], and P. Salvo[1], [1]*UF/IFAS Range Cattle Research and Education Center, Ona, FL*, [2]*Department of Animal Sciences, Gainesville, FL*, [3]*Department of Agronomy, Gainesville, FL*.

W97 **Effects of *Lactobacillus* inoculants and forage dry matter on the fermentation and aerobic stability of ensiled mixed-crop tall fescue and meadow fescue.**
X. S. Guo[1], D. J. Undersander[2], and D. K. Combs*[2], [1]*State Key Laboratory of Pastoral Ecosystem, Lanzhou University, Lanzhou, China*, [2]*University of Wisconsin, Madison*.

W98 **Effect of corn silage sample handling on nutritional parameters measured by wet chemistry.**
L. C. Solórzano*[1], D. Sawyer[2], and A. A. Rodríguez[3], [1]*Chr. Hansen Inc., Milwaukee, WI*, [2]*Rock River Laboratory Inc., Watertown, WI*, [3]*University of Puerto Rico, Mayagüez, PR*.

W99 **The effect of ensiling duration on fatty acid profile and concentration of corn silage.**
M. C. Der Bedrosian*[1], L. Kung[1], K. E. Nestor[2], C. L. Preseault[3], and A. L. Lock[3], [1]*University of Delaware, Newark*, [2]*Mycogen Seeds, Indianapolis, IN*, [3]*Michigan State University, East Lansing*.

W100 **Relationship between organoleptic characteristics, pH, and aerobic deterioration of alfalfa and orchard grass silages.**
R. González-Ortiz[1], L. Miranda-Romero[1], J. Burgueño-Ferreira[2], and R. Améndola-Massiotti*[1], [1]*Posgrado en Producción Animal Universidad Autónoma Chapingo, Chapingo, Estado de México, México*, [2]*CIMMYT, Texcoco, Estado de México, México*.

W101 **Effect of rate of application of various commercial exogenous fibrolytic enzymes on preingestive fiber hydrolysis and release of sugars and phenolics from bermudagrass haylage.**
J. J. Romero*[1], K. G. Arriola[1], M. A. Zarate[1], C. R. Staples[1], C. F. Gonzalez[2], W. Vermerris[3], and A. T. Adesogan[1], [1]*Department of Animal Sciences, IFAS, University of Florida, Gainesville*, [2]*Department of Microbiology and Cell Science, IFAS, University of Florida, Gainesville*, [3]*Department of Agronomy, IFAS, University of Florida, Gainesville*.

W102 **The effects of bacterial inoculants and enzymes on the fermentation, aerobic stability and in vitro organic matter digestibility characteristics of sunflower silages.**
M. L. Ozduven*[1], F. Koc[1], and V. Akay[2], [1]*Namik Kemal University, Tekirdag, Turkey*, [2]*Global Nutritech Biotechnology LLC, Richmond, VA*.

W103 **The inoculation rate of a mixture of homo-fermentative and hetero-fermentative bacteria strains affects the aerobic stability of tropical corn (TC) silage.**
A. A. Rodríguez*[1], L. C. Solórzano[2], and V. Rivera[1], [1]*University of Puerto Rico, Mayagüez, PR*, [2]*Chr. Hansen Inc., Milwaukee, WI*.

W104 **Infrared thermography to assess the relationship between corn silage quality and face temperature.**
L. O. Abdelhadi*[1], P. A. Saravia[2], W. R. Barneix[2], C. A. Malaspina[2], C. de Elia[3], and J. M. Tricarico[4], [1]*Est. El Encuentro, Research and Extension in Ruminant Nutrition, Brandsen, Buenos Aires, Argentina*, [2]*Cámara Argentina de Contratistas Forrajeros (CACF), Argentina*, [3]*Alltech Biotechnology, Argentina*, [4]*Innovation Center for U.S. Dairy, Rosemont, IL*.

W105 **Fermentative losses and yeasts population in sugarcane ensiled with different particle sizes.**
A. F. Campos*[1], G. R. Siqueira[1,2], V. D. Monção[3], and R. A. Reis[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil*, [3]*Centro Universitário de Barretos, Barretos, São Paulo, Brazil*.

W106 **A preliminary evaluation of corn silage affected by Hurricane Irene in 2011.**
J. M. Lim*[1], E. A. Cummings[2], H. M. Darby[2], and L. Kung[1], [1]*University of Delaware, Newark*, [2]*University of Vermont, Burlington*.

W107 **Feeding red clover cut at sundown and harvested as baleage did not improve milk yield in late-lactation dairy cows.**
N. T. Antaya*[1], A. F. Brito[1], R. Berthiaume[2], G. F. Tremblay[3], N. L. Whitehouse[1], G. M. Soule[1], N. E. Guidon[1], and E. S. Fletcher[1], [1]*University of New Hampshire, Durham*, [2]*Dairy and Swine R&D Centre/Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [3]*Soils and Crops R&D Centre/Agriculture and Agri-Food Canada, Québec City, QC, Canada*.

W108 **The effect of feeding normal corn silage, BMR corn silage or 50:50 mixture of the two on the production performance of lactating cows.**
J. M. Lim*[1], M. C. Santos[1], M. C. der Bedrosian[1], K. E. Nestor[2], and L. Kung[1], [1]*University of Delaware, Newark*, [2]*Mycogen Seeds, Indianapolis, IN*.

W109 **Effects of an esterase-producing inoculant and chop-length on fermentation and aerobic stability of barley silage.**
W. Addah*[1,2], J. Baah[1], E. K. Okine[2], and T. A. McAllister[1], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [2]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*.

W110 **Effects of applying bacterial inoculant with different shooting height on fermentation quality of barley silage.**
D. H. Kim*[1], H. J. Lee[1], S. M. Amanullah[2], S. C. Kim[2], Y. M. Song[3], H. Y. Kim[3], and S. B. Kim[4], [1]*Division of Applied Life Science (BK21), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [3]*Department of Animal Resource Techology, GNUST, Jinju, Gyeongsangnamdo, South Korea*, [4]*Dairy Science Division, NIAS, Cheonan, Chungnam, South Korea*.

W111 **Effects of bacterial inoculant and shoot height on fermentation quality of barley silage.**
H. J. Lee*[1], D. H. Kim[1], S. M. Amanullah[2], S. C. Kim[2], Y. M. Song[3], H. Y. Kim[3], and S. B. Kim[4], [1]*Division of Applied Life Science (BK21), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeongsang National University, Jinju, Gyeongsangnamdo, South Korea*, [3]*Department of Animal Resource Techology, GNUST, Jinju, Gyeongsangnamdo, South Korea*, [4]*Dairy Science Division, NIAS, Cheonan, Chungnam, South Korea*.

W112 **Effects of inoculant blends on emissions of volatile organic compounds, oxides of nitrogen, carbon dioxide, ammonia, and dry matter losses in alfalfa silage.**
R. B. Franco*[1], J. A. McGarvey[2], D. H. Putnam[3], P. G. Green[4], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*United States Department of Agriculture, Agricultural Research Service, Albany, CA*, [3]*Department of Plant Sciences, University of California, Davis*, [4]*Department of Civil and Environmental Engineering, University of California, Davis*.

W113 **Screening of bacteriocinogenic lactic acid bacteria from tropical legume silage.**
M. Silva, H. Mantovani, O. Pereira*, C. Moraes, A. Ribon, and W. Souza, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*.

W114 **Chemical composition and fermentation profile of *Brachiaria brizantha* and Campo Grande *Stylosanthes* mixed silages.**
J. P. Rigueira, O. Pereira*, K. Ribeiro, A. Cezário, and W. Souza, *Federal University of Vicosa, Viçosa, Minas Gerais, Brazil*.

W115 **Feedtech CustomChop F-20 enhances the fermentation characteristics of elephant grass (*Pennisetum purpureum*) after 45 d of ensiling.**
A. A. Rodríguez*[1], L. C. Solórzano[2], and T. Hemling[3], [1]*University of Puerto Rico, Mayagüez, PR*, [2]*Chr. Hansen, Milwaukee, WI*, [3]*DeLaval Manufacturing, Kansas City, MO*.

W116 **Intake and total apparent digestibility of nutrients of corn and *Stylosanthes* silages in diets for sheep.**
L. Silva, O. Pereira*, K. Ribeiro, S. Valadares Filho, and T. Silva, *Federal University of Vicosa, Viçosa, Minas Gerais, Brazil*.

W117 **Condensed tannins concentrations of prairie legume forages at different phenological stages.**
Y. Li[1,2], A. D. Iwaasa*[1], Y. Wang[3], L. Jin[3], and G. Han[2], [1]*Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada*, [2]*Colleges of Ecology and Environment Science, Inner Mongolia Agricultural University, Huhhot, China*, [3]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

W118 **Mixing purple prairie clover with alfalfa reduced alfalfa N transforming to ammonia-N.**
L. Jin[1,2], Z. Xu[1], A. D. Iwaasa[3], Y. G. Zhang[2], M. P. Schellenberg[3], T. A. McAllister[1], and Y. Wang*[1], [1]*AAFC, Lethbridge, AB, Canada*, [2]*Northeast Agricultural University, China*, [3]*SPARC-AAFC, Swift Current, SK, Canada*.

W119 **Effect of sainfoin condensed tannins on the N transformation of alfalfa forage preserved as silage.**
Y. Wang*, Z. Xu, S. Acharya, and T. A. McAllister, *AAFC, Lethbridge, AB, Canada*.

W120 **Effect of application rate of a fibrolytic enzyme product on in vitro ruminal fermentation of three low-quality substrates.**
A. Díaz[1], I. Mateos[1], C. Saro[1], E. N. Odongo[3], M. D. Carro[1,2], and M. J. Ranilla*[1,2], [1]*Dpto. Producción Animal, Universidad de León, Campus de Vegazana, León, Spain*, [2]*Instituto de Ganadería de Montaña (CSIC-ULE), Grulleros, León,Spain*, [3]*International Atomic Energy Agency, Vienna, Austria*.

Growth and Development III

W121 **Effect of hay or corn silage in pre-weaned calf diets on eating behavior and rumen development.**
F. X. Suarez-Mena* and A. J. Heinrichs, *The Pennsylvania State University, University Park.*

W122 **Exogenous palimitic and palmitoleic acids respond differently in stearoyl-CoA desaturase (SCD1) inhibited bovine adipocytes.**
A. K. G. Kadegowda*, T. A. Burns, and S. K. Duckett, *Clemson University, Clemson, SC.*

W123 **Steroyl-CoA desaturase 1 (SCD1) inhibition decreases de novo fatty acid synthesis in primary bovine adipocytes.**
A. K. G. Kadegowda*, T. A. Burns, N. Tharayil, S. L. Pratt, and S. K. Duckett, *Clemson University, Clemson, SC.*

W124 **Metabolic differences in hepatocytes from Iberian and Landrace pigs.**
L. Gonzalez-Valero, J. M. Rodriguez-Lopez, M. Lachica, and I. Fernandez-Figares*, *CSIC (Spanish National Research Council), Granada, Spain*.

W125 **Effect of betaine and conjugated linoleic acid on porcine subcutaneous adipose tissue lipolysis.**
M. L. Rojas-Cano[1], M. Martinez-Perez[2], M. Lachica[1], L. Lara[1], T. Ramsay[3], and I. Fernandez-Figares*[1], [1]*CSIC (Spanish National Research Council), Granada, Spain*, [2]*Instituto de Ciencia Animal, La Habana, Cuba*, [3]*BARC, ANRI. USDA, Beltsville, MD*.

W126 ***T-box (Tbx)-2* is required for proliferation of osteoblast cells.**
N. Francis[1], S. M. Tornaquindici[1], S. Mohan[2], and K. E. Govoni*[1], [1]*Department of Animal Science, University of Connecticut, Storrs*, [2]*Musculoskeletal Disease Center, Jerry L. Pettis VA Medical Center, Loma Linda, CA*.

W127 **Comparison of feed form (pelleted vs. textured) on growing performance and rumen papillae development of dairy steers.**
J. A. Davidson*[1], T. E. Johnson[1], B. L. Miller[1], K. B. Cunningham[1], H. C. Puch[1], K. M. O'Diam[2], and K. M. Daniels[2], [1]*Land O' Lakes Research Farm, Land O' Lakes Purina Feed, Webster City, IA*, [2]*Ohio Agricultural Research and Development Center, The Ohio State University, Wooster*.

W128 **Effect of parenteral administration of glutamine on autophagy of liver cell and immune responses in weaned calves.**
Z. Hu*, Z. Cao, and S. Li, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*.

W129 **Influence of hay type on ruminal papillae surface area of growing dairy steers from 13 to 22 wk of age.**
J. A. Davidson*, T. E. Johnson, H. C. Puch, and B. L. Miller, *LongView Animal Nutrition Center, Land O' Lakes Purina Feed, Gray Summit, MO*.

W130 **Intake and performance of dairy heifers 12 to 24 wk of age following a full potential calf feeding program.**
J. A. Davidson*, D. C. Brown, and B. L. Miller, *LongView Animal Nutrition Center, Land O' Lakes Purina Feed, Gray Summit, MO.*

W131 **Effects of milk feeding strategies on performance, ruminal development, and metabolic and hormonal profile of Holstein calves.**
B. F. Silper*, S. G. Coelho, A. M. Q. Lana, A. U. Carvalho, C. S. Ferreira, A. P. S. Franzoni, H. M. Saturnino, and R. B. Reis, *Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil*.

W132 **Ontogenic changes of hepatic glucocorticoid and α_1- and β_2-adrenergic receptors in neonatal calves.**
D. Rohrbeck, J. Steinhoff-Wagner, E. Kanitz, and H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

W133 **l-Arginine regulates expression of myokines and adipokines in myoblast and adipocyte cells.**
H. S. Yang, X. Xiong, Y. L. Yin*, and X. F. Kong, *Hunan Provincial Engineering Research Center of Healthy Livestock, Key Laboratory of Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, Hunan, Changsha,China*.

W134 **Role of estrogen receptor-α (ER-α) and insulin-like growth factor receptor-1 (IGFR-1) in estradiol-stimulated proliferation of cultured bovine satellite cells.**
E. Kamanga-Sollo, M. E. White, M. R. Hathaway, and W. R. Dayton*, *University of Minnesota, St. Paul*.

Horse Species

W135 **Trends in equine farm management and conservation practices.**
B. J. McIntosh* and S. A. Hawkins, *The University of Tennessee, Knoxville*.

W136 **The effects of feed-borne *Fusarium* mycotoxins on the presence and severity of equine gastric ulcer syndrome and the efficacy of a glucomannan mycotoxin adsorbent.**
M. Mortson*, G. Girgis, H. Staempfli, A. Gallastegui, and T. K. Smith, *University of Guelph, Guelph, Ontario, Canada*.

W137 **Comparison of high fat, high fiber, and high starch diets on serum levels of insulin, IGF-1, and glucose in growing horses.**
C. A. Craige*, S. R. Cooper, L. J. Spicer, and S. T. Kawcak, *Oklahoma State University, Stillwater*.

W138 **Horses decrease water intake when supplements are added to drinking water.**
M. E. Gordon*, B. L. Miller, and M. L. Jerina, *Land O'Lakes Purina Feed LLC, Gray Summit, MO*.

W139 **The effects of coprophagy on the hindgut bacterial community of neonatal foals.**
L. A. Strasinger*[1], L. M. Lawrence[1], M. D. Flythe[2,1], G. L. Gellin[2], M. Brummer[1], B. E. Davis[1], and L. R. Good[1], [1]*University of Kentucky, Lexington*, [2]*United States Department of Agriculture, Agricultural Research Service, Forage-Animal Production Research Unit, Lexington, KY*.

W140 **Influence of maternal plane of nutrition and arginine supplementation on mares and their foals: Foaling parameters.**
K. N. Winsco*[1], J. A. Coverdale[1], C. J. Hammer[2,3], K. L. Gehl[1], A. E. Hanson[1], J. L. Lucia[1], and A. N. Wolford[1], [1]*Department of Animal Science, Texas A&M University, College Station*, [2]*Department of Animal Sciences, North Dakota State University, Fargo*, [3]*Center for Nutrition and Pregnancy, North Dakota State University, Fargo*.

W141 **Mineral concentrations of cool season grasses as affected by specie and season.**
A. L. Fowler*, L. M. Lawrence, S. H. Hayes, and S. R. Smith, *University of Kentucky, Lexington*.

W142 **Effects of late gestation on conformation and movement in mares.**
H. Roberts*, J. M. Reddish, and K. Cole, *Department of Animal Sciences, The Ohio State University, Columbus*.

W143 **Exercise response in unfit horses of different selenium status.**
M. Brummer*, S. Hayes, B. E. Davis, L. A. Strasinger, S. M. McCown, and L. M. Lawrence, *University of Kentucky, Lexington*.

W144 **The effect of antibiotic administration on fermentative characteristics of equine feces.**
B. E. Davis*[1], L. M. Lawrence[1], M. D. Flythe[2,1], S. H. Hayes[1], C. Wilson[1], A. L. Fowler[1], M. Brummer[1], and L. A. Strasinger[1], [1]*University of Kentucky, Lexington*, [2]*United States Department of Agriculture, Agricultural Research Service, Forage-Animal Production Research Unit, Lexington, KY*.

W145 **Effects of probiotic supplementation on stress and immune responses in horses.**
J. Saul, J. M. Reddish*, K. Barnhart, C. Dyer, and K. Cole, *The Ohio State University, Columbus*.

W146 **Biochemical markers of bone metabolism in growing Quarter Horses fed a higher starch versus a higher fat diet.**
K. R. Vineyard*, M. E. Gordon, and M. L. Jerina, *Land O'Lakes Purina Feed, Gray Summit, MO*.

W147 **Anthelmintic resistance testing and training on horse farms in the Southeast.**
N. C. Whitley*[1], R. M. Kaplan[2], R. K. Spann[3], A. M. Zajac[4], K. Moulton[1], R. A. Franco[1], C. Swanson[5], A. E. Cooper[1], and V. R. Jackson[1], [1]*North Carolina A&T State University, Greensboro*, [2]*University of Georgia, Athens*, [3]*Virginia Tech MARE Center, Middleburg*, [4]*VA-MD Regional College of Veterinary Medicine, Blacksburg, VA*, [5]*Virginia Cooperative Extension, Albemarle County, Charlottesville, VA*.

Lactation Biology III

W148 **Estradiol enhances apoptosis in bovine mammary epithelial cells in vitro.**
L. Yart*[1,2], L. Finot[1,2], V. Lollivier[2,1], P. G. Marnet[2,1], and F. Dessauge[1,2], [1]*INRA, UMR1348 Pegase, Saint-Gilles, France*, [2]*Agrocampus Ouest, UMR1348 Pegase, Rennes, France*.

W149 **Evaluation of mitogenic properties of colostrum and colostrum replacer (CR) on growth of bovine mammary epithelial cells (BMEC) in vitro.**
K. E. Stemm*, C. M. Jones, J. L. Collier, and R. J. Collier, *University of Arizona, Tucson*.

W150 **Effects of intra-mammary infusions of casein hydrolysate, EGTA, and lactose at drying-off on mammary gland involution.**
B. Ponchon*[1], P. Lacasse[2], N. Silanikove[3], S. Ollier[2], and X. Zhao[1], [1]*Department of Animal Science, McGill University, Sainte-Anne-de-Bellevue, QC, Canada*, [2]*AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*, [3]*Volcani Center, Bet Dagan, Israel*.

W151 **Expression of amino acid transporter LAT1 and the regulation by prolactin in mammary gland of dairy cow.**
L. Feng, Y. Lin, Q. Li*, X. Gao, and N. Zhang, *Key laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, Heilongjiang, China*.

W152 **Bzw2 promotes proliferation and lactation of mammary epithelial cell in dairy goat.**
R. Sun, Q. Li*, H. Yan, J. Zhao, X. Gao, and N. Zhang, *The Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, Heilongjiang, China*.

W153 **CLA and diet induced milk fat depression reduces milk fat across the entire day.**
K. Cook[1], K. J. Harvatine*[1], and D. E. Bauman[2], [1]*Penn State University, University Park*, [2]*Cornell University, Ithaca, NY*.

W154 **Dairy cows having various levels of *cis*-9, *trans*-11 CLA de novo synthesis differently express proteins in milk epithelial cells.**
H. G. Lee*[1], T. Wang[1], J. N. Lim[1], J. D. Bok[2], J. H. Kim[3], S. B. Lee[1], S. K. Kang[2], J. H. Hwang[1], K. H. Lee[1], H. S. Kang[1], and Y. J. Choi[2], [1]*Department of Animal Science, Pusan National University, Miryang, Gyeongnam, Korea*, [2]*Department of Agricultural Biotechnology, Seoul National University, Seoul, Korea*, [3]*Research and Technology Center, Cargill Agri Purina, Seongnam, Gyeonggi, Korea*.

W155 **Modification of protein synthesis of bovine mammary epithelial cells induced by heat shock.**
H. Hu, J. Q. Wang*, D. P. Bu, L. Y. Zhou, and P. Sun, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing*.

W156 **Choline and methionine affect oxidative stress in a bovine mammary epithelial cell line.**
L. Pinotti*[1], E. Skrivanova[2], R. Rebucci[1], E. Fusi[1], F. Cheli[1], and A. Baldi[1], [1]*Department of Veterinary Sciences and Technology for Food Safety, Università degli Studi di Milano, Milan, Italy*, [2]*Institute of Animal Science, Prague, Czech Republic*.

Nonruminant Nutrition
Feed Additives

W157 **Effects of dietary Aviplus-S supplementation on growth performance, fecal characteristics, and blood profiles in weanling pigs.**
J. H. Cho*, L. Yan, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

W158 **Effects of Alcopro supplementation as energy source on growth performance, nutrient digestibility, and blood characteristics in growing pigs.**
J. H. Cho*[1], P. Y. Zhao[1], K. D. Yang[2], S. W. Han[2], and I. H. Kim[1], [1]*Dankook University, Department of Animal Resource & Science, Cheonan, Choongnam, South Korea*, [2]*WooGene B&G, Seoul, South Korea*.

W159 **Effects of Calibrin-Z on weanling pigs fed diets with no mycotoxin contamination.**
F. Chi[1], S. L. Johnston*[1], and D. C. Mahan[2], [1]*Amlan International Inc., Chicago, IL*, [2]*The Ohio State University, Columbus*.

W160 **Bovine lactoferrampin-lactoferricin produced by *Pichia pastoris* fed-batch fermentation improves intestinal microflora in weaned piglets.**
X. S. Tang and Y. L. Yin*, *Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China*.

W161 **Effects of feeding capsicum oleoresin, garlicon, or turmeric oleoresin on gene expression of ileal mucosa of pigs.**
Y. Liu*[1], M. Song[1], T. M. Che[1], J. A. Soares-Almeida[1], J. J. Lee[1], D. Bravo[2], C. W. Maddox[1], and J. E. Pettigrew[1], [1]*University of Illinois, Urbana*, [2]*Pancosma SA, Geneva, Switzerland*.

W162 **Productive performance in post-weaned pigs conditioned by pre and postnatal porcine digestive peptides (PDP) exposure through maternal diet.**
J. Figueroa*[1], D. Solà-Oriol[1], E. Borda[2], S. A. Guzmán-Pino[1], and J. F. Pérez[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Bioibérica, Barcelona, Spain*.

W163 **Effects of chitosan nanoparticles loaded with chromium ions on growth, blood metabolites, immune traits and tissue chromium in finishing pigs.**
M. Q. Wang*, C. Wang, H. Li, Y. J. Du, W. J. Tao, S. S. Ye, and Y. D. He, *Animal Science College of Zhejiang University, Hangzhou, Zhejiang, China*.

W164 **Effects of fermented chlorella supplementation on growth performance, nutrient digestibility, and blood characteristics in growing pigs.**
B. R. Lee*[1], J. Li[1], S. U. Lim[2], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*Ace M&F Ltd., Seoul, South Korea*.

W165 **The efficacy of using the external marker LIPE to predict digestibility values in Nile tilapia (*Oreochromis niloticus*) fed contrasting diets.**
R. Jones[1], O. Evans[1], E. A. Teixeira[2], E. O. S. Saliba[2], V. B. Silva[2], K. C. M. Filho[2], J. S. Saliba[2], S. J. Meale*[1], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Laboratório de Aquacultura da Universidade Federal de Minas Gerais, Escola de Veterinária, Departamento de Zootecnia, Belo Horizonte, MG, Brazil*.

W166 **Validation of the external marker Nanolipe as an indicator of apparent nutrient and energy digestibility in juvenile Nile Tilapia (*Oreochromis niloticus*).**
O. Evans[1], R. Jones[1], E. A. Teixeira[2], E. O. S. Saliba[2], V. B. Silva[2], K. C. M. Filho[2], J. S. Saliba[2], S. J. Meale*[1], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Laboratório de Aquacultura da Universidade Federal de Minas Gerais, Escola de Veterinária, Departamento de Zootecnia, Belo Horizonte, MG, Brazil*.

W167 **Total serum cholesterol and triglycerides concentrations in broilers fed with diets containing different sources of oil associated with conjugated linoleic acid (CLA).**
V. C. da Cruz*[1], R. F. de Oliveira[1], G. do Valle Polycarpo[2], V. B. Fascina[3], L. H. Zanetti[1], G. A. M. Pasquali[1], R. Crivellari[1], L. C. Carvalho[1], and C. C. do Valle Polycarpo[4], [1]*São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil*, [2]*University of São Paulo, Pirassununga Campus, Pirassununga, São Paulo, Brazil*, [3]*São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil*, [4]*São Paulo State University, São José do Rio Preto Campus, São José do Rio Preto, São Paulo, Brazil*.

W168 **Effect of dietary oregano (*Origanum vulgare* L.) essential oil on growth performance of broiler chickens fed with diets of different metabolizable energy levels.**
E. van Eerden[1], L. Star[1], P. van der Aar[1], and L. Z. Jin*[2], [1]*Schothorst Feed Research, Lelystad, the Netherlands*, [2]*Meriden/Meritech Biotech, Guangzhou, China*.

W169 **Growth performance, nutrient digestibility, and carcass traits of rabbits fed diets added with DDGS or hemicellulases and glucanases.**
H. Bernal Barragán*[1,4], J. E. Gallegos Balderas[1], M. A. Liñán González[1], C. A. Hernández Martínez[1], F. G. Ríos Rincón[2,4], M. A. Cerrillo Soto[3,4], N. C. Vásquez Aguilar[1], and A. S. Juárez Reyes[3,4], [1]*Universidad Autónoma de Nuevo León, Fac. de Agronomía, San Nicolás de los Garza, NL, México*, [2]*Universidad Autónoma de Sinaloa, Fac. de Medicina Veterinaria y Zootecnia, Culiacán, México*, [3]*Universidad Juárez del Estado de Durango, Durango, México*, [4]*Red Internacional de Nutrición y Alimentación en Rumiantes, México*.

W170 **Evaluation of n-3 fatty acid and probiotic supplementation on growth performance, nutrient digestibility, blood characteristics, relative organ weight, and breast meat characteristics in broilers.**
L. Yan*, S. M. Hong, and I. H. Kim, *Department of Animal Resource & Science, Cheonan, Choongnam, South Korea*.

W171 **Effects of YGF-251 extract supplementation on egg production, egg weight, egg quality, blood characteristics, and fecal noxious gas emission in laying hens.**
S. C. Kim*, S. Zhang, and I. H. Kim, *Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*.

W172 **Growth performance and carcass characteristics of Japanese quail fed different levels of zeolite.**
J. J. Portillo*, J. L. Bolado, A. Estrada-Angulo, B. I. Castro, D. Urías-Estrada, A. Aguilar-Hernandez, C. B. Castro-Tamayo, and F. G. Rios, *FMVZ-UAS, Culiacan, Sinaloa, Mexico*.

Nonruminant Nutrition
Management

W173 **Appetite stimulants on diets of lactating sows.**
A. Rodríguez*, A. Pineda, E. Toledo, and A. Borbolla, *Department of Animal Production: Pigs, Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, D. F. México City, México*.

W174 **Reproductive response of sows in lactation anoestrus to additional organic chromium intake and postweaned GnRH-A application.**
S. A. Félix[1], J. A. Romo[1], J. M. Romo[1,2], H. R. Güemez[1,2], and R. Barajas*[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Granja Porcina La Huerta, Culiacán, Sinaloa, México*.

W175 **Feeding high fiber diet improves productive and reproductive performances of sows.**
A. Woldeghebriel*, M. Mama-Nodeli, T. Barios, and B. Pope, *North Carolina A&T State University, Greensboro*.

W176 **Effects of dietary fat and protein quantity from different feedstuffs on litter gain.**
K. Koch*[1], L. Chu[2], K. Kalscheur[1], R. C. Bott[1], and R. C. Thaler[1], [1]*South Dakota State University, Brookings*, [2]*China Agricultural University, Beijing, China*.

W177 **The effects of blends of sensory functional ingredients on feed intake and growth in juvenile pigs during a food transition.**
C. Clouard[1], V. Noirot*[2], M. Champagnac[2], P. Etienne[2], D. Éclache[2], MC Meunier-Salaün[1], and D. Val-Laillet[1], [1]*INRA, UMR1079 SENAH, Saint Gilles, France*, [2]*Laboratoires Phodé, Terssac, France*.

W178 **Effects of genotype and dietary oil supplementation in pigs. 1. Growth performance and carcass traits.**
T. M. Bertol*[1], J. V. Ludke[1], R. M. L. de Campos[2], N. N. Terra[3], E. A. P. de Figueiredo[1], A. Coldebella[1], and J. I. dos Santos Filho[1], [1]*Embrapa Suínos e Aves, Concórdia, SC, Brazil*, [2]*Fundação Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil*, [3]*Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*.

W179 **Improving feed efficiency in fattening pigs through sensorial stimulation.**
G. Tedó[1], D. Torrallardona[2], and I. R. Ipharraguerre*[1], [1]*Feed Additives Division, Lucta S. A., Montornés del Vallée, Barcelona, Spain*, [2]*IRTA-Mas de Bover, Reus, Tarragona, Spain*.

W180 **Gene expression of myosin heavy chain isoforms and β-adrenergic receptors induced by ractopamine feeding duration in finishing pigs.**
V. V. Almeida*[1], A. J. C. Nuñez[2], A. P. Schinckel[3], M. Ward[3], K. Ajuwon[3], G. Gasparin[1], C. Andrade[1], M. Sbardella[1], L. L. Coutinho[1], and V. S. Miyada[1], [1]*University of Sao Paulo/ESALQ, Piracicaba, SP, Brazil*, [2]*University of Sao Paulo/FZEA, Pirassununga, SP, Brazil*, [3]*Purdue University, West Lafayette, IN*.

W181 **Influence of pellet size on pellet quality and performance and nutrient utilization of broilers.**
M. R. Abdollahi, T. J. Wester*, G. Ravindran, D. V. Thomas, and V. Ravindran, *Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand*.

Nonruminant Nutrition
Minerals and Vitamins

W182 **Effects of increasing inclusion of supplemental magnesium oxide (MgO) on laying performance and eggshell quality in 72-week-old brown egg-laying hens.**
C. H. Kim, I. K. Paik, and D. Y. Kil*, *Department of Animal Science and Technology, Chung-Ang University, Anseong-si, Korea*.

W183 **Evaluating the impact of pre-weaning calcium and phosphorus supplementation on growth performance and carcass characteristics of low and high birth-weight pigs.**
P. L. Y. C. Chang*[1], C. H. Stahl[1,2], and E. van Heugten[1], [1]*Department of Animal Science, North Carolina State University, Raleigh*, [2]*Laboratory of Developmental Nutrition, North Carolina State University, Raleigh*.

W184 **Bone ash and strength traits of young pigs fed diets with no supplemental vitamin D were compromised within a four-week trial.**
L. A. Rortvedt*, D. K. Schneider, and T. D. Crenshaw, *University of Wisconsin-Madison, Madison*.

W185 **Estimates of relative bioavailability of monocalcium and dicalcium phosphates based on whole body DXA scans to determine the efficiency of dietary P use by growing pigs.**
P. T. Merkatoris*, L. A. Rortvedt, and T. D. Crenshaw, *University of Wisconsin, Madison*.

W186 **Effects of sulfur concentration in diets containing distillers dried grains with solubles on carcass characteristics and tissue mineral concentrations in growing-finishing pigs.**
B. G. Kim*[1], D. Y. Kil[2], D. C. Mahan[3], G. M. Hill[4], and H. H. Stein[5], [1]*Konkuk University, Seoul, Korea*, [2]*Chung-Ang University, Anseong-si, Korea*, [3]*Ohio State University, Columbus*, [4]*Michigan State University, East Lansing*, [5]*University of Illinois, Urbana*.

Physiology and Endocrinology III

W187 **Effects of ruminally digested and undigested snakeweed extracts on female Sprague-Dawley rats.**
R. A. Halalsheh*, D. M. Hallford, and T. T. Ross, *New Mexico State University, Las Cruces*.

W188 **Effect of niacin on heat shock protein gene expression in transformed bovine mammary epithelial cells.**
S. Rungruang*, J. L. Collier, and R. J. Collier, *University of Arizona, Tucson*.

W189 **Effects of betaine on heat induced heat shock protein expression in primary bovine mammary epithelial cells.**
Y. Xiao*[1,2], J. L. Collier[1], S. Rungruang[1], L. W. Hall[1], F. R. Dunshea[3], and R. J. Collier[1], [1]*University of Arizona, Tucson*, [2]*Huazhong Agricultural University, Wuhan, Hubei, China*, [3]*The University of Melbourne, Parkville, Vic., Australia*.

W190 **Cloning and responsiveness of bovine glucose-6-phosphatase promoter to cyclic AMP and glucocorticoids.**
Q. Zhang*, S. Koser, and S. Donkin, *Purdue University, West Lafayette, IN*.

W191 **Effects of heat stress on insulin production in β-TC-6 pancreatic cells.**
M. V. Sanz-Fernandez*[1], R. L. Boddicker[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*.

W192 **Relationship of single nucleotide polymorphisms of the bovine NOS2 and NOS3 genes with disease resistance in feedlot steers.**
A. J. Davis*, D. L. Kreider, E. B. Kegley, J. T. Richeson, and D. L. Galloway, *Animal Science Department, University of Arkansas Division of Agriculture, Fayetteville*.

W193 **Hypothalamic and abomasal mRNA expression of regulatory feed intake genes in cows grazing different herbage allowances of native pastures.**
V. Bassaizteguy, A. Casal, A. L. Astessiano, A. Kaitazoff, M. Veyga, M. Carriquiry, and A. I. Trujillo*, *Universidad de la Republica. Facultad de Agronomia, Montevideo, Montevideo, Uruguay*.

W194 **Identification of short-chain fatty acid (SCFA) receptor transcripts in ruminal papillae and responses to SCFA infusion.**
K. Yuan*, L. K. Mamedova, S. H. Li, and B. J. Bradford, *Kansas State University, Manhattan*.

W195 **Calibration of a dynamic, mechanistic model of amino acid and insulin effects on protein synthesis in animal tissues to represent liver and skeletal muscle.**
E. R. El-Haroun[1,2], J. J. Kim*[1], D. P. Bureau[1], A. R. Willms[1], and J. P. Cant[1], [1]*University of Guelph, Guelph, Ontario, Canada*, [2]*Cairo University, Giza, Cairo, Egypt*.

W196 **Expression of adiponectin and leptin receptors and angiopoietin-like protein 4 (ANGLP4) mRNA differed in the of pure and crossbred beef cows grazing different herbage allowances of native pastures.**
M. Carriquiry*, M. Veyga, A. Casal, A. L. Astessiano, and J. Laporta, *School of Agronomy, UdelaR, Montevideo, Uruguay*.

W197 **Gene expression analysis of glutathione peroxidase, catalase, and superoxide dismutase (Mn) in white blood cells from dairy cows receiving an apple base nutraceutic supplement.**
L. E. Escobedo-Morales, J. A. Grado-Ahuir*, C. Rodríguez-Muela, P. Hernández-Briano, and R. M. Villaseñor-González, *Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México*.

W198 **Measurements of saliva secretion and salivary fluxes of metabolites from jugular–arterial concentration differences, hemoglobin concentration, and jugular blood flow.**
A. C. Storm*[1], M. Larsen[1], and N. B. Kristensen[1,2], [1]*Aarhus University, Department of Animal Science, Tjele, Denmark*, [2]*Syddanskkvæg, Vojens, Denmark*.

W199 **Is colostrum quality in dairy cows related to postpartum health, production, or fertility?**
A. R. Dresch*[1], A. H. Souza[1], P. D. Carvalho[1], L. M. Vieira[1,2], J. L. M. Vasconcelos[3], R. A. Cerri[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Sao Paulo-VRA, SP, Brazil*, [3]*Sao Paulo State University Botucatu, SP, Brazil*, [4]*University of British Columbia, BC, Canada*.

W200 **Effect of 17β-estradiol on cGMP-PK1 expression in myometrial longitudinal muscles.**
O. Y. Gulay*[1], A. Bulbul[2], M. S. Gulay[1], K. Altunbas[2], and O. O. Akkaya[2], [1]*Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkiye*, [2]*Afyonkocatepe University, Faculty of Veterinary Medicine, Afyonkocatepe, Turkiye*.

W201 **Expression of sex steroid receptors in placental tissues during early pregnancy in sheep.**
L. P. Reynolds*[1], P. P. Borowicz[1], M. L. Johnson[1], J. Haring[1], R. Ashley[2], and A. T. Grazul-Bilska[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*.

W202 **Carryover effects on progesterone concentrations and fetal numbers in ewes given human chorionic gonadotropin.**
C. M. Richardson*, R. A. Halalsheh, D. M. Hallford, and T. T. Ross, *New Mexico State University, Las Cruces*.

W203 **Serum testosterone concentrations after feeding in rams treated with GnRH.**
M. M. Guardieiro*[1], F. L. M. Silva[1], A. A. Johnson[2], R. S. Gentil[1], P. L. J. Monteiro[1], D. M. Polizel[1], R. A. Souza[1], I. Susin[1], E. Oba[3], G. B. Mourão[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*Texas A&M University, College Station*, [3]*São Paulo State University, Botucatu, SP, Brazil*.

W204 **The potential effects of dietary nitrate on pregnancy mechanisms in ewes.**
K. J. Austin*, R. R. Cockrum, L. E. Speiser, and K. M. Cammack, *University of Wyoming, Laramie*.

W205 **Effects of intravenous glucose infusion and nutritional balance on expression of enzymes responsible for catabolism of progesterone in cattle.**
F. Vieira[1], R. Cooke[2], A. Aboin[1], P. Lima[3], and J. L. Vasconcelos*[1], [1]*DPA-FMVZ-UNESP, Botucatu, SP, Brazil*, [2]*Oregon State University, Burns*, [3]*IBB-UNESP, Botucatu, SP, Brazil*.

W206 **Ex vivo model for endotoxic laminitis in ruminants.**
S. Schaumberger*, N. Reisinger, and G. Schatzmayr, *Biomin Research Center, Tulln, Austria*.

W207 **Effect of different centrifugation protocols and comparison of four extenders for storage of cooled Caspian horse spermatozoa for 48 hours.**
H. Nouri[1], A. Towhidi*[1], and M. Bahreini[2], [1]*Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran*, [2]*Animal Breeding Center of Iran (A.I. lab), Iran*.

W208 **Pigs fed camelina meal increases liver CYP8B1 expression.**
W. J. Meadus*[1], P. Duff[1], T. McDonald[2], and W. Caine[1], [1]*AAFC-Lacombe, Lacombe, AB, Canada*, [2]*Olds College, Olds, AB, Canada*.

W209 **Effect of exogenous testosterone on testes characteristics of large white pigs in a humid enviroment.**
A. O. Ladokun*[1], J. R. Otite[2], O. M. Alabi[3], and D. O. Adejumo[2], [1]*University of Agriculture, Abeokuta, Ogun, Nigeria*, [2]*University of Ibadan, Ibadan, Oyo, Nigeria*, [3]*Bowen University, Iwo, Osun, Nigeria*.

W210 **Effect of heat stress on phosphatidylinositol-3 kinase signaling in gilt ovaries.**
J. Nteeba*, E. E. Ullerich, S. C. Pearce, R. Boddicker, J. W. Ross, L. H. Baumgard, and A. F. Keating, *Department of Animal Science, Iowa State University of Science and Technology, Ames*.

W211 **Acute duration heat stress alters expression of cellular bioenergetic-associated genes in skeletal muscle of growing pigs.**
S. G. L. Won*[3], G. Xie[3], R. L. Boddicker[1], J. N. Rhoades[2], T. L. Scheffler[3], J. M. Scheffler[3], M. C. Lucy[2], T. J. Safranski[2], J. T. Selsby[1], S. Lonergan[1], L. H. Baumgard[1], J. W. Ross[1], and R. P. Rhoads[3], [1]*Iowa State University, Ames*, [2]*University of Missouri, Columbia*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

W212 **Effect of heat stress (HS) on thermal regulation during pregnancy in first parity sows.**
M. C. Lucy*[1], T. J. Safranski[1], J. N. Rhoades[1], J. W. Ross[2], N. K. Gabler[2], R. P. Rhoads[3], and L. H. Baumgard[2], [1]*University of Missouri, Columbia*, [2]*Iowa State University, Ames*, [3]*Virginia Tech, Blacksburg*.

W213 **Hair cortisol concentrations—Influence of color and location in Holstein cows.**
R. L. A. Cerri*[1], A. M. Tabmasbi[2], and D. M. Veira[3], [1]*Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*, [2]*Fedowsi University of Mashhad, Mashhad, Iran*, [3]*Agriculture & Agri-Food Canada, Agassiz, BC, Canada*.

W214 **Animal and ovarian parameters affect fertilization and embryo quality in high-producing lactating dairy cows.**
R. L. A. Cerri*[1], W. W. Thatcher[2], and J. E. P. Santos[2], [1]*University of British Columbia, Vancouver, BC, Canada*, [2]*University of Florida, Gainesville*.

W215 **Relationships between sperm motility and in vivo and in vitro fertility of Holstein and Jersey bulls.**
M. D. Utt*[1], M. A. Coutinho da Silva[2], C. A. Messerschmidt[2], J. M. DeJarnette[3], C. E. Marshall[3], F. A. Abreu[1], and M. L. Day[1], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Department of Clinical Sciences, College of Veterinary Medicine, The Ohio State University, Columbus*, [3]*Select Sires Inc., Plain City, OH*.

W216 **Placement of semen in uterine horns failed to improve fertilization rates in superovulated Holstein cows.**
P. D. Carvalho*[1], A. H. Souza[1], A. R. Dresch[1], L. M. Vieira[1,2], K. S. Hackbart[1], D. Luchini[3], S. Bertics[1], N. Betzold[4], M. C. Wiltbank[1], and R. D. Shaver[1], [1]*University of Wisconsin-Madison, Madsion*, [2]*University of Sao Paulo-VRA, SP 05508, Brazil*, [3]*Adisseo, Alpharetta, GA*, [4]*U.S. Dairy Forage Research Farm, Prairie du Sac, WI*.

W217 **Influence of sex and breed of the calf on synchronization and pregnancy rates in cows submitted to timed AI.**
A. P. Lemes*[1], R. F. G. Peres[2], A. D. P. Rodrigues[3], M. M. Guardieiro[1], E. Oba[3], G. B. Mourão[1], and R. Sartori[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*Agropecuária Fazenda Brasil, Barra do Garças, MT, Brazil*, [3]*São Paulo State University, Botucatu, SP, Brazil*.

W218 **The requirement of GnRH at the onset of the 5-d Select Synch + CIDR program in beef heifers.**
F. M. Abreu*[1], L. H. Cruppe[1], M. V. Biehl[3], A. D. P. Rodrigues[2], M. D. Utt[1], G. A. Bridges[4], J. L. M. Vasconcelos[2], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*Sao Paulo State University, Botucatu, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*, [4]*University of Minnesota, Grand Rapids*.

W219 **Efficacy of the "CoPGF" approach to induce luteolysis in the 5-d CO-Synch + CIDR program in lactating beef cows.**
M. V. Biehl*[1,3], L. H. Cruppe[1], F. M. Abreu[1], A. D. P. Rodrigues[4], M. L. Mussard[1], G. A. Bridges[2], A. V. Pires[3], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Minnesota, Grand Rapids*, [3]*University of Sao Paulo, Piracicaba, SP, Brazil*, [4]*Sao Paulo State University, Botucatu, SP, Brazil*.

W220 **Effects of GnRH and administering number of PGF2α doses in the 5-d timed AI program on ovarian responses and fertility of dairy heifers.**
F. S. Lima*[1], E. S. Ribeiro[1], R. S. Bisinotto[1], N. Martinez[1], L. F. Greco[1], K. N. Galvão[1], C. A. Risco[1], W. W. Thatcher[1], M. Amstalden[2], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*Texas A&M University, College Station*.

W221 **Comparison between the GGPG and two PGF2α based resynchronization programs on fertility in lactating dairy cows.**
R. G. S. Bruno*[1,2], A. M. Farias[1], K. J. Lager[1,2], D. E. Hawkins[2], and T. R. Bilby[1], [1]*Texas A&M University, College Station*, [2]*West Texas A&M University, Canyon*.

W406 **Inflammatory pathways contribute to the metabolic adaptations to lactation in dairy cattle.**
J. K. Farney*[1], L. K. Mamedova[1], J. F. Coetzee[2], B. KuKanich[1], L. M. Sordillo[3], J. E. Minton[1], L. C. Hollis[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Iowa State University, Ames*, [3]*Michigan State University, East Lansing*.

Production, Management and the Environment
Dairy II

W222 **Evaluation of management, nutrient consistency and sanitation of automated calf feeders.**
K. L. Machado*, R. E. James, and M. L. McGilliard, *Dept. of Dairy Science, Virginia Tech, Blacksburg*.

W223 **Performance, health, behavior and respiratory antibody production of individually vs. grouped housed dairy calves.**
M. S. Calvo[1], C. J. Neumeier*[1], L. E. Hulbert[1], A. Louie[2], L. J. Gershwin[3], K. E. Pinkerton[4], C. B. Tucker[1], K. C. Klasing[1], and F. M. Mitloehner[1], [1]*Department of Animal Science, University of California, Davis*, [2]*School of Veterinary Medicine, University of California, Davis*, [3]*Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, University of California, Davis*, [4]*Department of Anatomy, Physiology, and Cell Biology, School of Veterinary Medicine, Center for Health and the Environment, University of California, Davis*.

W224 **Performance and welfare of high-yielding dairy cows subjected to 5 or 8 cooling sessions daily in a hot and humid climate.**
U. Moallem*, J. Miron, H. Lehrer, M. Zachut, and H. Honig, *Volcani Center, Bet Dagan, Israel*.

W225 **Effects of presynchronization with GnRH or prostaglandin F2α before the start of a resynchronization protocol on reproductive performance of dairy cows.**
A. A. Scanavez[1], L. G. D. Mendonça[1], J. G. N. Moraes[1], P. R. B. Silva[1], G. Lopes[2], and R. C. Chebel*[1], [1]*Department of Veterinary Population Medicine, University of Minnesota, Saint Paul*, [2]*Accelerated Genetics, Baraboo, WI*.

W226 **Seasonal effect of a reduced dose of prostaglandin $F_{2\alpha}$ on estrus response in lactating dairy cows.**
R. W. Silcox*, J. B. Brinkerhoff, S. Hatch, and L. T. Jacobs, *Brigham Young University, Provo, UT*.

W227 **Degree of agreement between the ration formulated and the ration fed on seven California dairies.**
N. Silva-del-Río*[1] and A. R. Castillo[2], [1]*Veterinary Teaching and Research Center, Tulare, CA*, [2]*University of California, Cooperative Extension, Merced*.

W228 **Nitrogen and phosphorus utilization by dairy cows on small and medium-sized farms.**
Z. Dou, J. D. Ferguson, D. T. Galligan, C. F. Ramberg, D. W. Remsburg, L. D. Baker, R. J. Munson, and Z. Wu*, *University of Pennsylvania, Kennett Square*.

W229 **Basic economic indexes on small and medium sized dairy farms.**
D. T. Galligan*, Z. Dou, J. D. Ferguson, C. F. Ramberg, D. W. Remsburg, L. D. Baker, R. J. Munson, and Z. Wu, *University of Pennsylvania, Kennett Square*.

W230 **Technological level of Holstein cattle herds in the West and North of Mexico.**
D. V. Mariscal-Aguayo*, H. Estrella-Quintero, R. Núñez-Domínguez, and G. Maldonado-García, *Universidad Autónoma Chapingo, Chapingo, Estado de México, México*.

W231 **Association of stocking density, production, and behavioral patterns of dairy cows milked in automatic milking systems.**
J. A. Deming[1], R. Bergeron[2], K. E. Leslie[3], and T. J. DeVries*[1], [1]*Dept. of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada*, [2]*Dept. of Animal and Poultry Science, University of Guelph, Campus d'Alfred, Alfred, ON, Canada*, [3]*Dept. of Population Medicine, University of Guelph, Guelph, ON, Canada*.

W232 **Performance of dairy cows managed with automatic milking and three contrasting feeding systems.**
S. A. Utsumi* and D. K. Beede, *Michigan State University, East Lansing*.

W233 **Potential for a real-time location system for dynamic tracking of dairy cow location within dairy facilities.**
R. A. Black*[1], T. S. Stombaugh[1], S. R. Luciani[2], M. P. Sama[1], R. L. Klingenfus[3], A. B. Klingenfus[3], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*AiRISTA, Sparks, MD*, [3]*Harvest Home Dairy, Crestwood, KY*.

W234 **Effects of prepartum dietary energy density and postpartum extruded full-fat soybean (ESB) supplementation on energy balance and productive performance of transition dairy cows.**
H. Su*, F. Wang, Z. Yang, Z. Cao, and S. Li, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*.

W235 **Physiological and productive responses to seasonal variation in transition dairy cows.**
H. Su*, F. Wang, Z. Yang, Z. Cao, and S. Li, *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China*.

Production, Management and the Environment
Environmental Quality

W236 **Using dietary saponin extracts to reduce methane emissions from steers.**
W. Li* and W. Powers, *Michigan State University, East Lansing*.

W237 **Does total condensed tannin concentration predict rumen methane production in vitro?**
H. D. Naumann*[1], L. O. Tedeschi[1], J. P. Muir[2], B. D. Lambert[2,3], D. K. Andrade Silva[4], and M. A. Fonseca[5], [1]*Texas A&M University, College Station*, [2]*Texas AgriLife Research, Stephenville*, [3]*Tarleton State University, Stephenville, TX*, [4]*Federal Rural University of Pernambuco, Garanhuns, Pernambuco, Brazil*, [5]*Federal University of Viçosa, Viçosa, Minas Gerais, Brazil*.

W238 **Methane production from novel oat varieties measured by gas production.**
J. M. Moorby*, A. A. Cowan, D. K. Leemans, and A. H. Marshall, *Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK*.

W239 **Effect of crude glycerin on methane emissions of male beef calves finished in feedlot.**
J. F. Lage*[1], T. T. Berchielli[1], I. P. C. Carvalho[1], A. Berndt[2], R. T. S. Frighetto[3], E. San Vito[1], R. A. Silva[1], A. F. Ribeiro[1], L. M. Delevatti[1], E. E. Dallantonia[1], L. R. Simonetti[1], and R. A. Reis[1], [1]*Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil*, [2]*Embrapa Pecuária Sudeste, São Carlos, São Paulo, Brazil*, [3]*Embrapa Meio Ambiente, Jaguariúna, São Paulo, Brazil*.

W240 **Prediction of methane emission from enteric fermentation of growing-finishing Hanwoo steers using IPCC methodology.**
N. C. Jo*[1], S. Y. Jeong[1], K. H. Park[2], and S. Seo[1], [1]*Chungnam National University, Daejeon, Republic of Korea*, [2]*National Institute of Animal Science, R.D.A., Suwon, Republic of Korea*.

W241 **Enteric methane emissions by dairy cows grazing temperate pastures.**
N. Nelson*[1], K. Steensma[1], S. Utsumi[1], D. K. Beede[1], S. Zimmerman[2], and P. Zimmerman[2], [1]*Michigan State University, East Lansing*, [2]*C-Lock Technology Inc., Rapid City, SD*.

W242 **Estimation of greenhouse gas emissions from beef cattle production systems using whole-farm models.**
A. W. Alemu*[1], K. H. Ominski[1], M. Tenuta[1], and E. Kebreab[2], [1]*University of Manitoba, Winnipeg, MB, Canada*, [2]*University of California, California, Davis*.

W243 **Isotope ratio mass spectrometry monitoring of nitrogen volatilization from cattle feces and ^{15}N-labeled synthetic urine.**
F. Y. Ayadi*, E. L. Cortus, and D. E. Clay, *South Dakota State University, Brookings*.

W244 **Identifying ammonia hotspots on a Colorado dairy using conditional passive samplers and inverse modeling.**
C. Williams*, J. Ham, and K. Shonkwiler, *Colorado State University, Fort Collins*.

W245 **Effects of alum and aluminum chloride on volatile fatty acid concentration and pathogen populations in Hanwoo (Korean native cattle) manure.**
C. M. Kim[1], S. C. Kim[2], S. M. Amanullah[2], H. J. Lee[3], J. H. Choi[4], and I. H. Choi*[5], [1]*Department of Chemistry, Sookmyung Women's University, Seoul, South Korea*, [2]*Department of Animal Science (Inst. Agric. Life Sci.), Gyeongsang National University, Jinju, South Korea*, [3]*Division of Applied Life Science (BK 21), Gyeongsang National University, Jinju, South Korea*, [4]*Department of Chemistry, Hanyang University, Seoul, South Korea*, [5]*Department of Companion Animal & Animal Resources Science, Joongbu University, Kumsan, South Korea*.

W246 **Whole-farm balances of phosphorus and potassium on dairy farms.**
D. Fulawka, T. L. Garner, K. H. Ominski, D. Flaten, and J. C. Plaizier*, *University of Manitoba, Winnipeg, MB, Canada*.

W247 **Foliar uptake and utilization of phosphorus by grazing cattle as influenced by nitrogen fertilization regime.**
S. L. Dillard*, W. F. Owsley, C. W. Wood, B. H. Wood, and R. B. Muntifering, *Auburn University, Auburn, AL*.

W248 **Soil CO_2 emission during the dry season under different grazing intensities in Southern Brazil.**
L. de Figueiredo Brito, M. Vieira Azenha*, A. R. Panosso, F. H. M. de Souza, A. A. Oliveira, S. S. Santana, R. A. Reis, N. La Scala, and A. C. Ruggieri, *Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil*.

W249 **Using a batch culture system to measure volatile organic compounds as the primary substrates for methanogenesis in anaerobic digestion of dairy waste.**
C. L. Ross*, K. C. Das, and M. A. Froetschel, *University of Georgia, Athens*.

Ruminant Nutrition
Beef: Feed Additives

W250 **Live yeast and adaptation protocols on finishing feedlot Nellore cattle fed high concentrate diets.**
P. L. Alvarez*, S. L. Silva, L. S. Martello, M. R. Mazon, L. S. Oliveira, P. H. Cancian, A. C. Ianni, L. Z. Zanoni, R. F. Carvalho, A. P. S. Silva, and P. R. Leme, *Universidade de São Paulo, Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, SP, Brazil*.

W251 **Effect of slow release urea supplementation during the dry season on Nellore cattle performance in Brazil.**
D. P. Pantoni*[1], D. S. Graça[1], M. H. Ramos[2], and P. C. Molina[1], [1]*Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*, [2]*Research Institute Flávio Guarani - Rehagro, Belo Horizonte, Minas Gerais, Brazil*.

W252 **Intake, digestibility and digestion kinetics of beef steers supplemented with slow-release urea in diets with two concentrate levels.**
P. D. B. Benedeti, P. V. R. Paulino*, T. S. Martins, E. F. Lisboa, L. H. P. Silva, C. R. V. Teixeira, L. C. Alves, M. S. Duarte, R. Mezzomo, J. C. M. Lima, J. P. I. S. Monnerat, M. I. Marcondes, and S. C. Valadares Filho, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

W253 **Dose response effects of laidlomycin propionate plus chlortetracycline or monensin plus tylosin on growth performance, carcass merit and health of growing-finishing beef steers.**
M. E. Branine*[1], M. E. Hubbert[2], M. L. Galyean[3], and B. D. Hunsaker[4], [1]*Pfizer Animal Health, Canon City, CO*, [2]*New Mexico State University, Clayton*, [3]*Texas Tech University, Lubbock*, [4]*Summit Research LLC, Wellington, CO*.

W254 **Adipose gene expression patterns in finishing steers fed steam-flaked corn diets supplemented with dietary *Aspergillus oryzae* extract containing α-amylase activity.**
D. E. Graugnard*[1], K. M. Brennan[1], J. S. Jennings[1], and J. J. Wagner[2], [1]*Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY*, [2]*Southeast Colorado Research Center, Colorado State University, Lamar*.

W255 **Effect of *Saccharomyces cerevisiae* CNCM I-1077 supplementation on zootechnical performances and feeding behavior of dairy bull calves during growing period.**
C. Loncke[1], L. Van Nespen[1], C. Launay[1], E. Sulmont[1], L. Dussert*[2], and V. Demey[2], [1]*INZO, Chierry, France*, [2]*Lallemand SAS, Blagnac, France*.

W256 **Effects of medicinal feed additive (MFA) program fed with varying levels of wet distillers grains (WDGS) on growth performance, carcass characteristics and health of growing / finishing beef steers.**
M. E. Branine*[1], M. E. Hubbert[2], and B. D. Hunsaker[3], [1]*Pfizer Animal Health, Canon City, CO*, [2]*New Mexico State University, Clayton*, [3]*Summit Research LLC, Wellington, CO*.

W257 **Basal diet affects ruminal in situ degradation rate of urea and Optigen II in steers.**
V. B. Holder*[1], J. S. Jennings[2], and J. M. Tricarico[3], [1]*University of Kentucky, Lexington*, [2]*Alltech, Brookings, SD*, [3]*Innovation Center for U.S. Dairy, Rosemont, IL*.

W258 **Effect of feeding chelated forms of Zn, Cu, and Mn in combination with methionine on growth and reproductive development of heifers.**
R. Harvey*[1], Y. Wang[2], G. I. Zanton[2], T. J. Wistuba[2], and M. S. Kerley[1], [1]*University of Missouri, Columbia*, [2]*Novus International Inc., St. Charles, MO*.

W259 **The effect of combination of metal amino acid chelates, Se yeast, mannaoligosaccharides, and dietary antioxidants on the health and growth performance of high-risk calves.**
T. J. Wistuba*[1], G. I. Zanton[1], D. Nuzback[1], M. Andersen[1], and E. Larsen[2], [1]*Novus International Inc., St. Charles, MO*, [2]*Larsen Nutritional Solutiions, Fowler, CO*.

W260 **Effect of addition of increasing doses of chitosan in diets of Nellore cattle on the intake and digestibility total nutrients.**
R. V. Barletta*, A. P. C. Araújo, R. Gardinal, R. D. Mingoti, B. C. Ventureli, J. E. Freitas, T. H. A. Vendramine, J. R. Gandra, M. C. B. Santos, B. C. Benevento, V. G. C. Lacuna, and F. P. Rennó, *1University of Sao Paulo, Sao Paulo, Brazil*.

W261 **Ruminal parameters, microbial protein production, protein efficiency and nitrogen balance on beef steers supplemented with slow-release urea in diets with two concentrate levels.**
P. D. B. Benedeti[1], P. V. R. Paulino*[1], T. S. Martins[1], E. F. Lisboa[1], L. H. P. Silva[1], C. R. V. Teixeira[1], L. C. Alves[1], M. S. Duarte[1], R. Mezzomo[1], J. C. M. Lima[1], J. P. I. S. Monnerat[1], M. I. Marcondes[1], S. C. Valadares Filho[1], and M. Manella[2], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Alltech do Brasil, Curitiba, PR, Brazil*.

W262 **Impact of an all-natural liquid fermentation prototype on performance of feedlot cattle.**
M. Scott*[1], J. Miles[2], H. Vermaak[3], and S. Schalk[3], [1]*Diamond V, Cedar Rapids, IA*, [2]*University of Pretoria, Pretoria, Gauteng, South Africa*, [3]*Essential Nutrient Systems, Pretoria, Gauteng, South Africa*.

W263 **Effect of β-carotene supplementation on fatty acid profile and expression of genes involved in vitamin A metabolism in beef cattle.**
K. N. Condron*, J. N. Waddell, M. C. Claeys, R. P. Lemenager, and J. P. Schoonmaker, *Purdue University, West Lafayette, IN*.

W407 **Analysis of rumen methanogen diversity in cattle divergent for residual feed intake using next generation sequencing technology.**
C. A. Carberry*[1,2], D. A. Kenny[1], C. J. Creevey[1], and S. M. Waters[1], [1]*Animal and Bioscience Department, Animal and Grassland Research and Innovation Centre, Teagasc, Grange, Co. Meath, Ireland*, [2]*School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*.

Ruminant Nutrition
Co-Products

W264 **In vitro intestinal amino acid digestibility of distillers grains varies with grain source and milling process.**
C. Li[1,2], J. Q. Li[1], K. A. Beauchemin[2], and W. Z. Yang*[2], [1]*College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*, [2]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

W265 **In vivo determination of undegradable intake protein (UIP) of dried distillers grains with solubles (DDGS) and comparing DAPA and DNA as bacterial markers.**
E. Castillo-Lopez*, T. J. Klopfenstein, and P. J. Kononoff, *University of Nebraska-Lincoln, Lincoln*.

W266 **Urea treatment of different levels of pistachio hull and its relation to gas production in vitro.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources, University of Gorgan, Gorgan, Golestan, Iran*, [3]*Bonn University, Bonn, Germany*.

W267 **Effect of different levels of pistachio hull on in vitro gas production.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Bonn University, Bonn, Germany*.

W268 **Increased dietary tannin by addition of pistachio hull and its relation to fermentation parameters and protozoa content of rumen in Balochi male lambs.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi*[2], and B. Saremi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agriculture Sciences and Natural Resources University of Gorgan, Gorgan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W269 **Effects using of pistachio hull and polyethylene glycol supplementation on feed intake and apparent digestibility of nutrients in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W270 **Effects of feeding pistachio hull and polyethylene glycol (PEG) supplementation on milk fatty acids composition in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W271 **Milk fatty acid profile of Saanen dairy goats fed diets containing pistachio hull tannin and polyethylene glycol supplementation.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. Reza Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*.

W272 **Effects of pistachio hull and polyethylene glycol supplementation on milk yield and compositions in Saanen dairy goats.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W273 **Liver enzymes and immune system response of Saanen dairy goats supplemented with pistachio hull and polyethylene glycol.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[2], and B. Saremi*[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Agricultural Sciences & Natural Resources University of Gorgan, Gorgan, Golestan, Iran*, [3]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*.

W274 **Effects of pistachio tannins on nitrogen metabolism in Balochi male lambs.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], B. Saremi*[2], and A. R. Shahdadi[3], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agriculture Sciences and Natural Resources University of Gorgan, Gorgan, Iran*.

W275 **Different levels of tannin by dietary addition of pistachio hull and plasma metabolic profile in Balochi male lambs.**
A. Rahimi[1], A. A. Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], and B. Saremi*[2], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Bonn University, Bonn, Germany*.

W276 **Replacing alfalfa with different levels of pistachio hull and its effects on feed intake and digestibility of nutrients in total tract, rumen and post-rumen in Balochi male lambs.**
A. Rahimi[1], A. Ali Naserian[1], R. Valizadeh[1], A. Tahmasbi[1], A. R. Shahdadi[3], and B. Saremi*[2], [1]*Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran*, [2]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Germany*, [3]*Agriculture Sciences and Natural Resources University of Gorgan, Gorgan, Iran*.

W277 **Effect of increasing amounts of corn dried distillers grains with solubles in dairy cow diets on enteric methane emissions, digestibility, and milk production.**
C. Benchaar*[1], F. Hassanat[2], R. Gervais[2], P. Y. Chouinard[2], C. Julien[3], F. Tremblay[1], D. I. Massé[1], and H. V. Petit[1], [1]*Dairy and Swine Research and Development Centre-Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Département des Sciences Animales-Université Laval, Québec, QC, Canada*, [3]*INRA-Université de Toulouse, Castanet-Tolosan, France*.

W278 **The effect of feeding canola meal on the performance of Chinese Holstein cows.**
Z. G. Wang[1], C. R. Wang[1], G. L. Liu*[1,2], C. G. Zhang[1], and G. Yang[1], [1]*State Key Laboratory of Dairy Biotechnology, Shanghai Bright Holstan Co. Ltd., Shanghai, China*, [2]*Shanghai Dairy Breeding Center Co. Ltd., Shanghai, China*.

W279 **Effects of limit-feeding dried distillers grains to ewes during mid- to late-gestation on ram progeny post-weaning performance and carcass composition.**
R. L. Burgett*[1], J. R. Luther[2], D. L. Thomas[1], D. M. Schaefer[1], and A. E. Radunz[1], [1]*University of Wisconsin-Madison, Madiso*, [2]*University of Wisconsin-River Falls, River Falls*.

W280 **Effect of dried distillers grains with solubles (DDGS) on duodenal microbial crude protein (MCP) flow in steers as determined with DNA microbial markers.**
E. Castillo-Lopez*, T. J. Klopfenstein, and P. J. Kononoff, *University of Nebraska-Lincoln, Lincoln*.

W281 **Effect of canola meal on growth performance, carcass quality and meat fatty acid profiles of feedlot cattle.**
M. L. He*[1,2], T. A. McAllister[1], D. Gibb[3], and J. J. McKinnon[2], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*University of Saskatchewan, Saskatoon, SK, Canada*, [3]*Viterra Feed Products, Lethbridge, AB, Canada*.

W282 **Effects of roughage concentration in steam-flaked corn-based diets containing wet distillers grains with solubles on nutrient digestibility by feedlot cattle.**
J. S. Schutz*, C. H. Ponce, D. R. Smith, and M. L. Galyean, *Department of Animal and Food Sciences, Texas Tech University, Lubbock.*

W283 **Effect of sarsaponin supplementation on digestive function of steers fed a high grain distillers grain-feedlot diet.**
E. Valencia[1], M. F. Montano*[1], J. Salinas[2], V. M. Gonzalez[1], O. M. Manriquez[1], J. A. Valdez[1], J. O. Chirino[1], O. J. Castillo[1], G. M. Carvajal[1], and W. G. Caceres[1], [1]*Universidad Autónoma de Baja California, Mexicali, B. C. Mexico*, [2]*Universidad Autónoma de Tamaulipas, Ciudad Victoria, Tam. Mexico*.

W284 **Effect of tannins extract supplementation on feedlot performance and plasma urea nitrogen of yearling bulls fed dry-ground corn-based diets containing corn-DDG and cane molasses.**
R. Barajas*[1], B. J. Cervantes[2], M. A. Espino[1,3], A. Camacho[1], M. Verdugo[1], L. R. Flores[1], J. J. Lomeli[1], and J. A. Romo[1], [1]*FMVZ-Universidad Autonóma de Sinaloa, Culiacán, Sinaloa, México*, [2]*Ganadera Los Migueles S. A. de C. V., Culiacán, Sinaloa, México*, [3]*Pronutrient Developers, León, Guanajuato, México*.

W285 **Inclusion of triticale dried distiller grains and flaxseed in feedlot cattle diets increases alpha-linolenic acid in beef without affecting carcass or meat quality traits.**
M. L. He*[1,2], L. M. Hernandez-Calva[1], T. A. McAllister[1], J. L. Aalhus[3], M. E. R. Dugan[3], and J. J. McKinnon[2], [1]*Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*University of Saskatchewan, Saskatoon, SK, Canada*, [3]*Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada*.

W286 **Effects of increasing distillers grain and monensin on feed intake and ruminal fermentation in feedlot cattle diets.**
L. Xu[1,2], Y. Jin[2], C. Li[1,2], and W. Z. Yang*[1], [1]*Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [2]*College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China*.

W287 **Modeling nutrient supply from combined feeds of corn with wheat dried distillers grains with solubles at different ratios in ruminants.**
D. Damiran, M. Yari, L. Yang*, X. Zhang, and P. Yu, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

W288 **Effects of biodiesel by-products on in vitro fermentation, digestion kinetics and methane production.**
S. J. Meale*[1], S. M. Olivares-Palma[1], L. G. R. Pereira[2], F. S. Machado[2], H. Carneiro[2], F. C. F. Lopes[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Embrapa Dairy Cattle, Juiz de Fora, MG, Brazil.*

W289 **Effect of replacing barley grain with glycerol in feedlot diets on nutrient digestibility, methane emissions, growth, fatty acid profiles and carcass traits of lambs.**
J. S. Avila[1,3], S. J. Meale*[1,2], T. A. McAllister[2], M. L. He[2], O. M. Harstad[4], K. A. Beauchemin[2], S. M. McGinn[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [3]*Facultad de Ciencias Veterinarias, Universidad de Concepción, Chillan, Chile*, [4]*Norwegian University of Life Sciences (UMB), Ås, Norway*.

W290 **Crude glycerin decreases fiber digestibility in finishing Nellore bulls.**
E. H. C. B. van Cleef*[1], J. M. B. Ezequiel[1], J. B. D. Sancanari[1,2], A. P. D'Aurea[1], V. R. Fávaro[1], D. A. V. Silva[1], J. W. Catellan[1], and F. B. O. Scarpino[1], [1]*São Paulo State University, Jaboticabal, São Paulo, Brazil*, [2]*Uzinas Chimicas Brasileiras S. A., Jaboticabal, São Paulo, Brazil*.

W291 **Effect of replacing wheat offal with dried oil palm slurry on the performance and carcass traits of Ndama weaners.**
M. K. Adewumi* and J. A. Aderiye, *Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria*.

W292 **Glycerin from soybean biodiesel in diets with high levels of concentrate for sheep.**
R. L. Galati*, P. G. Paiva, L. S. Cabral, J. T. Zervoudakis, J. G. Abreu, R. S. Gomes, M. P. S. Fachin, and A. P. G. Baroni, *Universidade Federal do Mato Grosso, FAMEV/UFMT, Cuiabá, Brazil*.

W293 **Nitrogen balance and microbial efficiency in sheep fed with diets containing glycerin.**
R. L. Galati*, P. G. Paiva, J. T. Zervoudakis, L. S. Cabral, J. G. Abreu, M. Zanchetin, L. R. Rebelo, and R. S. Fioravante Filho, *Universidade Federal do Mato Grosso, FAMEV/UFMT, Cuiabá, Brazil*.

W294 **Blood parameters of Nelore steers fed with glycerin.**
V. R. Fávaro*, J. M. B. Ezequiel, A. P. D'Áurea, J. B. D. Sancanari, E. H. C. B. van Cleef, A. C. Homem Junior, and V. C. Santos, *São Paulo State University, Jaboticabal, São Paulo, Brazil*.

W295 **Levels of replacement of corn by glycerin in multiple supplements for Nelore steers grazing in dry season: Performance.**
J. T. Zervoudakis*, R. P. da Silva, L. C. R. P. Silva, A. J. Neto, J. F. W. Koscheck, R. G. F. da Silva, T. P. Trindade, A. O. Zanette, and E. R. Donida, *Federal University of Mato Grosso, Cuiabá, Mato Grosso, Brazil*.

Ruminant Nutrition
Dairy: Feeds and co-products

W296 **Productive response of lactating cows fed low-fat dried distillers grains with solubles in combination with rumen-inert fat.**
H. A. Ramirez Ramirez*[1], P. J. Kononoff[1], and K. Karges[2], [1]*Department of Animal Science, University of Nebraska, Lincoln*, [2]*Dakota Gold Research Association, Sioux Falls, SD*.

W297 **Production performance and ruminal fermentation of dairy cows fed diets replacing starch from corn with non-forage fiber from distillers grains.**
S. D. Ranathunga*, M. M. Abdelqader, K. F. Kalscheur, A. R. Hippen, D. J. Schingoethe, and D. P. Casper, *Dairy Science Department, South Dakota State University, Brookings*.

W298 **Effect of supplementing dairy cow diets with different forms of palm oil-based supplements on the fatty acid profile of milk fat.**
P. C. Aikman[1], K. E. Kliem[1], R. M. Kirkland*[2], A. K. Jones[1], S. L. Potterton[1], and C. K. Reynolds[1], [1]*University of Reading, Reading, UK*, [2]*Volac International Ltd., Royston, UK*.

W299 **Influence of corn silage hybrid on lactation performance by dairy cows.**
M. S. Akins* and R. D. Shaver, *Department of Dairy Science, University of Wisconsin-Madison, Madison*.

W300 **Sugar cane silage for lactating dairy cows.**
M. I. Marcondes*[1], F. L. Andrade[1], R. A. V. Vergara[1], A. S. Trece[1], T. E. Silva[1], W. L. Cardoso[1], and A. B. Fonseca[2], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*University of New Hampshire, Durham*.

W301 **Influence of dietary starch and forage NDF concentrations on digestion and lactation performance by dairy cows.**
L. F. Ferraretto* and R. D. Shaver, *University of Wisconsin-Madison, Madison*.

W302 **Processed corn stover as a corn silage replacement feed for lactating dairy cattle.**
S. S. Donkin*[1], A. C. Headley[1], H. A. Tucker[1], P. H. Doane[2], and M. J. Cecava[2], [1]*Purdue University, West Lafayette, IN*, [2]*Archer Daniels Midland Company, Decatur, IL*.

W303 **Effects of feeding camelina meal on milk production and composition in lactating Holstein cows.**
B. C. Casperson*, J. E. Williams, K. M. Hunt, K. M. Steinkamp, and M. A. McGuire, *Department of Animal and Veterinary Science, University of Idaho, Moscow*.

W304 **Comparison of the NRC (2001) model and the DVE/OEB system in the prediction of protein supply to dairy cows from hulless barley (*Hordeum vulgare* L.) with altered carbohydrate traits.**
L. Yang*[1,3], D. Christensen[1,3], J. McKinnon[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

W305 **Effect of different forage and dried distillers grains with solubles concentrations on sorting behavior of lactating dairy cows.**
S. D. Ranathunga*, K. F. Kalscheur, and D. P. Casper, *Dairy Science Department, South Dakota State University, Brookings*.

W306 **Effects of sudden additions of condensed distillers solubles to diets of lactating dairy cows on milk production and milk components.**
S. E. Fraley*, J. R. Townsend, and T. D. Nennich, *Purdue University, West Lafayette, IN*.

W307 **Occurrence and concentration of mycotoxins, molds and yeasts on corn co-products from South Dakota and Minnesota dairy farms.**
F. Diaz-Royon*[1], A. Garcia[1], K. F. Kalscheur[1], K. A. Rosentrater[2], J. S. Jennings[3], and K. Mjoun[3], [1]*Dairy Science Department, South Dakota State University, Brookings*, [2]*Department of Agricultural and Biosystems Engineering, Iowa State University, Ames*, [3]*Alltech South Dakota, Brookings*.

W308 **Surveying the constraints of ethanol co-products utilization on dairy farms.**
F. Diaz-Royon*[1], A. Garcia[1], K. F. Kalscheur[1], K. A. Rosentrater[2], J. S. Jennings[3], and K. Mjoun[3], [1]*Dairy Science Department, South Dakota State University, Brookings*, [2]*Department of Agricultural and Biosystems Engineering, Iowa State University, Ames*, [3]*Alltech South Dakota, Brookings*.

W309 **Effects of molasses products on productivity and milk fatty acid profile of cows fed high-DDGS diets.**
A. V. Siverson* and B. J. Bradford, *Kansas State University, Manhattan*.

W310 **Effects of feeding brown midrib corn silage with a high dietary concentration of alfalfa hay during early and mid lactation on milk production of Holstein dairy cows.**
M. S. Holt*[1], A. J. Young[1], X. Dai[2], K. E. Nestor[3], and J.-S. Eun[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Utah Agricultural Experiment Station, Utah State University, Logan*, [3]*Mycogen Seeds, Indianapolis, IN*.

W311 **Effects of harvest date and a BMR hybrid on yield and nutrient composition of corn plants harvested for silage.**
P. Walker[1], M. J. Faulkner[1], T. D. Kaufman*[1], L. Brown[2], and F. N. Owens[2], [1]*Illinois State University, Normal*, [2]*Pioneer Hi-Bred International, a DuPont Business, Bloomington, IL*.

W312 **Chemical and nutrient availability of hulless barley (*Hordeum vulgare* L.) with altered carbohydrate characteristics.**
L. Yang*[1,3], J. McKinnon[1,3], D. Christensen[1,3], B. Rossnagel[2,3], A. Beattie[2,3], and P. Yu[1,3], [1]*Department of Animal and Poultry Science*, [2]*Crop Development Centre*, [3]*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

W313 **Effects of dietary protein content and source of grain on milk production and nitrogen efficiency in early lactating primiparous Holstein cows.**
H. Mirzaei Alamouti* and A. Mohammad, *University of Zanjan, Zanjan, Iran*.

W314 **Lactational performance, chewing behavior, and ruminal fermentation of dairy cows fed diets differing in amount and digestibility of NDF from two sources of corn silage.**
C. Kokko*, H. M. Dann, K. W. Cotanch, J. W. Darrah, and R. J. Grant, *William H. Miner Agricultural Research Institute, Chazy, NY*.

W315 **Reduced protein for late-lactation dairy cows fed ryegrass haylage-based diets.**
V. R. Moreira[1], A. B. D. Pereira*[2], L. K. Zeringue[1], C. Leonardi[3], B. F. Jenny[2], C. C. Williams[2], and M. E. McCormick[1], [1]*LSU AgCenter SE Research Sta., Franklinton, LA*, [2]*LSU AgCenter School of Animal Sciences, Baton Rouge, LA*, [3]*LSU Health Sciences Center, New Orleans, LA*.

W316 **Energy intake of dairy cows grazing native rangeland in México.**
R. Améndola-Massiotti*[1], H. Crespo-Lira[1], J. Burgueño-Ferreira[2], and M. Huerta-Bravo[1], [1]*Universidad Autónoma Chapingo, Chapingo, Estado de México, México*, [2]*CIMMYT, Texcoco, Estado de México, México*.

W317 **Feeding canola meal to dairy cows: A meta-analysis on lactational responses suggests underestimation of metabolizable protein supply by NRC (2001).**
R. Martineau, D. R. Ouellet, and H. Lapierre*, *Dairy and Swine R&D Centre Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*.

W318 **Milk production, milk composition and blood parameters of cows fed whole flaxseed or whole linola.**
H. V. Petit*[1], R. N. do Prado[1,2], M. F. Palin[1], and C. Benchaar[1], [1]*Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada*, [2]*Universidade Estadual de Maringa, Maringa, PR, Brazil*.

Ruminant Nutrition
Dairy: Rumen function and digestion

W319 **In situ ruminal degradability of soybean meal (SBM), canola meal (CM), and corn or wheat dried distillers grains (DDG).**
G. Maxin*, D. R. Ouellet, and H. Lapierre, *Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*.

W320 **Effect of carbohydrate source on performance and ruminal responses of dairy cows fed low-starch diets.**
H. M. Dann*[1], K. W. Cotanch[1], C. Kokko[1], K. Fujita[2], and R. J. Grant[1], [1]*William H. Miner Agricultural Research Institute, Chazy, NY*, [2]*ZEN-NOH National Federation of Agricultural Cooperative, Tokyo, Japan*.

W321 **Duodenal bioavailability of quercetin and rutin in German Holstein cows.**
A. Gohlke[1], C. J. Ingelmann[1], S. Wolffram[2], and C. C. Metges*[1], [1]*Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*, [2]*Institute of Animal Nutrition & Physiology, Christian-Albrechts-University of Kiel, Germany*.

W322 **Differences in rate of ruminal hydrogenation of C18 fatty acids in clover and ryegrass.**
J. Lejonklev*[1], A. C. Storm[2], M. K. Larsen[1], G. Mortensen[1], and M. R. Weisbjerg[2], [1]*Aarhus University, Department of Food Science, Tjele, Denmark*, [2]*Aarhus University, Department of Animal Science, Tjele, Denmark*.

W323 **Corn source and dietary protein degradability: effects on ruminal measures and proposed mechanism for degradable protein effects.**
M. B. Hall*, *U.S. Dairy Forage Research Center, USDA-ARS, Madison, WI.*

W324 **A meta-analysis of continuous culture rumen fermentation and digestibility data.**
A. N. Hristov*[1], C. Lee[1], R. A. Hristova[1], P. Huhtanen[2], and J. L. Firkins[3], [1]*The Pennsylvania State University, University Park*, [2]*Swedish University of Agricultural Sciences, Umeå, Sweden*, [3]*The Ohio State University, Columbus*.

W325 **Amount and digestibility of NDF affects rumen nutrient pool sizes and passage kinetics of dairy cows.**
K. W. Cotanch*, C. Kokko, H. M. Dann, J. W. Darrah, and R. J. Grant, *William H. Miner Agricultural Research Institute, Chazy, NY*.

W326 **Orchard grass forage effects on bacterial communities and long-chain fatty acid profiles in the rumen of Holstein heifers.**
R. Mohammed[1,2], G. E. Brink[1], D. M. Stevenson[1], K. A. Beauchemin[2], and P. J. Weimer*[1], [1]*USDA-ARS, US Dairy Forage Research Center, Madison, WI*, [2]*AAFC, Lethbridge Research Center, Lethbridge, AB, Canada*.

W327 **Silicone plastination of rumen models: A room temperature technique.**
H. C. Puch*, K. B. Cunningham, and D. C. Brown, *LongView Animal Nutrition Center, Land O'Lakes Purina Feeds, Gray Summit, MO*.

W328 **Techniques for sampling and measuring total two-dimensional surface area of rumen papillae.**
H. C. Puch*[1], K. M. O'Diam[2], and K. M. Daniels[2], [1]*LongView Animal Nutrition Center, Land O' Lakes Purina Feeds, Gray Summit MO*, [2]*Ohio Agricultural Research and Development Center, The Ohio State University, Wooster*.

W329 **Changes in rumen bacterial communities and rumen chemistry in primiparous Holstein cows during the periparturient period.**
R. Mohammed[1,2], D. M. Stevenson[2], P. J. Weimer[2], G. B. Penner*[3], and K. A. Beauchemin[1], [1]*AAFC, Lethbridge Research Center, Lethbridge, AB, Canada*, [2]*USDA-ARS, US Dairy Forage Research Center, Madison, WI*, [3]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

W330 **Detection of the methanol dehydrogenase structural gene *mxaF* in rumen fluid by PCR.**
E. T. Kim*[1], C. S. McSweeney[2], S. S. Lee[1], S. C. Kim[1], and S. H. Kang[2], [1]*Division of Applied Life Science (BK21 Program), Gyeongsang National University, Jinju, Gyeongnam, Republic of Korea*, [2]*CSIRO Livestock Industries, Queensland Bioscience Precinct, St Lucia, Qld, Australia*.

W331 **Evaluation of DM, NDF, and starch ruminal degradabilities of corn silage hybrids: A three-year study.**
D. R. Ouellet*[1], G. F. Tremblay[3], and A. F. Mustafa[2], [1]*Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Dept. of Animal Science, Ste-Anne de-Bellevue, QC, Canada*, [3]*Soils and Crops R&D Centre, Agriculture and Agri-Food Canada, Québec, QC, Canada*.

W332 **Rumen microorganisms growth as a function of the concentration of corn silage and soybean meal in culture medium.**
C. P. Ghedini[1], R. P. Lana[1], A. S. Oliveira[2], D. C. Abreu*[1], R. M. Paula[1], C. J. Silva[1], and P. E. P. Barros[3], [1]*Universidade Federal de Viçosa, Viçosa, MG, Brazil*, [2]*Universidade Federal do Mato Grosso, Sinop, MT, Brazil*, [3]*Universidade Federal de Lavras, Lavras, MG, Brazil*.

W333 **Passage of liquid and fiber particles in dairy cows fed diets differing in NDF from conventional and bmr corn silages.**
K. W. Cotanch*[1], C. Kokko[1], H. M. Dann[1], J. W. Darrah[1], R. J. Grant[1], and D. R. Mertens[2], [1]*William H. Miner Agricultural Research Institute, Chazy, NY*, [2]*Mertens Innovation & Research LLC, Belleville, WI.*

W334 **Effect of silica levels, and its location in the detergent fiber matrix, on in vitro gas production of rice straw.**
G. S. Cun*[1], G. A. Nader[2], and P. H. Robinson[1], [1]*University of California, Davis*, [2]*University of California Cooperative Extension, Yuba City*.

Ruminant Nutrition
General III

W335 **Variation in chemical composition among breeding lines of novel oat varieties as ruminant feeds.**
J. M. Moorby*, A. A. Cowan, and A. H. Marshall, *Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK*.

W336 **Ruminal metabolism in continuous culture fermentation when administrating high concentration of inorganic selenium in mixed cultures of ruminal microorganisms.**
J. M. Vera[1], T. Z. Davis[2], D. N. Miller[3], K. E. Panter[2], D. R. ZoBell[1], and J.-S. Eun*[1], [1]*Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*, [2]*Poisonous Plant Research Laboratory, USDA-ARS, Logan, UT*, [3]*Agroecosystem Management Research Unit, USDA-ARS, Lincoln, NE*.

W337 **Effects of algae on ruminal fermentation and digestion in continuous culture fermenters.**
A. M. Gehman*, G. A. Harrison, and B. Jacobs, *Alltech Biotechnology Inc, Nicholasville, KY.*

W338 **Digestion response of dairy heifers to the supplementation of autolyzed yeast.**
D. R. Gomide[3], R. F. Lima[1], N. M. Lopes[1], R. C. Oliveira[1], A. Ganner[2], R. A. N. Pereira[3], and M. N. Pereira*[1], [1]*Universidade Federal de Lavras, Lavras, Brazil*, [2]*Biomin Research Center, Tulln, Austria*, [3]*Empresa de Pesquisa Agropecuaria de Minas Gerais, Lavras, Brazil*.

W339 **The effect of several sodium and potassium salts on rumen pH.**
R. Garcia-Gonzalez*, C. Yunta, and H. van Laar, *Nutreco R&D, Boxmeer, the Netherlands*.

W340 **Effect of polyethylene glycol on in vitro fermentation kinetics and digestibility of native tree fruits.**
F. Aviles-Nova*[1], J. G. Estrada-F[2], O. Castelan-Ortega[3], B. Albarran-P[1], and A. Ramirez-O[1], [1]*Centro Universitario UAEM-Temascaltepec. Universidad Autonoma del Estado de Mexico, Temascaltepec, Edo. de Mexico, Mexico*, [2]*Instituto de Ciencias Agropecuarias y Rurales (ICAR) de la UAEM, Toluca, Edo. de Mexico, Mexico*, [3]*Facultad de Medicina Veterinaria y Zootecnia de la UAEM, Toluca, Edo. de Mexico, Mexico*.

W341 **Chemical composition and in vitro digestibility of foliage trees, and their use in feeding lambs in the dry tropics of central highlands of Mexico.**
S. Rojas-Hernandez[1], D. Castelan-Ortega[3], A. Garciâ-Martinez[2], J. Olivares-Perez[1], J. G. Estrada-F[4], and F. Aviles-Nova*[2], [1]*U. A. Medicina Veterinaria y Zootecnia, Universidad Autonoma de Guerrero, Ciudad Altamirano, Guerrero, Mexico*, [2]*CU - Temascaltepec, Universidad Autonoma del Estado de Mexico, Temascaltepec, Edo. de Mexico, Mexico*, [3]*Facultad de Medicina Veterinaria y Zootecnia - Universidad Autonoma del Estado de Mexico, Toluca, Edo. de Mexico, Mexico*, [4]*Instituto de Ciencias Agropecuarias y Rurales, Toluca, Edo. de Mexico, Mexico*.

W342 **Effect of replacing barley grain with wheat dry distillers grains with solubles on *in situ* degradation kinetics, growth, and fatty acid profiles of lambs.**
J. S. Avila[1], S. J. Meale*[1], A. S. O'Hara[1], A. Horadogoda[1], D. Palmer[1], T. A. McAllister[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

W343 **Could essential oils of thyme (*Zataria multiflora*) and peppermint (*Mentha piperita*) improve calf growth performance?**
M. Ebrahimi, M. Ganjkhanlou, and M. Dehghan-Banadaky*, *University of Tehran, Karaj, Tehran, Iran*.

W344 **In vitro investigation of various adsorbents to adsorb aflatoxin B1.**
M. Savari, M. Dehghan-Banadaky*, K. Rezayazdi, and M. Javan-Nikkhah, *University of Tehran, Karaj, Tehran, Iran*.

W345 **Influence of *Yucca schidigera* on in vitro gas production and fermentation of rumen fluid.**
K. D. Boden* and C. A. Loest, *New Mexico State University, Las Cruces*.

W346 **Effects of inclusion of bioethanol co-product on changes in the metabolic characteristics of the proteins in oat grain in ruminants.**
D. Damiran, M. Yari, L. Yang*, Z. Niu, and P. Yu, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.

W347 **Evaluation of forage indigestible NDF and relations with analytical parameters by principal component analysis.**
A. Gallo, S. Bruschi, G. Giuberti, M. Moschini, and F. Masoero*, *Università Cattolica del Sacro Cuore, Piacenza, Italy*.

W348 **Utilization of *Yucca schidigera* to alter hydrogen sulfide gas production from rumen fluid in vitro.**
J. Browne-Silva* and C. A. Loest, *New Mexico State University, Las Cruces*.

W349 **Effect of monensin and bismuth subsalicylate on hydrogen sulfide in continuous culture fermenters.**
M. Ruiz-Moreno*, E. Binversie, and M. D. Stern, *Department of Animal Science, University of Minnesota, St. Paul*.

W350 **Alteration of fasting heat production during fescue toxicosis in Holstein steers.**
A. F. Koontz*[1], A. P. Foote[1], D. H. Kim[1], L. P. Bush[2], J. L. Klotz[3], K. R. McLeod[1], and D. L. Harmon[1], [1]*Department of Animal and Food Sciences, University of Kentucky, Lexington*, [2]*Department of Plant and Soil Sciences, University of Kentucky, Lexington*, [3]*USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*.

W351 **Influence of maternal nutrition and prenatal adenovirus-VEGF gene therapy on fetal visceral tissues and crypt cell proliferation at d 130 of gestation.**
N. M. Chapel*[1], R. D. Yunusova[1], R. P. Aitken[2], J. S. Milne[2], D. J. Carr[2,3], P. P. Borowicz[1], A. L. David[3], J. M. Wallace[2], and J. S. Caton[1], [1]*Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo*, [2]*Rowett Institute of Nutrition and Health, University of Aberdeen, Scotland, UK*, [3]*Prenatal Cell and Gene Therapy Group, UCL Institute for Women's Health, University College London, UK*.

W352 **Effect of dried fermentation biomass on microbial fermentation in continuous culture.**
A. Carpenter*[1], E. Binversie[1], M. Ruiz-Moreno[1], J. Usry[2], I. Shinzato[2], and M. D. Stern[1], [1]*Department of Animal Science, University of Minnesota, St. Paul*, [2]*Ajinomoto Heartland Inc., Chicago, IL*.

W353 **Plasma metabolites and rumen ammonia concentration in steers fed high-forage diets and supplemented non-protein nitrogen.**
C. L. Cox*[1], R. H. Pritchard[1], B. P. Holland[1], and J. S. Jennings[2], [1]*South Dakota State University, Brookings*, [2]*Alltech Inc., Brookings, SD*.

W354 **Gossypol and total phenols of eleven varieties of whole cottonseed (*Gossypium hirsutum*) in the north of Argentina.**
M. García*[1], C. Berton[1], E. Casenave[1], M. Nazareno[1,2], and J. I. Arroquy[3], [1]*FAyA, UNSE, Santiago del Estero, Argentina*, [2]*INQUINOA-CONICET, Santiago del Estero, Argentina*, [3]*INTA - EEA Santiago del Estero, Santiago del Estero, Argentina*.

W355 **Influence of nitrogen fertilization and fibrolytic enzymes on digestibility and utilization of the nutrients of ryegrass (*Lolium multiflorum* var. Jumbo) hay fed to Holstein steers.**
J. A. Villarreal*, J. E. Camargo, E. G. Alvarez, J. Rodriguez, E. Vazquez, B. H. Gutierrez, M. F. Montano, and V. M. Gonzalez, *Universidad Autonoma de Baja California, Mexicali, BC, Mexico*.

Ruminant Nutrition
Other Ruminants

W356 **Diurnal pH of the first compartment stomach of alpacas fed alfalfa or grass hay supplemented with oats, corn, and corn/oats/barley.**
B. Harris*[1], T. F. Robinson[1], and N. I. Bott[2], [1]*Brigham Young University, Provo*, [2]*Bott Veterinary Services and Consulting, Elk Ridge, UT*.

W357 **Effect of castration on performance and carcass traits of crossbreed lamb on different time on feed.**
M. R. Mazon*[1], P. R. Leme[1], L. S. Oliveira[1], R. F. Carvalho[2], C. A. Zotti[1], L. E. Zanoni[1], D. M. C. Pesce[2], and S. da Luz e Silva[1], [1]*Faculdade de Zootecnia e Engenharia de Alimentos (FZEA/USP), Pirassununga, São Paulo, Brazil*, [2]*Pontifícia Universidade Católica de Minas Gerais (PUC Minas), Poços de Caldas, Minas Gerais, Brazil*.

W358 **Efficacy of novel feed products to reduce locoweed toxicity in wether lambs.**
F. A. Allataifeh*[1], C. A. Loest[1], M. N. Sawalhah[1], L. N. Tracey[1], J. Browne-Silva[1], J. B. Taylor[2], and D. M. Hallford[1], [1]*New Mexico State University, Las Cruces*, [2]*USDA-ARS, Dubois, ID*.

W359 **Swainsonine excretion, nutrient digestibility, and nitrogen retention of lambs fed alfalfa hay, locoweed, and novel feed additives.**
F. A. Allataifeh*, C. A. Loest, M. N. Sawalhah, F. Castillo, A. F. Cibils, and E. J. Scholljegerdes, *New Mexico State University, Las Cruces*.

W360 **The serosal-to-mucosal urea flux across the cervine ruminal epithelium is not affected by mucosal ammonia or phloretin.**
M. E. Walpole*[1], G. B. Penner[1], M. Woodburry[2], and T. Mutsvangwa[1], [1]*Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*, [2]*Department of Large Animal Clinical Services, University of Saskatchewan, Saskatoon, Saskatchewan, Canada*.

Ruminant Nutrition
Feed Additives

W361 **Effects of different feed additives on performance and carcass traits of feedlot cattle.**
C. A. Zotti, S. da Luz e Silva*, L. S. Martello, R. L. Meirelles, A. P. dos Santos Silva, P. L. Alvarez, P. H. Cancian, A. C. Ianni, L. E. Zanoni, and P. R. Leme, *Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo, Pirassununga, SP, Brazil*.

W362 **Effect of *Propionibacterium freudenreichii* supplementation in diets containing canola or flaxseed oils on in vitro methanogenesis and lipid biohydrogenation.**
S. Ding[1,2], S. J. Meale*[1,2], M. L. He[2], J. Long[3], A. Y. Alazzeh[2], T. A. McAllister[2], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*, [3]*Department of Animal Science, Northeast Agricultural University, Haerbin, Heilongjiang, China*.

W363 **Efficacy of an autolysed yeast product (Levabon Rumen) for ruminants versus live yeast and yeast culture in vitro.**
A. Ganner*[1], C. Stoiber[1], I. Dohnal[1], K. Deckardt[2], F. Klevenhusen[2], G. Schatzmayr[1], and Q. Zebeli[2], [1]*Biomin Research Center, Tulln, Lower Austria, Austria*, [2]*University of Veterinary Medicine, Vienna, Austria*.

W364 **Effect of monensin on methane emissions in dairy cattle can be explained by level of dry matter intake and fat content of the diet.**
J. A. D. R. N. Appuhamy*[1], A. B. Strathe[1], S. Jayasundara[2], C. Wagner-Riddle[2], J. Dijkstra[3], J. France[2], and E. Kebreab[1], [1]*University of California, Davis*, [2]*University of Guelph, Guelph, ON, Canada*, [3]*Wageningen University, Wageningen, the Netherlands*.

W365 **Effects of dietary supplementation of a yeast product on performance and morbidity of newly received beef heifers.**
C. H. Ponce*[1], J. S. Schutz[1], C. Elrod[2], U. Y. Anele[1], and M. L. Galyean[1], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Varied Industries Corp. Inc., Mason City, IA*.

W366 **Effect of oregano, ginger and thyme oils on in vitro rumen fermentation and methane emission.**
F. G. Vilela*, I. C. S. Bueno, A. S. Netto, T. S. Canaes, J. E. Freitas, B. C. Venturelli, and F. P. Rennó, *University of São Paulo, Pirassununga, SP, Brazil*.

W367 **Effect of some essential oils on rumen fermentation and methane emission in vitro.**
F. G. Vilela*, I. C. S. Bueno, A. S. Netto, J. E. Freitas Junior, B. C. Venturelli, T. S. Canaes, and F. P. Rennó, *University of São Paulo, Pirassununga, SP, Brazil*.

W368 **Effect of abomasal inorganic phosphorus infusion on phosphorus absorption in lactating dairy cows.**
X. Feng*, J. P. Jarrett, P. P. Ray, L. Karpinski, B. F. Willing, and K. F. Knowlton, *Virginia Polytechnic Institute and State University, Blacksburg*.

W369 **Effects of essential oils on in vitro ruminal fermentation and methane production of a mixed diet.**
I. Mateos[1], A. Díez[1], C. Saro[1], D. Yáñez-Ruiz[3], M. D. Carro[1,2], and M. J. Ranilla*[1,2], [1]*Dpto. Producción Animal, Universidad de León, Campus de Vegazana, León, Spain*, [2]*Instituto de Ganadería de montaña (CSIC-ULE), Finca Marzanas, Grulleros, León, Spain*, [3]*Estación Experimental del Zaidín (CSIC), Camino del Jueves, Armilla, Granada, Spain*.

W370 **Effect of feeding *Bacillus subtilis* and *Bacillus licheniformis* on dry matter and nutrient intake and digestibility by lambs fed a low quality roughage diet.**
E. Martínez-Loarte*, A. A. Rodríguez, and L. C. Solórzano, *University of Puerto Rico, Mayaguez, PR*.

W371 **Efficacy of live yeast *Saccharomyces cerevisiae* (strain Sc 47) and/or yeast cell wall on rumen fermentation and digestive utilization of corn silage-based diet in mid-lactating dairy cows.**
C. Bayourthe*[1,2], C. Julien[1,2], E. Auclair[3], and J. P. Marden[3], [1]*INRA, UMR1289 Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme TANDEM), Castanet Tolosan Cedex, France*, [2]*Université de Toulouse, INPT-ENSAT, INP-ENVT, UMR1289 TANDEM, Castanet Tolosan Cedex, France*, [3]*Lesaffre Feed Additives, Marquette Lez Lille, France*.

W372 **Effect of live yeast *Saccharomyces cerevisiae* (strain Sc 47) on nutrient digestion and ruminal fermentation in relation with rumen degradable protein content of the diet.**
C. Julien*[1,2], J. P. Marden[3], E. Auclair[3], R. Moncoulon[1,2], and C. Bayourthe[1,2], [1]*INRA, UMR1289, Tissus Animaux Nutrition Digestion Ecosystème et Métabolisme (TANDEM), Castanet Tolosan Cedex, France*, [2]*Université de Toulouse, INPT-ENSAT, INP-ENVT, UMR1289 TANDEM, Castanet Tolosan Cedex, France*, [3]*Lesaffre Feed Additives, Marquette Lez Lille, France*.

W373 **Effects of difructose anhydride III supplementation on serum calcium, dry matter intake and energy status in periparturient dairy cows.**
M. Teramura*[1], S. Wynn[2], M. Abe[2], S. Hisasue[2], T. Sato[1], M. Ohtani[1], C. Kawashima[2], and M. Hanada[2], [1]*Nippon Beet Sugar Manufacturing Co. Ltd., Obihiro, Hokkaido, Japan*, [2]*Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan*.

W374 **Effects of monensin and extracts of hops and *Yucca schidigera* applied alone or in combination on rumen fermentation in vitro.**
N. Narvaez, Y. Wang*, and T. A. McAllister, *AAFC, Lethbridge, AB, Canada*.

W375 **Concentrate level and combined use of ionophore and virginiamycin on feeding behavior of Nelore steers fed high grain diets.**
A. J. C. Nuñez*[1], V. V. Almeida[2], J. P. Schoonmaker[3], F. T. Mercado[1], F. Pinese[1], I. E. Borges[1], R. R. Casagrande[1], P. R. Leme[1], and J. C. M. Nogueira Filho[1], [1]*USP/FZEA, Pirassununga, SP, Brazil*, [2]*USP/ESALQ, Piracicaba, SP, Brazil*, [3]*Purdue University, West Lafayette, IN*.

W376 **The effect of different doses of exogenous enzymes preparation on in vitro gas production and ruminal fermentation activities of some fibrous feeds in cows.**
M. M. Y. Elghandour[1], C. G. Peñuelas-Rivas[1], M. Ronquillo[1], A. Z. M. Salem*[1], H. Gado[2], and N. E. Odongo[3], [1]*Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca, Estado de Mexico, Mexico*, [2]*Faculty of Agriculture, Ain Shams University, Cairo, Egypt*, [3]*Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, International Atomic Energy Agency, Vienna, Austria*.

W377 **Nutrient intake and ruminal parameters in response to *Bacillus subtilis* included on beef steer diet.**
B. Vieira*, R. Telles, V. Naves, I. Carvalho, and R. Reis, *Universidade Estadual Paulista*.

W378 **Effect of exogenous fibrolytic enzymes on *in vitro* rumen fermentation of corn silage.**
X. Chen, J. K. Wang, H. L. Mao, C. H. Wu, Y. M. Wu, and J. X. Liu*, *Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China*.

Small Ruminant
Reproduction, Parasites, and Environment

W379 **Effects of meat goat breed, sex, and conditions before and between measures on behavior in pens with barb wire and electric fence strands.**
Y. Tsukahara*, T. A. Gipson, G. D. Detweiler, T. Sahlu, and A. L. Goetsch, *Langston University, Langston, OK*.

W380 **GIS grid analysis of utilization of adjacent pastures by two herds of goats.**
T. A. Gipson*[1], S. P. Hart[1], and R. Heinemann[2], [1]*Langston University, Langston, OK*, [2]*Kiamichi Forestry Research Station, Oklahoma State University, Idabel*.

W381 **Ruminal methane emission by Boer and Spanish does supplemented with garlic.**
R. Puchala*, Z. Wang, A. L. Goetsch, and T. Sahlu, *Langston University, Langston, OK*.

W382 **Effects of Roscovitine on maturation and fertilization of ovine oocyte in vitro.**
S. Nasrollahi*, A. Z. Shahneh, S. Zeinoaldini, H. Kohram, and M. Poorhamdollah, *University of Tehran, Karaj, Tehran, Iran*.

W383 **Anthelmintic efficacy of medicinal herbs in goats infected with nematode parasites.**
R. Z. Zhong[1,2], Z. Wang*[2], D. Zhou[1], A. L. Goetsch[2], S. P. Hart[2], and T. Sahlu[2], [1]*Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, Changchun, China*, [2]*Langston University, Langston, OK*.

W384 **The effects of confinement and protein levels on the growth and parasitic loads of kids raised under mixed-species grazing system.**
S. Gebrelul, L. Gray*, R. Marshall, and Y. Ghebreiyessus, *Southern University Ag Center*.

W385 **The anthelmintic effect of Juniper and Tifton 85 on the infective larval stage of *Haemonchus contortus* in an in vitro system.**
S. A. Armstrong*[1], B. D. Lambert[1,2], T. R. Whitney[3], J. P. Muir[2], and A. McEwin[1], [1]*Tarleton State University, Stephenville, TX*, [2]*Texas Agrilife Research, Stephenville*, [3]*Texas Agrilife Research, San Angelo*.

W386 **Panicled tickclover, a native herbaceous legume, suppresses internal parasites without negative effects on kid performance.**
N. M. Cherry[1], M. Bullinger[3], B. D. Lambert*[1,3], J. P. Muir[1], and T. Whitney[2], [1]*Texas AgriLife Research, Stephenville*, [2]*Texas AgriLife Research, San Angelo*, [3]*Department of Animal Science, Tarleton State University, Stephenville, TX*.

W387 **Relative resistance to gastrointestinal nematode parasitic infection in sheep and goats.**
R. Merriott*, H. Ismail, G. Summers, and M. Worku, *North Carolina Agricultural and Technical State University, Greensboro*.

W388 **Effects of supplementing fat sources in pre-mating ewe diets on reproductive performance.**
Z. Mohammadi*[1], H. Mirzaei Alamouti[1], M. H. Shahir[1], H. Amanlo[1], and M. Yavari[2], [1]*University of Zanjan, Zanjan, Iran*, [2]*University of Hamedan, Hamedan, Iran*.

W389 **Effect of equine chorionic gonadotropin dosage and administration moment on reproductive performance in Pelibuey ewes.**
A. González-Reyna[1], J. Hernández-Meléndez[1], F. A. Lucero-Magaña[1], J. Cedillo-Monroy[2], and J. F. Vázquez-Armijo*[2], [1]*Universidad Autónoma de Tamaulipas, Facultad de Ingeniería y Ciencias, Cd. Victoria, Tamaulipas, Mexico*, [2]*Centro Universitario UAEM Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, México, Mexico*.

W390 **Blood metabolites and insulin concentrations during pregnancy in ewes carrying one to five fetuses and supplemented with propylene glycol.**
H. Honig*, A. Rozov, E. Gootwine, L. Lifshits, and U. Moallem, *Volcani Center, Bet Dagan, Israel*.

W391 **Withdrawn by author**

W392 **Bone morphogenetic protein 15 (BMP-15) in crossbred goat fertility.**
R. Hill, L. Canon, H. Ismail, R. Noble, and M. Worku*, *NC A&T State University, Greensboro*.

W393 **Induction of sexual activity of male goats during the reproductive resting season.**
O. Angel-Garcia[1], J. M. Guillen-Muñoz[1], M. A. De Santiago-Miramontes[1], P. A. Robles-Trillo[1], R. Rodriguez-Martinez[1], C. A. Meza-Herrera[2], F. G. Véliz[1], and G. Arellano-Rodriguez*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, Móxico*.

W394 **Induction to sexual activity of goats from the Mexican semidesert during the seasonal anestrous throughout the "female-to-female effect.".**
J. M. Guillen-Muñoz[1], O. Angel-Garcia[1], M. A. De Santiago-Miramontes[1], G. Arellano-Rodriguez[1], C. A. Meza-Herrera[2], M. Mellado[3], F. G. Véliz[1], and R. Rodriguez-Martinez*[1], [1]*Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México*, [2]*URUZA, Universidad Autónoma Chapingo, Gómez Palacio, Durango, México*, [3]*Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México*.

W395 **Influence of different GnRH treatments in an 11-d CIDR timed AI synchronization program in Santa Inês ewes.**
M. V. Biehl*[3], A. V. Pires[2], I. Susin[2], R. S. Gentil[2], E. M. Ferreira[2], F. M. Abreu[1], M. V. C. Ferraz Junior[3], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*.

W396 **Effect of AI method on pregnancy rate following an 11d-CIDR estrus synchronization program in Santa Ines ewes.**
M. V. Biehl*[3], A. V. Pires[2,3], I. Susin[2], R. S. Gentil[2], E. M. Ferreira[2], M. V. C. Ferraz Junior[3], D. D. Nepomuceno[2], F. M. Abreu[1], L. H. Cruppe[1], and M. L. Day[1], [1]*The Ohio State University, Columbus*, [2]*University of Sao Paulo, Piracicaba, SP, Brazil*, [3]*University of Sao Paulo, Pirassununga, SP, Brazil*.

Swine Species III

W397 **Industry productivity analysis—Sow farm traits.**
C. E. Hostetler*[1] and M. T. Knauer[2], [1]*National Pork Board, Des Moines, IA*, [2]*North Carolina State University, Raleigh*.

W398 **Welfare of Camborough sows in gestation crates or pens.**
W. Chaya*[1] and J. McGlone[2], [1]*Department of Animal and Food Sciences, Texas Tech University, Lubbock*, [2]*Pork Industry Institute, Department of Animal and Food Sciences, Texas Tech University, Lubbock*.

W399 **Relationships of birth weight and weaning weight on performance traits in purebred pigs.**
R. L. Cutshaw*[1], A. Schinckel[1], J. Fix[2], M. Brubaker[3], and M. Einstein[1], [1]*Purdue University, West Lafayette, IN*, [2]*National Swine Registry, West Lafayette, IN*, [3]*Whiteshire Hamroc LLC, Albion, IN*.

W400 **Length of productive life and lifetime production of Landrace, Yorkshire and crossbred sows raised under Thai tropical conditions.**
S. Koonawootrittriron[1], U. Nopibool[1], M. A. Elzo*[2], and T. Suwanasopee[1], [1]*Kasetsart University, Bangkok, Thailand*, [2]*University of Florida, Gainesville*.

W401 **In utero heat stress alters postnatal body composition parameters in growing pigs.**
R. L. Boddicker*[1], N. J. Boddicker[1], J. N. Rhoades[2], S. Pearce[1], J. Johnson[1], M. C. Lucy[2], T. J. Safranski[2], N. K. Gabler[1], J. T. Selsby[1], J. Patience[1], R. P. Rhoads[3], L. H. Baumgard[1], and J. W. Ross[1], [1]*Iowa State University, Ames*, [2]*University of Missouri, Columbia*, [3]*Virginia Polytechnic Institute and State University, Blacksburg*.

W402 **Implementing a total traceability system for the pig chain based on electronic ear tags and molecular markers.**
P. Grassi[1], G. Caja*[1], J. H. Mocket[1], A. Costa[1], J. Soler[2], M. Gispert[2], J. Tibau[2], M. A. Rojas-Olivares[1], and A. Sánchez[1], [1]*Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*, [2]*Institut de Recerca i Tecnologia Agroalimentàries, Monells, Girona, Spain*.

SYMPOSIA AND ORAL SESSIONS

Alpharma/Beef Species Joint Symposium
Redefining the Replacement Heifer Paradigm
Chair: Matt Hersom, University of Florida
Sponsors: Alpharma Animal Health and Pfizer Animal Health
222AB

10:30 AM **Introduction**
M. Hersom, *University of Florida*.

10:35 AM 602 **Pubertal issues for beef replacement heifers.**
C. L. Gasser*, *Southern Utah University, Cedar City*.

11:10 AM 603 **Development systems for replacement beef heifers.**
R. N. Funston*, *University of Nebraska, West Central Research and Extension Center, North Platte*.

11:45 AM 604 **Interactions of feed efficiency with beef heifer reproductive development.**
R. D. Randel*[1] and T. H. Welsh[2], [1]*Texas AgriLife Research, Overton*, [2]*Texas AgriLife Research, College Station*.

12:20 PM 605 **Enterprise level implications of heifer development.**
R. L. Endecott*[1], A. J. Roberts[2], and J. T. Mulliniks[3], [1]*Department of Animal and Range Sciences, Montana State University, Miles City*, [2]*USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT*, [3]*Department of Animal and Range Sciences, New Mexico State University, Las Cruces*.

Breeding and Genetics
Beef Cattle Breeding II—Applied genomics
Chair: Richard Tait, Iowa State University
225AB

10:30 AM 606 **Genomic technologies to increase production of Certified Angus Beef (CAB).**
J. D. Nkrumah*[1], P. Boddhireddy[1], M. Kelly[1], S. L. Northcutt[2], M. McCully[3], K. Anderson[1], J. Rumph[1], W. Herring[1], J. Osterstock[1], and S. DeNise[1], [1]*Pfizer Animal Genetics, Kalamazoo, MI*, [2]*Angus Genetics Inc., St Joseph, MO*, [3]*Certified Angus Beef, Wooster, OH*.

10:45 AM 607 **Genomic selection for dry matter intake using a combined European and Australian reference population.**
Y. de Haas*[1], J. E. Pryce[3], M. P. L. Calus[1], E. Wall[2], M. P. Coffey[2], H. D. Daetwyler[3], B. J. Hayes[3], and R. F. Veerkamp[1], [1]*Animal Breeding and Genomics Centre of Wageningen UR Livestock Research, Wageningen, the Netherlands*, [2]*Sustainable Livestock Systems Group at Scottish Agricultural College, Easter Bush, Midlothian, United Kingdom*, [3]*Biosciences Research Division of Department of Primary Industries Victoria, Bundoora, VIC 3083, Australia*.

11:00 AM 608 **Whole transcriptome sequencing of seven bovine tissues reveals gene expression profiles, splicing variants, and novel coding regions to improve genome annotation.**
J. Thomson*[1], U. Basu[1], Y. Meng[1], X. Liao[1], S. Moore[2], and P. Stothard[1], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*University of Queensland, Brisbane, Qld, Australia*.

11:15 AM 609 **An ensemble-based approach to imputation of high-density genotypes for genomic selection with application to purebred Angus cattle.**
C. Sun*[1], X.-L. Wu[1,2], K. A. Weigel[1], G. J. M. Rosa[2,3], S. Bauck[4], B. W. Woodward[4], R. D. Schnabel[5], J. F. Taylor[5], and D. Gianola[2,3], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*Department of Animal Sciences, University of Wisconsin, Madison*, [3]*Department of Biostatistics and Medical Informatics, University of Wisconsin, Madison*, [4]*Merial Limited, Duluth, GA*, [5]*Division of Animal Sciences, University of Missouri, Columbia*.

11:30 AM 610 **Gene expression analysis of longissimus and semitendinosus muscle from Angus and Charolais finishing steers.**
J. W. Buchanan*[1], A. K. Sexten[2], J. W. Dillwith[1], C. R. Krehbiel[1], and R. G. Mateescu[1], [1]*Oklahoma State University, Stillwater*, [2]*Kansas State University, Manhattan*.

11:45 AM 611 **Single nucleotide polymorphisms in the NPY, leptin, and IGF-1 genes in Angus cattle: I Effects on feed efficiency.**
A. I. Trujillo*, A. Casal, and P. Chilibroste, *Universidad de la Republica, Facultad de Agronomia, Montevideo, Montevideo, Uruguay*.

12:00 PM 612 **Single nucleotide polymorphisms in the NPY, Leptin, and IGF-1 genes in Angus cattle: II Effects on serum IGF-1 and leptin concentrations.**
A. I. Trujillo*, A. Casal, and P. Chilibroste, *Universidad de la Republica, Facultad de Agronomia*.

12:15 PM 613 **A distributed parallel computing approach for tuning Bayesian regression models for genomic selection with application to Angus cattle.**
X.-L. Wu*[1,2], H. Okut[2], C. Sun[1], G. J. M. Rosa[2], S. Bauck[3], B. W. Woodward[3], R. D. Schnabel[4], J. F. Taylor[4], and D. Giangola[1,2], [1]*Department of Dairy Science, University of Wisconsin, Madison*, [2]*Department of Animal Sciences, University of Wisconsin, Madison*, [3]*Merial Limited, Duluth, GA*, [4]*Division of Animal Sciences, University of Missouri, Columbia*.

12:30 PM 614 **Quantitative traits and genomics of heterosis in Wagyu × Angus F_1 progeny.**
L. F. Zhang[1,2], J. J. Michal[1], J. V. O'Fallon[1], Z. X. Pan[1,3], C. T. Gaskins[1], J. J. Reeves[1], J. R. Busboom[1], M. V. Dodson[1], R. W. Wright[1], and Z. Jiang*[1], [1]*Department of Animal Sciences, Washington State University, Pullman*, [2]*College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*, [3]*College of Animal Sciences and Technology, Nanjing Agricultural University, Nanjing, Jiangsu, China*.

Companion Animals
Chair: Jill Cline, K9Crazy Consulting
Sponsor: ASAS Foundation
127C

10:30 AM 615 **ASAS Early Career Achievement Award: Use of genomic biology to study companion animal microbiota.**
K. S. Swanson*, *University of Illinois, Department of Animal Science, Urbana*.

11:00 AM 616 **Pheromones and interomones that change heart rate and behavior of anxious dogs.**
G. Thompson* and J. J. McGlone, *Texas Tech University, Lubbock*.

11:15 AM 617 **Genome-wide linkage scan for loci associated with canine hypoadrenocorticism.**
A. M. Oberbauer* and J. M. Belanger, *University of California-Davis, Davis*.

11:30 AM 618 **Effects of dietary macronutrient composition on postprandial endocrine response in domestic cats.**
P. Deng*[1], T. K. Ridge[2], T. K. Graves[2], J. K. Spears[4], and K. S. Swanson[1,3], [1]*Department of Animal Sciences, University of Illinois, Urbana*, [2]*Department of Veterinary Clinical Medicine, University of Illinois, Urbana*, [3]*Division of Nutritional Sciences, University of Illinois, Urbana*, [4]*Nestlé Purina PetCare, St. Louis, MO*.

11:45 AM 619 **Digestibility of day-old, whole ground, extruded, and canned chicken-based diets in African wildcats.**
K. R. Kerr*[1], C. L. Morris[3], S. L. Burke[3], L. M. Garner[1], and K. S. Swanson[1,2], [1]*Division of Nutritional Sciences, University of Illinois, Urbana*, [2]*Department of Animal Sciences, University of Illinois, Urbana*, [3]*Henry Doorly Zoo, Omaha, NE*.

12:00 PM 620 **Dietary protein:carbohydrate ratio alters kitten fecal microbiota as analyzed by 454 pyrosequencing.**
S. Hooda*[1], B. M. Vester Boler[1], K. R. Kerr[1], S. E. Dowd[2], and K. S. Swanson[1], [1]*University of Illinois, Department of Animal Sciences, Urbana*, [2]*MR DNA Molecular Research LP, Shallowater, TX*.

12:15 PM 621 **Influence of indigestible starch content in dry expanded diets on stool characteristics of dogs differing in body size.**
R. Goudez*[1,2], M. Weber[2], L. Martin[1], V. Leray[1], V. Biourge[2], H. Dumon[1], and P. Nguyen[1], [1]*LUNAM University, Oniris, National College of Veterinary Medecine, Food and Science and Engineering, Nutrition and Endocrinology Unit, Nantes, France*, [2]*Royal Canin Research Center, Aimargues, France*.

12:30 PM 622 **Influence of fresh citrus pulp and apple pomace on the digestibility of nutrients in dogs.**
S. Brambillasca*, C. Deluca, A. Britos, and C. Cajarville, *Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay*.

Dairy Foods
Microbiology and Chemistry
Chair: Young Park, Fort Valley State University
122AB

10:30 AM 623 **Impact of NaCl substitution with KCl on cell-wall extract and cell-free supernatant proteinase activities of *Lactobacillus delbrueckii* ssp. *bulgaricus* and *Streptococcus thermophilus* and *Lactobacillus acidophilus* and *Lactobacillus casei* at different pH and salt levels.**
M. M. Ayyash[1], F. Sherkat[2], and N. P. Shah*[1,3], [1]*Victoria University, Melbourne, Vic, Australia*, [2]*RMIT University, Melbourne, Vic, Australia*, [3]*The University of Hong Kong, Pokfulam, Hong Kong*.

10:45 AM 624 **Survival of microencapsulated probiotic *Lactobacillus paracasei* LBC-1e during manufacture of Mozzarella cheese and simulated gastric digestion.**
F. Ortakci*, J. R. Broadbent, W. R. McManus, and D. J. McMahon, *Western Dairy Center Department of Nutrition, Dietetics, and Food Science, Utah State University, Logan*.

11:00 AM 625 **Characterization of *Lactobacillus* sp. GF103 as potential probiotics in vitro.**
X. L. Dong[1], Q. Y. Diao*[1], N. F. Zhang[1], Y. Tu[1], M. Zhou[1,2], L. H. Zhao[1], and X. H. Gao[1], [1]*Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China*, [2]*College of Animal Science Xinjiang Agricultural University, Urumqi, China*.

11:15 AM 626 **Microbial safety assessment of Juustoleipa cheese manufacture.**
B. Ganesan*, D. Irish, and C. Brothersen, *Western Dairy Center, Utah State University, Logan*.

11:30 AM 627 **Viability of probiotic bacteria and yeasts in traditional and commercial kefir following frozen storage.**
K. V. O'Brien*, C. A. Boeneke, K. J. Aryana, and W. Prinyawiwatkul, *Louisiana State University, Baton Rouge*.

11:45 AM 628 **Probing the foaming characteristics of milk proteins.**
J. A. Stankey*[1] and J. A. Lucey[1,2], [1]*University of Wisconsin-Madison, Department of Food Science, Madison*, [2]*Wisconsin Center for Dairy Research, Madison*.

12:00 PM 629 **The influence of Bactoscan total bacteria counting (TBC) and preliminary incubation (PI) counting on subsequent infrared milk component results.**
K. L. Wojciechowski and D. M. Barbano*, *Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY.*

12:15 PM 630 **Protective action of serum amyloid A3 against *Salmonella* Dublin infection.**
A. Domènech*[1], A. ArÍs[1], A. Bach[1,2], and A. Serrano[1], [1]*Institut de Recerca i Tecnologia Agroalimentària (IRTA), Caldes de Montbui, Barcelona, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*.

Dairy Foods
Physico-Chemical Properties
Chair: Tonya Schoenfuss, University of Minnesota
122C

10:30 AM 631 **Development of whey protein concentrate incorporated dietetic kulfi.**
H. G. Ramachandra Rao*[1] and A. Giri[2], [1]*Dairy Science College, Bangalore, Karnataka, India*, [2]*National Dairy Research Institute, Karnal, Haryana, India*.

10:45 AM 632 **Application of ultrasound spectroscopy to monitor lactose crystallization.**
J. K. Amamcharla*[1], L. E. Metzger[1], and R. Tweedie[2], [1]*Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings*, [2]*Industrial Tomography Systems plc, Manchester, UK*.

11:00 AM 633 **Heat induced aggregation of whey proteins as influenced by shear, pH, and protein concentration.**
M. Dissanayake, L. Ramchandran, and T. Vasiljevic*, *Advanced Food Systems Faculty Research Unit, School of Biomedical and Health Sciences and Institute for Sustainability and Innovation, Victoria University, Werribee Campus, VIC, Australia*.

11:15 AM 634 **Effect of pH and protein concentration on denaturation kinetics of whey proteins.**
M. Dissanayake, L. Ramchandran, and T. Vasiljevic*, *Advanced Food Systems Faculty Research Unit, School of Biomedical and Health Sciences and Institute for Sustainability and Innovation, Victoria University, Werribee Campus, VIC, Australia*.

11:30 AM 635 **Comparison of heat stability of bovine milk subjected to UHT and in-container sterilisation.**
B. Chen*, F. Ren, A. Grandison, and M. Lewis, *University of Reading, Reading, UK*.

11:45 AM 636 **Investigating the influence of phospholipids on the viability of *Streptococcus thermophilus* and *Bifidobacterium lactis*.**
B. Chinnasamy* and S. Clark, *Food Science and Human Nutrition, Iowa State University, Ames*.

12:00 PM 637 **Elucidating the role of α_{s2}-casein in the superior functionality of acid gels prepared from high-pressure-treated milks compared with heat-treated milks.**
H. Patel*[1], P. Salunke[3], L. Creamer[2], and H. Singh[2], [1]*Fonterra Research Centre, Palmerston North, New Zealand*, [2]*Riddet Institute, Massey University, Palmerston North, New Zealand*, [3]*South Dakota State University, Brookings, SD*.

12:15 PM 638 **Coagulation properties of the casein micelle by combination of ultrafiltration and dilfiltration measured using rheology and diffusing wave spectroscopy.**
J. G. Luo*[1,2], E. Kristo[1], and M. Corredig[1], [1]*Department of Food Science, University of Guelph, Guelph, ON, Canada*, [2]*Gay Lea Foods Co-operative Ltd., Guelph, ON, Canada*.

12:30 PM 639 **Composition and physical properties of dairy products in the UK.**
B. Chen*, A. Grandison, and M. Lewis, *Univerisity of Reading, Reading, UK*.

Extension Education II
Chair: Jeff Keown, University of Nebraska-Lincoln
128AB

10:30 AM 640 **Assessing a team-based educational program designed to build communication skills for practicing dairy veterinarians.**
G. M. Schuenemann*[1], D. J. Klingborg[2], D. A. Moore[3], and J. D. Workman[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*School of Veterinary Medicine, University of California, Davis*, [3]*Department of Veterinary Clinical Sciences, Washington State University, Pullman*.

10:45 AM 641 **Assessing a team-based educational program on nutrition and reproductive management for small dairy producers.**
G. M. Schuenemann*[1], W. P. Weiss[2], and J. D. Workman[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Animal Sciences, The Ohio State University, Wooster*.

11:00 AM 642 **I. Interactive index to identify and rank risk factors affecting reproductive performance of lactating dairy cows under field conditions.**
S. Bas*[1], P. Federico[2], and G. M. Schuenemann[1], [1]*Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*, [2]*Department of Mathematics, Computer Science, and Physics, Capital University, Columbus, OH*.

11:15 AM 643 **Using real-time futures market simulation to teach dairy risk management.**
M. E. Sowerby* and J. J. VanSickle, *University of Florida, Gainesville*.

11:30 AM 644 **A decision support tool for investment analysis of new dairy housing facility construction.**
R. A. Black* and J. M. Bewley, *University of Kentucky, Lexington*.

11:45 AM 645 **Quantifying the effect of an extension programme (InCalf) on the reproduction performance of New Zealand dairy herds using a randomized controlled study.**
T. S. Brownlie*[1,2], J. M. Morton[3], C. Heuer[2], and S. McDougall[1], [1]*Cognosco, Anexa Animal Health, Morrinsville, New Zealand*, [2]*Epicentre, Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand*, [3]*Jemora Pty Ltd., Geelong, Victoria, Australia*.

12:00 PM 646 **Stochastic simulation of the impact of commodity price variation on mastitis costs.**
D. Liang*[1], M. M. Schutz[2], and J. M. Bewley[1], [1]*University of Kentucky, Lexington*, [2]*Purdue University, West Lafayette, IN*.

12:15 PM 647 **A model: The Alabama Coalition for Farm Animal Care and Well-Being–A unified approach to animal care and well-being.**
R. Owen*, L. W. Greene, W. F. Owsley, and D. Wolfe, *Auburn University, Auburn, AL*.

Food Safety
Advances in Food Safety
Chair: Susan Duckett, Clemson University
223

10:30 AM 648 **Antimicrobial use in preweaned calves: Effects on fecal *E. coli* resistance.**
D. A. Moore*, D. Barone, A. C. B. Berge, T. E. Besser, and W. M. Sischo, *Washington State University*.

10:45 AM 649 **Effect of pre-slaughter stressors on intestinal microbial populations of pigs.**
M. H. Rostagno*[1], B. T. Richert[2], and D. C. Lay[1], [1]*USDA-ARS, Livestock Behavior Research Unit, West Lafayette, IN*, [2]*Purdue University, Department of Animal Sciences, West Lafayette, IN*.

11:00 AM 650 **Screening of antimicrobials and salt substitutes for use in reduced sodium dairy products.**
T. Taylor*, A. Lathrop, N. Farkye, and A. Lammert, *California Polytechnic State University, San Luis Obispo*.

11:15 AM 651 **Control of native microbiota in skim milk by pulsed electric fields and tangential-flow microfiltration versus high-temperature short-time pasteurization.**
D. Khanal*, A. Chugh, M. Walkling-Ribeiro, L. Duizer, and M. W. Griffiths, *University of Guelph, Guelph, Ontario, Canada*.

Horse Species Symposium
Equine-Assisted Therapies: Incorporation into university programs
Chair: Carrie Hammer, North Dakota State University
121C

10:30 AM **Introduction**

10:35 AM 652 **Partnering therapeutic riding and higher education.**
C. Burke*, *University of New Hampshire, Durham*.

11:05 AM 653 **Equine-assisted therapy and recovery from combat trauma.**
J. M. Kouba*[1], B. L. McDaniel[1], E. A. Eason[2], and K. G. Odde[1], [1]*Kansas State University, Manhattan*, [2]*Fort Riley, KS*.

11:35 AM 654 **Research in equine-assisted activities and therapies.**
E. L. Berg*, *North Dakota State University, Fargo*.

12:05 PM **Discussion**

Meat Science and Muscle Biology Symposium
Pre-slaughter Stress, Postmortem Glycolysis, and Biophysical Mechanisms of Meat Quality
Chair: Min Du, Washington State University
Sponsor: EAAP
226ABC

10:30 AM 655 **Preslaughter stress and pork meat quality.**
L. Faucitano*, *Agriculture & Agri-Food Canada, Sherbrooke, Canada*.

11:05 AM 656 **EAAP-ASAS Speaker Exchange Presentation: Muscle glycogen and postmortem glycolysis.**
E. Poulanne*, *Department of Food and Environmental Sciences, University of Helsinki, Helsinki, Finland*.

11:40 AM 870 **AMP-activated protein kinase as a controller of postmortem glycolysis?**
T. L. Scheffler, E. M. England, and D. E. Gerrard*, *Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg*.

12:15 PM 657 **Biophysical approaches for improving our understanding of meat quality.**
A. Karlsson* and D. Brüggemann, *University of Copenhagen, Frederiksberg C, Denmark*.

Nonruminant Nutrition
Amino Acids and Energy
Chair: Brian Kerr, USDA-ARS
Sponsor: Ajinomoto Heartland Inc.
129AB

10:30 AM 658 **Influence of net energy content of the diet on productive performance and carcass merit of gilts, boars, and immunocastrated males fed barley-based diets and slaughtered at 119 kg of BW.**
L. Cámara[1], M. Romero[1], M. P. Serrano[1], J. L. Sánchez[2], E. Alcázar[2], and G. G. Mateos*[1], [1]*Departamento de Producción Animal, Universidad Politécnica de Madrid, Madrid, Spain*, [2]*SAT Vallehermoso S.A, Ciudad Real, Spain*.

10:45 AM 659 **Influence of increasing levels of lysine in the diet on growth performance and carcass quality of entire and inmunocastrated females.**
L. Cámara[1], M. P. Serrano[1], A. López[2], J. M. González[2], F. Ortin[2], and G. G. Mateos*[1], [1]*Departamento de Producción Animal, UPM, Ciudad Universitaria, Madrid, Spain*, [2]*Piensos Jiménez S. L., Lorca, Murcia, Spain*.

11:00 AM 660 **The standardized ileal digestible (SID) tryptophan to lysine ratio to optimize performance of 25 to 50 kg pigs fed low protein diets.**
G. Zhang[1], S. Qiao[1], and J. K. Htoo*[2], [1]*China Agricultural University, Beijing, China*, [2]*Evonik Industries AG, Hanau, Germany*.

11:15 AM 661 **Changes in amino acid accretion during immune activation of the chicken immune system by *E. coli*.**
V. J. Iseri* and K. C. Klasing, *University of California, Davis*.

11:30 AM 662 **Restricting sulfur amino acid intake in immune system stimulated pigs decreases plasma protein and albumin synthesis.**
N. Litvak* and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

11:45 AM 663 **Response to dietary l-glutamine supplementation in weaned piglets: A serum metabolomic comparison and hepatic metabolic regulation analysis.**
Y. Xiao*, A. Chen, T. Wu, L. Yang, and Q. Hong, *College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*.

12:00 PM 664 **Effects of dietary glutamine supplementation on nutrient absorption and activity of enzymes involved in glutamine metabolism and energy production in the jejunum of weaned piglets.**
A. Chen*, Y. Xiao, T. W. Wu, Q. Hong, and C. Yang, *College of Animal Sciences, Zhejiang University, Hangzhou, Zhejiang, China*.

12:15 PM 665 **Effects of oral supplementation with glutamate or combination of glutamate and N-carbamylglutamate on intestinal mucosa morphology in weanling piglets.**
W. Xin[1,2], P. Zhangzhi[1,2], L. Zhiqiang[1], L. Tiejun[1], and Y. Yulong*[1,2], [1]*Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, Chinese Academy of Sciences, China*, [2]*State Key Laboratory of Food Science and Technology and College of Life Science and Food Engineering, Nanchang University, China*.

Physiology and Endocrinology I
Chair: Russ Hovey, University of California-Davis
123

10:30 AM 666 **Gram-negative or gram-positive toxin-induced subclinical mastitis affects preovulatory follicle responses in cows.**
O. Furman[1], G. Leitner[2], Z. Roth[1], Y. Lavon[3], S. Jacoby[4], and D. Wolfenson*[1], [1]*Faculty of Agriculture, Food and Environment, the Hebrew University, Rehovot, Israel*, [2]*The Veterinary Institute, Bet Dagan, Israel*, [3]*Israel Cattle Breeders Association, Caesarea, Israel*, [4]*Institute of Animal Science, Agricultural Research Organization, Bet-Dagan, Israel*.

10:45 AM 667 **Blood constituents in milk due to changed blood-milk barrier integrity during mastitis.**
O. Wellnitz, M. Lehmann, and R. M. Bruckmaier*, *Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland*.

11:00 AM 668 **Characterizing the temporal and seasonal pattern of plasma lipopolysaccharide binding protein during the transition period.**
A. Nayeri*[1], N. C. Upah[1], M. V. Sanz-Fernandez[1], E. Sucu[1,2], A. L. Gabler[1], R. L. Boddicker[1], D. B. Snider[1], J. M. Defrain[3], and L. H. Baumgard[1], [1]*Iowa State University, Ames*, [2]*Uludag University, Turkey*, [3]*Zinpro Corporation, Eden Prairie, MN*.

11:15 AM 669 **Effect of dry period length on rumen adaptation in dairy cows.**
R. M. A. Goselink*[1], J. T. Schonewille[2], G. van Duinkerken[1], and A. T. M. van Knegsel[3], [1]*Wageningen UR Livestock Research, Lelystad, the Netherlands*, [2]*Utrecht University, Utrecht, the Netherlands*, [3]*Wageningen University, Wageningen, the Netherlands*.

11:30 AM 670 **Sodium salicylate administration during the first 7 days of lactation has effects that extend through the entire lactation in dairy cattle.**
J. K. Farney*[1], L. K. Mamedova[1], J. F. Coetzee[2], J. E. Minton[1], and B. J. Bradford[1], [1]*Kansas State University, Manhattan*, [2]*Iowa State University, Ames*.

11:45 AM 671 **Responses to a nutritional challenge in early and late lactation.**
N. C. Friggens*[1,2], C. Duvaux-Ponter[1,2], J. Tessier[1,2], and P. Schmidely[1,2], [1]*INRA UMR 791 Modélisation Systémique Appliquée aux Ruminants, Paris, France*, [2]*AgroParisTech UMR 791 Modélisation Systémique Appliquée aux Ruminants, Paris, France*.

12:00 PM 672 **Supranutritional levels of antioxidants maintains feed intake and reduces heat stress in sheep.**
S. Chauhan[1,2], P. Celi[3], B. Leury[2], and F. Dunshea*[2], [1]*CSK, HP Agriculture University, Palampur, Kangra, India*, [2]*The University of Melbourne, Parkville, Victoria, Australia*, [3]*The University of Sydney, Sydney, Australia*.

Ruminant Nutrition
Beef: Feed Additives
Chair: Allan Chestnut, Provimi
131ABC

10:30 AM 673 **Feeding monensin or functional oils in high corn finishing diets for Nellore bulls.**
L. J. Chagas, R. S. Marques, C. Sitta, C. Guerra, V. N. Gouvea, J. Souza, F. Batistel, and F. A. P. Santos*, *University of São Paulo, Piracicaba, SP, Brazil*.

10:45 AM 674 **Feeding monensin, functional oils and combination of feed additives in high by-products finishing diets for Nellore bulls.**
L. J. Chagas, R. S. Marques, C. Sitta, C. Guerra, V. N. Gouvea, J. Souza, F. Batistel, and F. A. P. Santos*, *University of São Paulo, Piracicaba, SP, Brazil*.

11:00 AM 675 **Effect of Rumensin, Micotil, and Component TE-G with Tylan on health, growth performance, and carcass merit of stocker cattle grazing wheat pasture.**
E. D. Sharman*[1], P. A. Lancaster[1], B. D. Wallis[1], G. W. Horn[1], and G. D. Hufstedler[2], [1]*Oklahoma Agricultural Experiment Station, Stillwater*, [2]*Elanco Animal Health, Guthrie, OK*.

11:15 AM 676 **Effects of dietary *Aspergillus oryzae* extract containing α-amylase activity on feedlot performance and carcass characteristics of finishing beef cattle fed steam-flaked corn-based diets.**
K. A. White*[1], J. J. Wagner[2], T. E. Engle[1], D. R. Woerner[1], T. C. Bryant[3], J. S. Jennings[4], and K. M. Brennan[4], [1]*Animal Sciences Department, Colorado State University, Fort Collins*, [2]*Southeast Colorado Research Center, Colorado State University, Lamar*, [3]*JBS Five Rivers Cattle Feeding, Greeley, CO*, [4]*Alltech Inc., Nicholasville, KY*.

11:30 AM 677 **Accelerated step-up regimens for feedlot heifers following oral dosing with Lactipro (*Megasphaera elsdenii*).**
K. A. Miller*, C. L. Van Bibber-Krueger, and J. S. Drouillard, *Kansas State University, Manhattan*.

11:45 AM 678 **Oral dosing with Lactipro (*Megasphaera elsdenii*) decreases roughage required for feedlot finishing.**
K. A. Miller*, C. L. Van Bibber-Krueger, and J. S. Drouillard, *Kansas State University, Manhattan*.

12:00 PM 679 **Effect of Optaflexx level on growth performance and carcass characteristics of feedlot steers.**
J. W. Homm*, G. J. Vogel, N. A. Pyatt, and R. L. Botts, *Elanco Animal Health, Greenfield, IN*.

12:15 PM 680 **Effect of an injectable amino acid solution in calves fed barley-based rations with supplemental lysine and methionine during a 65-d preconditioning program.**
C. F. O'Neill*[1], C. L. Maxwell[1], S. L. Parr[2], M. L. May[2], E. J. Behlke[2], C. W. Booker[2], G. K. Jim[2], C. R. Krehbiel[1], and L. O. Burciaga-Robles[2], [1]*Department of Animal Science, Oklahoma State University, Stillwater*, [2]*Feedlot Health Management Services Ltd., Okotoks, Alberta, Canada*.

Small Ruminant
Production and Reproduction
Chair: Govind Kannan, Fort Valley State University
222C

10:30 AM 681 **Fabricated carcass measurements in terminally sired F_1 lambs.**
M. R. Mousel*[1], D. R. Notter[2], T. D. Leeds[3], H. N. Zerby[4], S. J. Moeller[4], and G. S. Lewis[1], [1]*USDA, ARS, U.S. Sheep Experiment Station, Dubois, ID*, [2]*Virginia Tech, Blacksburg*, [3]*USDA, ARS, National Center for Cool and Cold Water Aquaculture, Kearneysville, WV*, [4]*The Ohio State University, Columbus*.

10:45 AM 682 **Awassi sheep productivity in central Anatolia region of Turkey.**
H. Üstüner* and M. Ogan, *Uludag University, Faculty of Veterinary Medicine, Department of Animal Science, Bursa, Turkey*.

11:00 AM 683 **Effect of lithium chloride for mid-term conditioned aversion to olive tree leaves in penned and grazing goats.**
C. L. Manuelian, E. Albanell, M. Rovai*, A. A. K. Salama, and G. Caja, *Grup de Recerca en Remugants (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

11:15 AM 684 **Milk production losses in early lactating dairy goats under heat stress.**
S. Hamzaoui, A. A. K. Salama*, G. Caja, E. Albanell, C. Flores, and X. Such, *Group de Recerca en Remugants (G2R), Universitat Autònoma de Barcelona, Bellaterra, barcelona, Spain*.

11:30 AM 685 **Long-term effects of intrauterine rivalry on the reproductive performances of co-twin ewe-lambs.**
J. Casellas and G. Caja*, *Grup de Recerca en Remugants (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*.

11:45 AM 686 **Fixed-time laparoscopic AI with frozen-thawed goat semen in progesterone and PMSG supplemented Cosynch protocol.**
Z. Nur[1], B. Üstüner*[1], Y. Nak[2], S. Alcay[1], Y. Yaman[3], and H. Sagirkaya[1], [1]*Department of Reproduction and Artificial Insemination, Uludag University, Faculty of Veterinary Medicine, Gorukle, Bursa, Turkey*, [2]*Department of Obstetrics & Gynecology, Uludag University, Faculty of Veterinary Medicine, Gorukle, Bursa, Turkey*, [3]*Marmara Animal Breeding Research Institute, Bandirma, Balikesir, Turkey*.

12:00 PM 687 **Pregnancy diagnosis in sheep using fecal near infrared reflectance spectroscopy.**
M. A. D. Bomfim*[1,2], S. Prince[2], J. Angerer[2], O. Faco[1], J. de L. Gonçalves[3,1], R. T. De Souza[3,1], F. E. P. Fernandes[1], A. M. F. Fernandes[3,1], and M. Ponciano[1], [1]*Embrapa Goats and Sheep, Sobral, Ceara, Brazil*, [2]*Blackland Research Center/ Texas A&M University, Temple*, [3]*State University of Acarau Valley, Sobral, Ceara, Brazil*.

12:15 PM 688 **Ability to culture of cells from postmortem goat skin tissues stored at room temperature for different time intervals.**
M. Singh* and X. Ma, *Fort Valley State University, Fort Valley, GA*.

Swine Species Symposium
Recent Advances in Swine Genomics
Chair: Jeffrey Vallet, USMARC
Sponsors: Archer Daniels Midland and JBS United
125AB

10:30 AM 689 **Pigs, feed intake, and genes.**
J. P. Cassady*[1], S. Jiao[1], C. Maltecca[1], K. A. Gray[2], and J. W. Holl[1], [1]*North Carolina State University, Raleigh*, [2]*Smithfield Premium Genetics*.

11:05 AM 690 **A review of swine genome-wide association studies at USMARC.**
J. F. Schneider*, *USDA, ARS, USMARC, Clay Center, NE*.

11:40 AM **Break**

11:55 AM 691 **The genetic basis of host response to experimental infection with the PRRS virus in pigs.**
J. Dekkers*[1], N. Boddicker[1], E. Waide[1], J. K. Lunney[2], R. R. R. Rowland[3], D. J. Garrick[1], and J. Reecy[1], [1]*Iowa State University, Ames*, [2]*USDA, ARS, BARC, Beltsville, MD*, [3]*Kansas State University, Manhattan*.

Teaching/Undergraduate and Graduate Education Symposium
Giving Employers What They Want—How ready is today's animal science graduate?
Chair: Donald Mulvaney, Auburn University
Sponsor: Elanco Animal Health
227AB

10:30 AM **Introduction**

10:40 AM 692 **The animal sciences curriculum of 2025.**
M. A. Wattiaux*, *University of Wisconsin-Madison, Madison*.

11:00 AM 693 **Creating animal scientists from scratch–Meeting industry needs with today's students.**
J. A. Sterle*, *Iowa State University, Ames*.

11:20 AM **Break**

11:35 AM 694 **Critical skills and characteristics expected by employers of animal science graduates and strategies for equipping them.**
S. Robinson*[1] and D. Mulvaney[2], [1]*Oklahoma State University, Stillwater*, [2]*Auburn University, Auburn, AL*.

11:55 AM 695 **Custom tailoring class information to each student for their eventual use in the workplace.**
T. G. Rozell*, *Kansas State University, Manhattan*.

12:15 PM **Panel Discussion**

Contemporary and Emerging Issues
Chair: Mulumebet Worku, NC A&T State University
Sponsor: Elanco Animal Health
223

11:45 AM 696 **Web forums as a method for engagement on contentious issues in dairying: Should pain relief be provided during disbudding and dehorning of dairy calves?**
D. M. Weary*, C. S. Schuppli, and M. A. G. von Keyserlingk, *University of British Columbia, Vancouver, BC, Canada*.

12:00 PM 697 **Preliminary assessment of graded *Garcinia kola* seed meal on the performance, hematology and serum enzymes of broilers.**
O. A. Ogunwole, E. A. Iyayi, M. D. Olumide*, O. Arinola, and O. A. Adebiyi, *University of Ibadan, Ibadan, Oyo State, Nigeria*.

12:15 PM 698 **Water usage and discharge volumes on New Mexico dairy operations.**
T. M. Vander Dussen*[1], G. R. Hagevoort[1], J. Lazarus[2], E. Naumburg[2], R. Ganta[2], and K. D. Casey[3], [1]*Agricultural Science Center at Clovis, New Mexico State University, Clovis*, [2]*Glorieta Geoscience Inc., Santa Fe, NM*, [3]*Texas AgriLife Research, Texas A&M System, Amarillo*.

Beef Species
Chair: Matt Hersom, University of Florida
222C

2:00 PM 699 **Evaluation of selecting half-sibling beef cows to increase calf crop uniformity.**
B. Nichols*, R. Reuter, and B. Cook, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

2:15 PM 700 **Performance, residual feed intake, and carcass quality of progeny from Red Angus sires divergent for maintenance energy EPD.**
C. M. Welch*[1], J. K. Ahola[3], G. K. Murdoch[1], D. H. Crews[3], J. I. Szasz[1], L. C. Davis[1], M. E. Doumit[1], W. J. Price[2], L. D. Keenan[4], and R. A. Hill[1], [1]*Department of Animal and Veterinary Sciences, University of Idaho, Moscow*, [2]*Statistical Programs, University of Idaho, Moscow*, [3]*Department of Animal Sciences, Colorado State University, Fort Collins*, [4]*Red Angus Association of America, Denton, TX*.

2:30 PM 701 **The effect of limiting feed intake on concentration of proteins associated with energy balance in the pregnant beef cow.**
K. M. Wood*[1], C. J. Fitzsimmons[2,3], S. P. Miller[1], B. W. McBride[1], and K. C. Swanson[4], [1]*Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada*, [2]*Agriculture and Agri-Food Canada, Edmonton, AB, Canada*, [3]*Dept. of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*, [4]*Dept. of Animal Sciences, North Dakota State University, Fargo*.

2:45 PM 702 **Heifers with low antral follicle counts have low birth weights and produce progeny with low birth weights.**
A. F. Summers*[1], R. A. Cushman[2], and A. S. Cupp[1], [1]*University of Nebraska- Lincoln, Lincoln*, [2]*USDA-ARS U.S. Meat Animal Research Center, Clay Center, NE*.

3:00 PM 703 **Prediction of HCW of individual steers from partial live weight collected with an in-pen weighing device.**
R. Reuter* and C. Moffet, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

3:15 PM 704 **Effect of various feeding regimens pre-shipment on shrink and subsequent weight recovery in feeder calves.**
J. Starnes* and D. Rankins, *Auburn University, Auburn, AL*.

3:30 PM 705 **Comparison of different feed additives for backgrounding of weaned beef calves.**
A. Imler[1], M. Hersom*[1], T. Thrift[1], J. Yelich[1], and J. Arthington[2], [1]*University of Florida, Department of Animal Sciences, Gainesville*, [2]*Range Cattle Research and Education Center, Ona, FL*.

3:45 PM 706 **Comparison of different feeding levels of a recycled-product supplemented to weaned beef calves.**
M. Hersom*, T. Thrift, and J. Yelich, *University of Florida, Department of Animal Sciences, Gainesville*.

Breeding and Genetics
Dairy Cattle Breeding III—Genetic evaluation
Chair: Christian Maltecca, North Carolina State University
225AB

2:00 PM 707 **Extension of Bayesian procedures to integrate and to blend multiple external information into genetic evaluations.**
J. Vandenplas*[1,2] and N. Gengler[1], [1]*University of Liege - Gembloux Agro-Bio Tech, Gembloux, Belgium*, [2]*National Fund for Scientific Research, Brussels, Belgium*.

2:15 PM 708 **Are in-line measurements of somatic cell counts equally or more useful for genetic evaluations as those from DHI?**
L. P. Sørensen* and P. Løvendahl, *Department of Molecular Biology and Genetics, Center for Quantitative Genetics and Genomics, Aarhus University, Tjele, Denmark*.

2:30 PM 709 **Prediction of residual feed intake for first and second lactation dairy cows.**
G. H. Manafiazar*, T. McFadden, E. Okine, L. Goonewardene, and Z. Wang, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*.

2:45 PM 710 **Random forest approach for SNP effects of residual feed intake in dairy cattle.**
C. Yao*[1], D. M. Spurlock[2], K. A. Weigel[1], L. E. Armentano[1], C. D. Page[1], and M. J. VandeHaar[3], [1]*University of Wisconsin, Madison*, [2]*Iowa State University, Ames*, [3]*Michigan State University, East Lansing*.

3:00 PM 711 **Use of milk fatty acids to substitute for body condition score in breeding purposes.**
C. Bastin*[1], D. P. Berry[2], H. Soyeurt[1,3], and N. Gengler[1], [1]*University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium*, [2]*Teagasc Moorepark Dairy Production Research Center, Fermoy, Co. Cork, Ireland*, [3]*National Fund for Scientific Research (F.R.S.-FNRS), Brussels, Belgium*.

3:15 PM 712 **Genetics of the mid-infrared prediction of lactoferrin content in milk for Holstein first-parity cows.**
C. Bastin*[1], G. Leclercq[1], H. Soyeurt[1,2], and N. Gengler[1], [1]*University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium*, [2]*National Fund for Scientific Research (F.R.S.-FNRS), Brussels, Belgium*.

3:30 PM 713 **Genetic parameters for methane indicator traits based on milk fatty acids in cows.**
P. B. Kandel*[1], A. Vanlierde[2], F. Dehareng[2], E. Froidmont[2], N. Gengler[1], and H. Soyeurt[1,3], [1]*Animal Science Unit, Gembloux Agro Biotech, University of Liège, Passage des Deportes, Gembloux, Belgium*, [2]*Valorisation of Agricultural Products Department, Walloon Agricultural Research Centre, Gembloux, Belgium*, [3]*National Fund for Scientific Research (FNRS), Brussels, Belgium*.

3:45 PM 714 **Comparison of daughter performance of New Zealand and North American sires in US herds.**
H. D. Norman*[1], J. R. Wright[1], R. L. Powell[1], T. J. Lawlor[2], and C. W. Wolfe[3], [1]*Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD*, [2]*Holstein Association USA Inc., Brattleboro, VT*, [3]*American Jersey Cattle Association, Reynoldsville, OH*.

4:00 PM 715 **Genotype environment interaction of Holstein-Friesian dairy cattle in eastern Libya.**
S. A. M. Bozrayda*, R. S. Gargoum, and I. A. S. Al-Drussi, *Department of Animal Production, University of Benghazi, Benghazi, Libya*.

4:15 PM 716 **Casein and fatty acid content in milk of crossbred dairy cows under grazing conditions.**
V. Artegoitia*[1,2], M. Carriquiry[1], A. Meikle[2], J. Dutur[1], L. Olazabal[3], J. Bermudez[1], A. Torre[3], and P. Chilibroste[1], [1]*Facultad de Agronomía, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [2]*Facultad de Veterinaria, Universidad de la República Oriental del Uruguay, Montevideo, Uruguay*, [3]*Laboratorio Tecnológico del Uruguay, Montevideo, Uruguay*.

4:30 PM 717 **Effect of the milk recording time on the genetic parameters of milk production and mid-infrared milk components in Luxembourg dairy cattle.**
V. M.-R. Arnould*[1,2], H. Soyeurt[2,3], and N. Gengler[2,3], [1]*CONVIS s.c., Ettelbruck, Luxembourg*, [2]*University of Liège, Gembloux Agro Bio-Tech, Animal Science Unit, Gembloux Belgium*, [3]*National Fund for Scientific Research (F.N.R.S.), Brussels, Belgium*.

4:45 PM 718 **Integration of experimental designs and analytical approaches to co-ordinate efficiency of global efforts to optimize environmental and genetic effects on reproductive performance of dairy cattle.**
E. Block[1], B. Bradford[2], W. M. Chalupa[3], I. J. Lean*[4], S. LeBlanc[5], M. C. Lucy[6], J. McNamara[7], J. Morton[8], A. R. Rabiee[4], J. E. P. Santos[9], W. W. Thatcher[9], M. Van Amburgh[10], and M. J. VandeHaar[11], [1]*Church & Dwight Co, Princeton, NJ*, [2]*Kansas State University, Manhattan*, [3]*University of Pennsylvania, Kennett Square*, [4]*SBScibus, Camden, New South Wales, Australia*, [5]*Population Medicine Ontario Veterinary College University of Guelph, Guelph, ON Canada*, [6]*Division of Animal Sciences, University of Missouri, Columbia*, [7]*Department of Animal Sciences, Washington State University, Pullman*, [8]*Jemora Pty Ltd., Geelong Victoria, Australia*, [9]*Department of Animal Sciences, University of Florida, Gainesville*, [10]*Department of Animal Sciences, Cornell University, Ithaca, NY*, [11]*Department of Animal Sciences, Michigan State University, E. Lansing*.

Breeding and Genetics
Small Ruminants, Poultry, and Nontraditional Species
Chair: Ron Lewis, Virginia Tech
123

2:00 PM 719 **Associations between candidate gene polymorphisms and milk production traits in Alpine goats farmed in Italy.**
P. Crepaldi[1], E. Mlanesi[1], B. Coizet[1], L. Nicoloso[1], P. Fresi[2], S. Murru[2], R. Steri[3], and N. P. P. Macciotta*[3], [1]*Università di Milano, Milan, Italy*, [2]*ASSONAPA, Rome, Italy*, [3]*Università di Sassari, Sassari, Italy*.

2:15 PM 720 **Single nucleotide polymorphisms identified in polygenic traits through the use of the Ovine SNP50 BeadChip.**
R. R. Cockrum*[1], N. K. Pickering[2], R. M. Anderson[2], D. L. Hyndman[2], M. J. Bixley[2], K. G. Dodds[2], R. H. Stobart[1], J. C. McEwan[2], and K. M. Cammack[1], [1]*University of Wyoming, Laramie*, [2]*AgResearch Limited, Mosgiel, New Zealand*.

2:30 PM 721 **Genetic parameter estimates for birth weight in three Yemeni indigenous sheep breeds.**
S. Al-Shorepy*[1], M. Al-Karmah[1], and Ab. Albial[1], [1]*United Arab Emirates University, Al Ain, United Arab Emirates*, [2]*Sana'a University, Sana'a, Yemen*, [3]*Agricultural Research & Extension Authority, Sana'a, Yemen*.

2:45 PM 722 **Increased lean growth rate does not extend days to harvest in crossbred lambs.**
G. C. Márquez*[1], W. Haresign[2], M. H. Davies[3], D. R. Notter[1], R. Roehe[4], L. Bünger[4], G. Simm[4], and R. M. Lewis[1,4], [1]*Virginia Tech, Blacksburg*, [2]*Aberystwyth University, Aberystwyth, UK*, [3]*ADAS Rosemaund, Preston Wynne, UK*, [4]*Scottish Agricultural College, Edinburgh, UK*.

3:00 PM 723 **Evaluation of environmental factors affecting the speed of racing camels in the United Arab Emirates.**
S. Al-Shorepy*, S. Al Mansouri, and Z. Al Katheeri, *United Arab Emirates University, Al Ain, United Arab Emirates*.

3:15 PM 724 **Influence of genomic predictors on yearling sales price and total career earnings in Thoroughbred racehorses.**
C. R. Davis*[1,2], E. W. Hill[1,2], and A. G. Fahey[1], [1]*School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland*, [2]*Equinome Ltd., NovaUCD, Belfield Innovation Park, Belfield, Dublin 4, Ireland*.

3:30 PM 725 **Genetic variation study in Pakistani buffalo breeds using microsatellite markers.**
T. Hussain*[1,2], M. E. Babar[1], M. Imran[1], A. Nadeem[1], A. Ali[1], R. Saif[1], A. Wajid[1], M. De Donato[2,3], S. O. Peters[2], and I. G. Imumorin[2], [1]*Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, [2]*Dept. Animal Science, Cornell University, Ithaca, NY*, [3]*IIBCA, Universidad de Oriente, Cumana, Venezuela*.

3:45 PM 726 **Analysis of egg production using a random regression model with genomic relationships in layer chickens.**
A. Wolc*[1,2], J. Arango[3], P. Settar[3], J. E. Fulton[3], N. P. O'Sullivan[3], R. Preisinger[4], D. Habier[2], R. Fernando[2], D. J. Garrick[2], and J. C. M. Dekkers[2], [1]*Poznan University of Life Sciences, Poznan, Poland*, [2]*Iowa State University, Ames*, [3]*Hy-Line International, Dallas Center, IA*, [4]*Lohmann Tierzucht GmbH, Cuxhaven, Germany*.

Dairy Foods Symposium
Advances in Yogurt Manufacture and Product Functionalities
Chair: Randy Brandsma, Schreiber Foods
122AB

2:00 PM **Introduction**
R. Brandsma, *Schreiber Foods, Green Bay, WI*.

2:05 PM 727 **The impact of biopolymers on yogurt gelation and properties.**
J. A. Lucey*, *University of Wisconsin-Madison, Madison*.

2:35 PM 728 **Advancements in yoghurt process design and unit operations.**
L.-E. Nilsson*, *Tetra Pak, Lund, Sweden*.

3:25 PM **Break**

3:40 PM 729 **Impact of total solids, protein content, and protein source on the functionality of nonfat yogurt.**
L. E. Metzger* and K. N. Shah, *Midwest Dairy Foods Research center, South Dakota State University, Brookings*.

4:00 PM 730 **Advancements in starter technology and functional benefits in yogurt.**
DA Romero*[1], C. Fremaux[2], P. Fourcassie[2], S. Huppert[3], and P. Steele[1], [1]*DuPont/Danisco, Madison, WI*, [2]*DuPont/Danisco, Dangé-St.Romain, France*, [3]*DuPont/Danisco, Paris, France*.

4:40 PM 731 **Fine tuning the structure of yogurt by changing the milk properties.**
M. Corredig*, *University of Guelph, Guelph, Ontario, Canada*.

Extension Education Symposium
Does Extension Have a Future in Today's Agriculture?
Chair: Jeff Keown, University of Nebraska-Lincoln
128AB

2:00 PM **Industry's view of extension.**
J. A. Patterson*, *National Cattlemen's Beef Association*.

2:40 PM **USDA's vision for extension.**
S. I. Smith*, *Animal Production Systems, NIFA*.

3:20 PM 732 **National Science Foundation outreach: A non-traditional model.**
S. Ellis*, *Clemson University, Clemson, SC*.

4:00 PM **Making sense of it all.**
J. F. Keown*, *University of Nebraska, Lincoln*.

Graduate Student Symposium
From Hypothesis to Manuscript: How to conduct valuable and efficient research
Chair: Cassandra Jones, Iowa State University
Sponsors: ASAS Foundation and Monsanto Co.
227AB

2:00 PM **Introduction and ASAS Graduate Student Events at JAM.**
C. Jones and A. Mays.

2:15 PM 733 **Developing the research question, hypothesis, design, and protocol.**
D. E. Bauman*[1] and R. J. Collier[2], [1]*Cornell University, Ithaca, NY*, [2]*University of Arizona, Tucson*.

2:50 PM 734 **Data collection and integrity.**
G. Hartnell*, *Monsanto Company, St. Louis*.

3:25 PM **Break**

3:35 PM 735 **I'm an animal scientist, why do I need statistics?**
D. K. Aaron*, *University of Kentucky, Lexington*.

4:10 PM 736 **It is not a scientific contribution until it is published: Tips from a journal editor.**
S. A. Zinn*, *University of Connecticut, Storrs*.

4:45 PM **Final Questions and ADSA Graduate Student Events at JAM.**
K. Proudfoot and R. Campbell.

Growth and Development Symposium
Participation of Adult Tissue-Restricted Stem Cells in Livestock Growth and Development
Chair: Sally Johnson, University of Florida
Sponsors: Elanco Animal Health, Monsanto Co., and Pancosma
222AB

2:00 PM 737 **Regulation of skeletal muscle satellite cell chemotaxis.**
R. E. Allen* and X. Liu, *University of Arizona, Tucson*.

2:35 PM 738 **Potentials of male germline stem cells to influence the efficiency of beef cattle production.**
J. M. Oatley*, *College of Veterinary Medicine, Washington State University, Pullman*.

3:10 PM 739 **Tenocytic potential of equine umbilical cord derived stem cells.**
S. A. Reed*[1] and S. E. Johnson[2], [1]*University of Connecticut, Storrs*, [2]*University of Florida, Gainesville*.

3:45 PM 740 **Development, characterization and use of a porcine epiblast-derived liver stem cell line: ARS-PICM-19.**
T. J. Caperna*, W. M. Garrett, and N. C. Talbot, *USDA/ARS, Beltsville, MD*.

4:20 PM 741 **Mammary stem cells: Novel markers and novel approaches to increase lactation efficiency.**
A. V. Capuco*[1], R. K. Choudhary[1,2], C. M. Evock-Clover[1], and K. M. Daniels[3], [1]*Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD*, [2]*Department of Animal and Food Sciences, University of Kentucky, Lexington*, [3]*Department of Animal Sciences, The Ohio State University, Wooster*.

Lactation Biology Symposium
The Long-Term Impact of Epigenetics and Maternal Influence on the Neonate Through Milk-Borne Factors and Nutrient Status
Chair: Michael Van Amburgh, Cornell University
Sponsor: EAAP
125AB

2:00 PM **Introductions.**
M. Van Amburgh, *Cornell University*.

2:05 PM 742 **EAAP-ASAS Speaker Exchange Presentation: Role of colostrum and colostrum components on glucose metabolism in neonatal calves.**
H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*.

2:40 PM 743 **Nutrition of the dam affects mammary gland development and milk production in the offspring.**
P. Kenyon*, A. Paten, E. Garnett, H. Blair, S. Pain, C. Jenkinson, S. Peterson, and N. Martin, *Massey University, Palmerston North, New Zealand*.

3:15 PM 744 **Lactational programming of infant behavioral and somatic development.**
K. Hinde*[1,2], A. Foster[2], and J. P. Capitanio[2,3], [1]*Human Evolutionary Biology, Harvard University, Cambridge, MA*, [2]*Brain, Mind, and Behavior Unit, California National Primate Research Center, University of California-Davis*, [3]*Department of Psychology, University of California-Davis, Davis*.

3:50 PM 745 **Lactocrine signaling and postnatal developmental programming.**
F. F. Bartol*[1], D. J. Miller[1], A. A. Wiley[1], J. C. Chen[2], A-L. Frankshun[2], M. E. Camp[2], K. M. Ferio[2], and C. A. Bagnell[2], [1]*Auburn University, Auburn, AL*, [2]*Rutgers, The State University of New Jersey, New Brunswick, NJ.*

4:25 PM 746 **The effect of nutrient intake from milk or milk replacer of pre-weaned dairy calves on lactation milk yield as adults.**
F. Soberon* and M. E. Van Amburgh, *Cornell University, Ithaca, NY*.

Meat Science and Muscle Biology
Chair: Brian Bowker, USDA-ARS
Sponsor: EAAP
223

2:00 PM 747 **EAAP-ASAS Speaker Exchange Presentation: Impact of stunning and carcass chilling on pork quality and post-mortem proteolysis.**
G. Petca and G. Bee*, *Agroscope Liebefeld Posieux, Research Station ALP, Posieux, Switzerland*.

2:15 PM 748 **Effects of cannabinoid receptor 1 on muscle fiber types and muscle oxidative metabolism.**
E. Xu*[1,2], L. N. Zhu[1], T. Wu[1], Y. N. Huang[1], and Y. Z. Wang[1], [1]*Institute of Feed Science, Zhejiang University, The Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Zhejiang Provincial Laboratory of Feed and Animal Nutrition, Hangzhou, Zhejiang, China*, [2]*College of Animal Science, Guiyang, Guizhou, China*.

2:30 PM 749 **Fatty acid profile of meat from young bulls fed different levels of crude glycerin.**
M. M. Ladeira*, J. R. R. Carvalho, M. L. Chizzotti, E. M. Ramos, P. D. Teixeira, M. C. L. Alves, P. E. P. Barros, and O. R. Machado Neto, *Federal University of Lavras, Lavras, MG, Brazil*.

2:45 PM 750 **Effect of vitamin E inclusion on *trans*-18:1 isomers in subcutaneous fat of steers fed a high-barley grain diet.**
C. Mapiye*[1], M. E. R. Dugan[1], M. Juárez[1], J. A. Basarab[2], V. S. Baron[1], T. Turner[1], X. Yang[1], N. Aldai[3], and J. L. Aalhus[1], [1]*Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada*, [2]*Alberta Agriculture and Rural Development, Lacombe Research Centre, Lacombe, Alberta, Canada*, [3]*University of Basque Country, Vitoria-Gasteiz, Spain*.

3:00 PM 751 **Influence of gender on meat quality and skatole in the fat of lambs.**
N. M. Schreurs*, *Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand.*

3:15 PM 752 **Comparison of skinning versus scalding and singeing: Effect on temperature, pH and meat quality in goats.**
A. B. Omojola*[1], E. S. Apata[2], O. O. Olusola[1], and A. B. Omotoso[1], [1]*University of Ibadan, Ibadan, Oyo State, Nigeria*, [2]*Olabisi Onabanjo University, Ago-Iwoye, Ogun, Nigeria*.

3:30 PM 753 **Organoleptic and shelf life of displayed Red Sokoto buck meat as influenced by post-slaughter processing methods.**
A. B. Omojola*[1], E. S. Apata[2], O. O. Olusola[1], and A. B. Omotosho[1], [1]*University of Ibadan, Ibadan, Oyo State, Nigeria*, [2]*Olabisi Onabanjo University, Ago-Iwoye, Ogun, Nigeria*.

Nonruminant Nutrition
Feed Additives
Chair: Joshua Jendza, University of Minnesota
129AB

2:00 PM 754 **Effect of different probiotics on diarrhea frequency and body weight of weaned piglets challenged with *Salmonella typhimurium*.**
L. J. Parazzi*, E. R. Afonso, S. M. M. K. Martins, T. A. Santo, A. F. C. Andrade, J. Diniz-Magalhães, and A. S. Moretti, *USP/FMVZ, Pirassununga, SP, Brazil*.

2:15 PM 755 **Effect of mannan oligosaccharides on performance of weanling piglets.**
F. C. Horta, L. J. Parazzi*, S. M. M. K. Martins, O. H. O. Eckhardt, T. A. D. Santo, A. F. C. Andrade, J. Diniz-Magalhães, and A. S. Moretti, *USP/FMVZ, Pirassununga, SP, Brazil*.

2:30 PM 756 **Multi-NSP enzymes improved growth performance and gut health in nursery pigs fed corn or rye and barley diets.**
J. Zhao*, F. Yan, D. L. Lichtenstein, A. Lawhorn, and M. Vazquez-Anon, *Novus International Inc., St Charles, MO*.

2:45 PM 757 **Effect of increasing concentrations of a novel β-glucanase to a constant β-mannanase in corn-soybean meal-corn distillers dried grains with solubles (DDGS) diets on grower pig performance.**
Z. Rambo[1], J. Ferrel*[2], D. Anderson[2], D. Kelly[1], and B. Richert[1], [1]*Purdue University, West Lafayette, IN*, [2]*ChemGen, Gaithersburg, MD*.

3:00 PM 758 **Evaluating nutritive value of pepper *Capsicum annuum* and garlic *Allium sativum* on performance, egg trait and serum parameters of old layers.**
F. A. Aderemi*, O. M. Alabi, and O. M. Ayoola, *Bowen University, Iwo State, Nigeria*.

3:15 PM **Break**

3:30 PM 759 **Defatted algae biomass may replace one-third of soybean meal in diets for laying hens.**
X. J. Leng, K. N. Hsu, R. E. Austic, and X. L. Lei*, *Cornell University, Ithaca, NY*.

3:45 PM 760 **Effects of various replacements of corn and soy by defatted microalgal meal on growth performance and biochemical status of weanling pigs.**
K. K. Lum*, K. R. Roneker, and X. G. Lei, *Cornell University, Ithaca, NY*.

4:00 PM 761 **Effects of a blend of essential oils on post-weaning growth performance of piglets.**
A. Aufy*[1], T. Steiner[1], and Y. Jung[2], [1]*Biomin Holding GmbH, Herzogenburg, Austria*, [2]*Jung P&C Institute, Yeongdoek-Dong, Giheung-Gu, Yongin-City, Gyeonggi-Do, Korea*.

4:15 PM 762 **Effects of a dietary antioxidant blend on growth and plasma markers of oxidative status in pigs fed an oxidative stress diet.**
T. Lu*[1], A. F. Harper[1], J. Zhao[2], R. A. Dalloul[1], and M. J. Estienne[1], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Novus International Inc., St. Charles, MO*.

4:30 PM 763 **Effects of eubiotics (VevoVitall, Crina Piglets, Cylactin ME10) supplementation on growth performance, nutrient digestibility, fecal noxious gas emission, and fecal microbial shedding in weanling pigs.**
Z. F. Zhang*[1], S. M. Hong[1], A. V. Rolando[2], D. H. Yoo[3], and I. H. Kim[1], [1]*Department of Animal Resource & Science, Dankook University, Cheonan, Choongnam, South Korea*, [2]*DSM Nutritional Products Philippines Inc., Bonifacio Global City, Taguig, Philippines*, [3]*All The Best Ltd., Seoul, South Korea*.

Physiology and Endocrinology
Nutritional Physiology
Chair: Kevin Harvatine, Pennsylvania State University
127C

2:00 PM 764 **mRNA expression of a novel adipokine (pigment epithelium-derived factor, PEDF) in various tissues from dairy cows receiving supplements with or without conjugated linoleic acids (CLA).**
B. Saremi*[1], S. Winand[1], S. Dänicke[2], J. Pappritz[2], D. von Soosten[2], H. Sauerwein[1], and M. Mielenz[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

2:15 PM 765 **Effects of long-term hyperketonemia on metabolism and performance in lactating dairy cows.**
M. Zarrin*[1,2], L. De Matteis[1,3], M. C. M. B. Vernay[1], O. Wellnitz[1], H. A. van Dorland[1], and R. M. Bruckmaier[1], [1]*Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland*, [2]*Department of Animal Science, Yasouj University, Yasouj, Iran*, [3]*Istituto di Zootecnica, Università Cattolica S, Cuore, Piacenza, Italy*.

2:30 PM 766 **Tissue-dependent expression of G-protein couple receptor (GPR) 40, 41, 43, 109A mRNA in early lactation dairy cows treated with conjugated linoleic acids (CLA) and long-chain fatty acids (LCFA).**
B. Saremi*[1], H. Sauerwein[1], D. von Soosten[2], S. Dänicke[2], and M. Mielenz[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

2:45 PM 767 **Is calcitonin involved in hypocalcemia of periparturient cows?**
E. M. Rodríguez*[1], A. Bach[1,2], M. Devant[1], and A. Arís[1], [1]*Department of Ruminant Production, IRTA, Caldes de Montbui, Spain*, [2]*ICREA, Barcelona, Spain*.

3:00 PM 768 **Reproductive performance of Ossimi rams fed biologically treated rations.**
E. B. Abdalla*[1], F. R. Abed El-Aziz[2], H. M. Gado[1], A. E. Hassan[2], and M. S. Ziada[3], [1]*Ain Shams University, Cairo, Egypt*, [2]*Anim. Prod. Res. Inst., Agric. Res. Center, Ministry of Agric., Giza, Egypt*, [3]*Anim. Reprod. Res. Inst., Agric. Res. Center, Ministry of Agric, Giza, Egypt*.

3:15 PM 769 **The effect of yeast cell wall supplementation on the metabolic responses of crossbred heifers to endotoxin challenge.**
N. C. Burdick*[1], T. R. Young[2], J. A. Carroll[1], J. R. Corley[3], R. J. Rathmann[2], and B. J. Johnson[2], [1]*USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*, [2]*Texas Tech University, Department of Animal and Food Sciences, Lubbock*, [3]*Lesaffre Feed Additives, Milwaukee, WI.*

3:30 PM 770 **Effect of sward condition on metabolic endocrinology during the early postpartum period in primiparous grazing dairy cows and its association with productive and reproductive performance.**
A. Meikle*[1], L. Adrien[1], D. Mattiauda[2], and P. Chilibroste[2], [1]*Faculty of Veterinary, Montevideo, Uruguay*, [2]*Faculty of Agronomy, Montevideo, Uruguay*.

3:45 PM 771 **Association of biomarkers of stress, inflammation, and negative energy balance with milk yield and reproductive performance in Holstein dairy cows.**
J. M. Huzzey*[1], D. V. Nydam[2], R. J. Grant[3], and T. R. Overton[1], [1]*Department of Animal Science, Cornell University, Ithaca, NY*, [2]*Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY*, [3]*W. H. Miner Agricultural Research Institute, Chazy, NY*.

4:00 PM 772 **Serum amyloid A3 (SAA3) mRNA in liver and adipose tissue of dairy cows supplemented with or without conjugated linoleic acids (CLA): A whole lactation cycle study.**
B. Saremi*[1], S. Winand[1], J. Pappritz[2], S. Dänicke[2], M. Mielenz[1], M. M. Rahman[1], and H. Sauerwein[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

4:15 PM 773 **Responses of mammary gland metabolism to long-term manipulated plasma concentrations of insulin and glucose in lactating dairy cows.**
J. J. Gross*, M. C. M. B. Vernay, L. Kreipe, O. Wellnitz, H. A. van Dorland, and R. M. Bruckmaier, *Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland*.

4:30 PM 774 **Tumor necrosis factor-α (TNF-α) mRNA expression in early lactation in different tissues of dairy cows with a focus on different fat depots.**
B. Saremi*[1], H. Sauerwein[1], D. von Soosten[2], S. Dänicke[2], and M. Mielenz[1], [1]*Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany*, [2]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany*.

Production, Management and the Environment
Environmental Quality
Chairs: Jude Capper, Washington State University, and Shane Gadberry, University of Arkansas
121C

2:00 PM 775 **ADSA/EAAP Award Presentation: Evaluation of a feeding strategy to reduce greenhouse gas emissions from milk production: The level of analysis matters.**
C. E. Van Middelaar*[1], P. B. M. Berentsen[2], J. Dijkstra[3], and I. J. M. De Boer[1], [1]*Animal Production Systems Group, Wageningen University, Wageningen, the Netherlands*, [2]*Business Economics Group, Wageningen University, Wageningen, the Netherlands*, [3]*Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands*.

2:30 PM 776 **Are high production, low GHG emission dairy farms in New Zealand possible?**
R. E. Vibart*[1], T. White[2], D. Smeaton[3], S. Dennis[4], R. Dynes[4], and M. Brown[1], [1]*AgResearch Limited, Grasslands Research Centre, Palmerston North, New Zealand*, [2]*AgResearch Limited, Ruakura Research Centre, Hamilton, New Zealand*, [3]*DairyNZ, Hamilton, New Zealand*, [4]*AgResearch Limited, Lincoln Research Centre, Christchurch, New Zealand*.

2:45 PM 777 **Impact of animal density on predicted greenhouse gas emission from selected conventional, organic and grazing dairy farms in Wisconsin.**
M. Dutreuil*[1], V. E. Cabrera[1], R. Gildersleeve[2], C. A. Hardie[1], and M. Wattiaux[1], [1]*University of Wisconsin-Madison, Madison*, [2]*University of Wisconsin Extension, Dodgeville*.

3:00 PM 778 **Life-cycle assessment of greenhouse gas emissions from dairy production in eastern Canada: A case study.**
E. J. Mc Geough*, S. M. Little, H. H. Janzen, T. A. McAllister, S. M. McGinn, and K. A. Beauchemin, *Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada*.

3:15 PM 779 **Effects of saponin extracts, in the diet of Holstein steers or added directly to their manure, on gaseous emissions from that manure.**
W. Li* and W. Powers, *Michigan State University, East Lansing*.

3:30 PM 780 **Effect of manure source on ammonia emission on first day of application.**
F. Sun*[1], J. H. Harrison[1], E. Whitefield[1], P. Ndegwa[2], and H. S. Joo[2], [1]*Washington State University, Puyallup*, [2]*Washington State University, Pullman*.

3:45 PM 781 **Partitioning of solids, nitrogen, and phosphorus in solids and liquid fractions of anaerobically digested dairy effluent.**
J. H. Harrison*[1], E. Whitefield[1], and A. Werkhoven[2], [1]*Washington State University, Puyallup*, [2]*Werkhoven Dairy, Monroe, WA*.

4:00 PM 782 **Inoculant volume of a mixed culture of rumen microorganisms on rate and extent of methanogenesis from processed dairy excrement for biofuel production by anaerobic digestion.**
C. L. Ross*, K. C. Das, and M. A. Froetschel, *University of Georgia, Athens*.

4:15 PM 783 **Effects of inorganic versus organic copper on nitrous oxide reductase activity in peat soil.**
Q. Wang*, M. Burger, A. Castillo, W. Horwath, and F. Mitloehner, *University of California-Davis, Davis*.

4:30 PM 784 **Nutrient removal with harvest of soybean forage and soybean seed produced with and without irrigation of dilute swine manure lagoon effluent.**
A. F. Harper*, D. L. Holshouser, C. D. Teutsch, and M. J. Estienne, *Virginia Polytechnic Institute and State University, Blacksburg*.

4:45 PM 785 **Effect of fibrous diets and inclusion level on the chemical composition and odors from pig slurry.**
C. T. Mpendulo* and M. Chimonyo, *Animal and Poultry Science, College of Agriculture, Engineering and Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa*.

Ruminant Nutrition
Beef Co-Products
Chair: Allan Chestnut, Provimi
131ABC

2:00 PM 786 **Performance by feedlot cattle fed varying proportions and amounts of lime treated crop residues and distillers grains as substitutes for corn grain.**
A. L. Shreck*[1], C. J. Schneider[1], B. L. Nuttelman[1], D. B. Burken[1], G. E. Erickson[1], T. J. Klopfenstein[1], and M. J. Cecava[2], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Archer Daniels Midland, Decatur, IL*.

2:15 PM 787 **Comparing wet and dry distillers grains plus solubles for yearling finishing cattle.**
B. L. Nuttelman*, D. B. Burken, C. J. Schneider, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska-Lincoln, Lincoln*.

2:30 PM 788 **Performance of cattle fed diets based on blended by-product pellets varying in rumen available energy and protein content.**
M. G. Zenobi*[1], P. Yu[1], D. A. Christensen[1], P. G. Jefferson[1,2], H. A. Lardner[1,2], and J. J. McKinnon[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*Western Beef Development Centre, Humboldt, SK, Canada*.

2:45 PM 789 **Replacement of grazed forage and animal performance with distillers grains supplementation in a forage system.**
K. L. Gillespie*, T. J. Klopfenstein, B. L. Nuttelman, C. J. Schneider, J. D. Volesky, and G. E. Erickson, *University of Nebraska, Lincoln*.

3:00 PM 790 **Flint corn grain processing and increasing levels of citrus pulp in finishing diets for Nellore bulls.**
V. N. Gouvea[1], L. J. Chagas[1], J. Souza[1], F. Batistel[1], C. Sitta[1], P. R. B. Campanili[1], D. B. Galvani[2], and F. A. P. Santos*[1], [1]*University of São Paulo, Piracicaba, SP, Brazil*, [2]*EMBRAPA Goats and Sheep, Sobral, CE, Brazil*.

3:15 PM 791 **Evaluation of rumen metabolism and digestibility when treated crop residues are fed in cattle finishing diets.**
A. L. Shreck*[1], J. L. Harding[1], G. E. Erickson[1], T. J. Klopfenstein[1], and M. J. Cecava[2], [1]*University of Nebraska-Lincoln, Lincoln*, [2]*Archer Daniels Midland, Decatur, IL*.

3:30 PM 792 **Effects of alternate feeding of dried distillers grains plus solubles on performance and body composition in gestating forage-fed beef cows.**
S. I. Klein*, P. L. Steichen, A. Islas, R. S. Goulart, T. C. Gilbery, and C. R. Dahlen, *Department of Animal Sciences, North Dakota State University, Fargo*.

3:45 PM 793 **Dry-rolled or whole shell corn with or without wet corn gluten feed in receiving diets.**
A. V. Siverson*[1], S. P. Montgomery[2,1], B. E. Oleen[1], and D. A. Blasi[1], [1]*Kansas State University, Manhattan*, [2]*Corn Belt Livestock Services, Cedar Rapids, IA*.

4:00 PM 794 **Effect of dried distillers grains with solubles on enteric methane emissions and nitrogen excretion from finishing beef cattle.**
M. Hünerberg*[1,2], T. A. McAllister[2], K. A. Beauchemin[2], S. M. McGinn[2], O. M. Harstad[3], and E. K. Okine[1], [1]*University of Alberta, Edmonton, AB, Canada*, [2]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, [3]*Norwegian University of Life Sciences, Norway*.

4:15 PM 795 **Comparing the digestibility of wet and dry distillers grains plus solubles in cattle finishing diets.**
B. L. Nuttelman*, A. L. Shreck, J. L. Harding, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska-Lincoln, Lincoln*.

4:30 PM 796 **The effects of titrating corn-based dried distillers grains plus solubles with sorghum-based wet distillers grains plus solubles on yearling heifers feedlot performance and carcass characteristics.**
B. T. Johnson*, C. L. Maxwell, B. K. Wilson, J. J. Wagner, C. J. Richards, and C. R. Krehbiel, *Oklahoma State University Department of Animal Science, Stillwater*.

4:45 PM 797 **Effects of increasing levels of distillers dried grains on intake and digestibility of moderate quality fescue hay.**
W. W. Miller*, J. D. Kohler, and M. D. Hudson, *Missouri State University, Springfield*.

Ruminant Nutrition
Dairy Production IV
Chair: Alex Bach, IRTA
132ABC

2:00 PM 798 **Sampling behavior of dairy cattle: Effects of spatial variation in feed quality on movements at the feed bunk.**
J. M. Huzzey*, J. A. Fregonesi, M. A. G. von Keyserlingk, and D. M. Weary, *University of British Columbia, Animal Welfare Program, Vancouver, BC, Canada*.

2:15 PM 799 **Effect of precision feeding on performance, nutrient excretion, and feeding behavior of early lactation dairy cows.**
E. Maltz*[1,2], L. F. Barbosa[1], P. Bueno[1], L. Scagion[1], L. F. Greco[1], K. Kaniyamattam[1], A. de Vries[1], and J. E. P. Santos[1], [1]*University of Florida, Gainesville*, [2]*The Volcani Center, Bet Dagan, Israel*.

2:30 PM 800 **Concentrate levels and supplemental fat for grazing mid lactating cows.**
F. L. Macedo, S. F. Angolini, W. F. Angolini, C. T. dos Santos Dias, and F. A. P. Santos*, *University of São Paulo, Piracicaba, SP, Brazil*.

2:45 PM 801 **Dry matter intake and behavior patterns of dairy cows fed diets combining pasture and total mixed ration.**
A. Mendoza[1,2], C. Cajarville*[3], R. Colla[1], G. Gaudentti[1], M. E. Martín[1], and J. L. Repetto[1], [1]*Facultad de Veterinaria, Departamento de Bovinos, Montevideo, Uruguay*, [2]*Instituto Nacional de Investigación Agropecuaria, Colonia, Uruguay*, [3]*Facultad de Veterinaria, Departamento de Nutrición Animal, Montevideo, Uruguay*.

3:00 PM 802 **Supplemental fat for dairy calves fed accelerated milk replacer during mild cold stress.**
N. Litherland*[1], D. Lobao[1], R. LaBerge[1], W. Weich[1], Z. Sawall[1], J. Schefers[1], and A. Kertz[2], [1]*University of Minnesota, St Paul*, [2]*ANDHILL LLC, St, Louis, MO*.

3:15 PM 803 **What do preweaned and weaned calves need in the diet: A high fiber content or a forage source?**
M. Terré*[1], E. Pedrals[1], and A. Bach[2,1], [1]*Institut de Recerca i Tecnologia Agroalimentàries, Caldes de Montbui, Spain*, [2]*Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain*.

3:30 PM 804 **Fat and fatty acid sources affect growth and health of milk-fed calves.**
K. M. Esselburn*[1], K. M. Daniels[1], T. M. Hill[2], H. G. Bateman[2], J. M. Aldrich[2], and R. L. Schlotterbeck[2], [1]*Department of Animal Sciences, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster*, [2]*Nurture Research Center, Provimi North America, Brookville, OH*.

3:45 PM 805 **Fatty acid profile and global gene expression in liver of calves supplemented with linoleic acid.**
M. Garcia*[1], L. F. Greco[1], M. B. Rabaglino[1], A. L. Lock[2], W. W. Thatcher[1], J. E. P. Santos[1], and C. R. Staples[1], [1]*University of Florida, Gainesville*, [2]*Michigan State University, East Lansing*.

4:00 PM 806 **Use of tail skin temperature as a proxy for core body temperature in neonatal Holstein male calves.**
H. G. Bateman*, T. M. Hill, A. B. Chestnut, J. M. Aldrich, and R. L. Schlotterbeck, *Provimi North America, Brookville, OH*.

4:15 PM 807 **Body temperature of neonatal male Holstein calves is partially influenced by ambient temperature in the calf nursery.**
H. G. Bateman*, T. M. Hill, A. B. Chestnut, J. M. Aldrich, W. Hu, and R. L. Schlotterbeck, *Provimi North America, Brookville, OH*.

4:30 PM 808 **Jersey calf performance in response to high protein, high fat liquid feeds with varied fatty acid profiles.**
W. S. Bowen, V. A. Swank*, K. M. O'Diam, M. L. Eastridge, and K. M. Daniels, *Department of Animal Sciences, The Ohio State University, Columbus*.

4:45 PM 809 **Methods of reducing milk replacer to prepare dairy calves for weaning when large amounts of milk replacer have been fed.**
T. M. Hill*, H. G. Bateman, J. M. Aldrich, and R. L. Schlotterbeck, *Nurture Research Center, Provimi North America, Brookville, OH*.

WSASAS Symposium
Ruminant Stress: Implications on Health and Performance of Ruminants
Chair: Glenn Duff, Montana State University
Sponsor: Western Section ASAS
226ABC

2:00 PM **Welcome and Introductions.**
G. Duff, *Montana State University, Bozeman*.

2:05 PM 810 **Effects of environment on fetal programming in ruminant livestock.**
S. W. Limesand*, D. T. Yates, A. R. Macko, and X. Chen, *University of Arizona, Tucson*.

2:35 PM 811 **An evaluation of cold stress on ruminant nutritional requirements.**
B. Olson*, *Montana State University, Bozeman*.

3:05 PM 812 **An evaluation of temperament on performance and health of ruminants.**
R. F. Cooke*, *Oregon State University, EOARC, Burns*.

3:35 PM 813 **Impact of weaning, transportation. and vaccination stress on beef cattle performance.**
J. D. Arthington*, *University of Florida, Range Cattle Research and Education Center, Ona*.

4:05 PM 814 **Impact of environmental stress on feedlot cattle.**
T. L. Mader*, *University of Nebraska, Concord*.

4:35 PM **Sympoisum Review and Discussion**
R. Pritchard, *South Dakota State University, Brookings*.

Breeding and Genetics
Swine Breeding
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS, USDA
123

4:00 PM 815 **Estimation of genetic parameters for birth weight, pre-weaning mortality and hot carcass weight in a crossbred population of pigs.**
M. Dufrasne*[1,2], I. Misztal[3], S. Tsuruta[3], J. Holl[4], K. A. Gray[4], and N. Gengler[1], [1]*Animal Science Unit, Gembloux Agro-Bio Tech, University of Liege, Gembloux, Belgium*, [2]*FRIA, Brussels, Belgium*, [3]*Department of Animal and Dairy Science, University of Georgia, Athens*, [4]*Smithfield Premium Genetics Group, Rose Hill, NC*.

4:15 PM 816 **Effect of within-year variation on growth performance and subsequent reproductive performance in gilts.**
C. R. G. Lewis*[1,2], K. L. Bunter[1], and S. Hermesch[1], [1]*Animal Genetics and Breeding Unit (AGBU), University of New England (UNE), Armidale, NSW, Australia*, [2]*PIC North America, Hendersonville, TN*.

4:30 PM 817 **Towards robust sows: Heat tolerance expressed in fecundity traits.**
S. Bloemhof*[1,2], E. Knol[1], E. van der Waaij[2], and I. Misztal[3], [1]*TOPIGS Research, Beuningen, the Netherlands*, [2]*Animal Breeding and Genomics Centre, Wageningen, the Netherlands*, [3]*Department of Animal and Dairy Science, University of Georgia, Athens, Georgia, United States of America*.

4:45 PM 818 **A comparison of methods for predicting litter size in commercial pig lines.**
L. Tusell*[1], P. Perez[1], S. Forni[2], X. L. Wu[1], and D. Gianola[1], [1]*Department of Animal Sciences, University of Wisconsin, Madison*, [2]*Genus Plc, Hendersonville, TN*.

Thursday, July 19

Animal Behavior and Well-Being
Pain and Discomfort in Farm Animals
Chair: Marcia Endres, University of Minnesota
223

8:30 AM 819 **Pain and discomfort in farm animals.**
S. T. Millman*, *Iowa State University, Veterinary Diagnostic and Production Animal Medicine, Ames*.

9:15 AM 820 **The impact of housing and exercise on inflammatory molecules in the joints of open gilts.**
M. W. Orth*, J. M. Mapes, C. I. Robison, J. E. Link, and G. M. Hill, *Michigan State University, East Lansing*.

9:30 AM 821 **Argon versus CO_2 gas induction of unconsciousness in piglets.**
L. J. Sadler*[1], T. M. Widowski[2], C. Wang[1], A. K. Johnson[1], and S. T. Millman[1], [1]*Iowa State University, Ames*, [2]*University of Guelph, Guelph, Ontario, Canada*.

9:45 AM 822 **Return to sensibility: Use of yohimbine (alpha 2-antagonistic reversal agent) for anesthetized sows.**
M. D. Pairis*[1], A. K. Johnson[1], S. T. Millman[2], K. J. Stalder[1], and L. A. Karriker[2], [1]*Iowa State University Department of Animal Science, Ames*, [2]*Iowa State University Veterinary Department of Production Animal Medicine, Ames*.

10:00 AM **Break**

10:15 AM 823 **Herd-level risk factors for hock injuries in US freestall herds.**
A. K. Barrientos*[1], N. Chapinal[1], D. M. Weary[1], E. Galo[2], and M. A. G. von Keyserlingk[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, British Columbia, Canada*, [2]*Novus International Inc., St. Louis, MO*.

10:30 AM 824 **Herd-level risk factors for lameness in US freestall herds.**
N. Chapinal*[1], A. K. Barrientos[1], M. A. G. von Keyserlingk[1], E. Galo[2], and D. M. Weary[1], [1]*Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada*, [2]*Novus International Inc., St Louis, MO*.

10:45 AM 825 **Differences in pain thresholds associated with active and healing digital dermatitis lesions in dairy cattle.**
J. H. Higginson Cutler*[1], D. F. Kelton[1], G. Cramer[2,1], J. Walter[1], and S. T. Millman[2], [1]*University of Guelph, Guelph, ON, Canada*, [2]*Cramer Mobile Bovine Veterinary Services, Stratford, ON, Canada*, [3]*Iowa State University, Ames*.

11:00 AM 826 **Effects of anti-GnRF vaccine Bopriva and band castration on acute indicators of pain in feedlot beef cattle under North American management practices.**
S. Marti*[1], M. Devant[1], S. Amatayakul-Chantler[2], L. A. Jackson[3], E. D. Janzen[4], and K. S. Schwartzkopf-Genswein[5], [1]*IRTA-Ruminant Production, Animal Nutrition, Management, and Welfare Research Group, Caldes de Montbui, Barcelona, Spain*, [2]*Veterinary Medicine R&D, Pfizer Animal Health, Parkville, Victoria, Australia*, [3]*Veterinary Medicine R&D, Pfizer Animal Health, Kalamazoo, MI*, [4]*University of Calgary Veterinary Medicine, Calgary, AB, Canada*, [5]*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*.

11:15 AM 827 **Effect of road transport and lairage on body temperature of feedlot steers.**
J. B. Gaughan*[1], S. L. Bonner[2], I. D. Loxton[3], and R. J. Lawrence[4], [1]*The University of Queensland, Gatton, Qld, Australia*, [2]*FSA Consulting, Toowoomba, Qld, Australia*, [3]*Beef Support Services, Yeppoon, Qld, Australia*, [4]*Integrated Animal Production, Toowoomba, Qld, Australia*.

Forages and Pastures III
Chair: Steve Washburn, North Carolina State University
225AB

8:30 AM 828 **An electronic rising plate meter improves ability to accurately determine cool-season annual forage availability: I. Calibration.**
C. Moffet*, J. Rogers, and R. Reuter, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

8:45 AM 829 **An electronic rising plate meter improves ability to accurately determine cool-season annual forage availability: II. Application.**
R. Reuter*, J. Rogers, and C. Moffet, *The Samuel Roberts Noble Foundation Inc., Agriculture Division*.

9:00 AM 830 **Evaluation of forage quality predictors in early- and late-maturing cultivars of annual ryegrass (*Lolium multiflorum* Lam.).**
W. B. Smith*[1,2], R. B. Muntifering[1], E. van Santen[2], S. L. Dillard[1], E. A. Guertal[2], and D. M. Ball[2,3], [1]*Dept of Animal Sciences, Auburn University, Auburn, AL*, [2]*Dept of Agronomy & Soils, Auburn University, Auburn, AL*, [3]*Alabama Cooperative Extension System, Auburn*.

9:15 AM 831 **Response of postpartum dairy cows to different grazing strategies: Effect of herbage allowance on milk and solids production.**
M. Sprunck[1,2], D. A. Mattiauda[1], G. Motta[1], M. Fajardo[1], and P. Chilibroste*[1], [1]*Facultad de Agronomía, Paysandú, Paysandú, Uruguay*, [2]*Agencia Nacional de Investigación e Innovación, Montevideo, Montevideo, Uruguay*.

9:30 AM 832 **The effects of time of allocation of a ryegrass-based pasture on animal performance, nitrogen utilization and grazing behavior from late-lactation dairy cows.**
R. E. Vibart*, D. Pacheco, K. Lowe, and B. A. Barrett, *AgResearch Ltd., Grasslands Research Centre, Palmerston North, New Zealand*.

9:45 AM 833 **Effect of stocking rate and cow lactation stage on nitrogen balance of grazing dairy cows considering two periods of supplementation at pasture.**
A. I. Roca-Fernandez*, D. Baez-Bernal, and A. Gonzalez-Rodriguez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

10:00 AM 834 **Milk performance of two dairy cow genotypes (Holstein-Friesian vs. Normande) at two levels of supplementation (low vs. high) in long residence time grazing paddocks.**
A. I. Roca-Fernandez*[1,2], L. Delaby[3], S. Leurent[4], M. E. Lopez-Mosquera[2], and A. Gonzalez-Rodriguez[1], [1]*Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*, [2]*University of Santiago de Compostela, Lugo, Galicia, Spain*, [3]*INRA Agro-Campus Ouest UMRPL, Saint Gilles-Rennes, Bretagne, France*, [4]*INRA Experimental Farm Le Pin au Haras, Borculo-Exmes, Normandy, France*.

10:15 AM 835 **Effect of daily herbage allowance (low vs. high) and cow lactation stage (early vs. middle) on sward quality and milk performance of grazing dairy cows.**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

10:30 AM 836 **Rearing of dairy heifers at pasture from temperate regions (Galicia, NW Spain).**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

10:45 AM 837 **Milk urea concentration test as a quick response of the energy/protein balance in dairy cattle ration.**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

11:00 AM 838 **Effect of calving date (spring vs. autumn) and parity (primiparous vs. multiparous) on milk performance of Holstein-Friesian grazing dairy cows from Galician conditions.**
A. I. Roca-Fernandez*, A. Gonzalez-Rodriguez, and O. P. Vazquez-Yañez, *Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*.

11:15 AM 839 **Effect of oilseed concentrate source (cottonseed vs. linseed) on milk composition and fatty acids profile of dairy cows (grazing vs. silage + grazing) from NW Spain humid region.**
A. I. Roca-Fernandez*[1], A. Gonzalez-Rodriguez[1], O. P. Vazquez-Yañez[1], and J. A. Fernández-Casado[2], [1]*Agrarian Research Centre of Mabegondo, La Coruna, Galicia, Spain*, [2]*Agrarian and Fitopathologic Laboratory of Galicia, La Coruna, Galicia, Spain*.

Physiology and Endocrinology II
Chair: Jason Ross, Department of Animal Science, Iowa State University
Sponsor: ASAS Foundation
226ABC

8:30 AM 840 **ASAS Early Career Achievement Award: The physiology of heat stress: A shift in metabolic priorities at the systemic and cellular levels.**
R. P. Rhoads*[1] and L. H. Baumgard[2], [1]*Virginia Polytechnic Institute and State University, Blacksburg*, [2]*Iowa State University, Ames*.

9:00 AM 841 **Single and double, fixed-time insemination of postpartum sows given intravaginal triptorelin gel.**
N. R. Augspurger*[1], M. E. Johnston[1], M. E. Swanson[2], and S. K. Webel[1], [1]*JBS United Inc., Sheridan, IN*, [2]*Pennatek LLC, Radnor, PA*.

9:15 AM 842 **Effects of glucuronic acid and *N*-acetylglucosamine supplementation on the in vitro maturation and fertilization of pig oocytes.**
A. Mello*, K. Dalton, and B. D. Whitaker, *The University of Findlay, Findlay, OH*.

9:30 AM 843 **Litter characteristics and thermoregulatory behavior of first parity sows exposed to a controlled heat stress (HS) during gestation.**
M. C. Lucy*[1], T. J. Safranski[1], J. N. Rhoades[1], J. W. Ross[2], N. K. Gabler[2], R. P. Rhoads[3], and L. H. Baumgard[2], [1]*University of Missouri, Columbia*, [2]*Iowa State University, Ames*, [3]*Virginia Tech, Blacksburg*.

9:45 AM 844 **Comparison between conventional sex-sorted semen and a higher dose\ lower concentration sex-sorted semen on conception rates and calf gender ratio.**
J. A. Lucena*[1], A. G. Kenyon[1], J. P. Reynolds[2], J. D. Champagne[1], T. L. Lehenbauer[1], and S. S. Aly[1], [1]*Veterinary Medicine Teaching & Research Center, School of Veterinary Medicine, University of California, Davis*, [2]*Western University of Health Sciences, Pomona, CA*.

10:00 AM 845 **Effect of a post-weaning high-energy diet on age at puberty, testicular characteristics, and semen production in Holstein bulls.**
B. R. Harstine*[1], M. Maquivar[1], L. A. Helser[2], M. D. Utt[1], C. Premanandan[3], J. M. DeJarnette[2], and M. L. Day[1], [1]*Department of Animal Sciences, The Ohio State University, Columbus*, [2]*Select Sires Inc., Plain City, OH*, [3]*Department of Veterinary Biosciences, The Ohio State University, Columbus*.

10:15 AM 846 **Oviductal protein and ovarian hormone concentrations during the first five days of the estrous cycle in first and third estrous ewe lambs and mature ewes.**
J. G. Berardinelli*, *Montana State University, Bozeman*.

10:30 AM 847 **Effect of phytoestrogens on basal and GnRH-induced gonadotropin secretion from ovine pituitary cells in culture.**
S. A. Arispe*, B. M. Adams, and T. E. Adams, *University of California, Davis*.

10:45 AM 848 **Effect of acidic pH on uterine response to interferon-τ.**
A. Ahmadzadeh*, T. Davis, K. Carnahan, and C. Autran, *University of Idaho, Moscow*.

Symposium: Reproductive Immune Interactions
Chair: Craig Gifford, Oklahoma State University
Sponsors: ASAS and Western Section ASAS
222AB

8:30 AM **Welcome and Introduction.**

8:35 AM 849 **Maternal immunological adjustments to pregnancy in ruminants and possible implications for postpartum uterine health.**
P. J. Hansen*, *University of Florida, Gainesville*.

9:15 AM **Immune function in the CL.**
J. Pate*, *Pennsyvalnia State University*.

9:55 AM **ISG in the uterus and peripheral blood as well as work with BVDV.**
T. R. Hansen*, *Colorado State University*.

10:35 AM **Biological Role of Interferon Tau in Endometrial Function and Conceptus Elongation in Ruminants.**
T. Spencer*, *Washington State University*.

Ruminant Nutrition
General Ruminant Nutrition
Chair: Rick Kohn, University of Maryland
125AB

8:30 AM 850 **Effects of crude glycerol supplementation on in vitro ruminal fermentation and Merino ewes performance.**
S. J. Meale*[1], S. Ding[1], T. A. McAllister[2], R. D. Bush[1], D. Palmer[1], and A. V. Chaves[1], [1]*Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia*, [2]*Lethbridge Research Center, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada*.

8:45 AM 851 **Process development and nutritional evaluation of a supplemental byproduct feed for cattle from expired grocery foods.**
M. A. Froetschel*[1], C. L. Ross[1], and L. E. Brewer[2], [1]*The University of Georgia, Athens*, [2]*Viridiun LLC, Cumming, GA*.

9:00 AM 852 **Biometrics of digestive tube of kids suckled up to 90 days fed different sources of goat milk replacers.**
L. S. Knupp, M. I. Marcondes*, M. M. S. Santos, N. O. Souza, L. M. Carvalho, M. A. S. Novaes, J. V. F. Souza, and C. M. Veloso, *Universidade Federal de Viçosa, Viçosa, MG, Brazil*.

9:15 AM 853 **Evaluation of a prototype galactooligosaccharide supplement in milk replacer for neonatal calves.**
J. J. Castro*[1], C. R. Bromfield[1], H. J. Mangian[1], J. R. Loften[2], and J. K. Drackley[1], [1]*University of Illinois, Urbana*, [2]*Milk Specialties Global, Carpentersville, IL*.

9:30 AM 854 **Remote monitoring of individual animal mineral supplement intake by range cattle.**
T. Dal Molin*[1], D. Tolleson[1], J. Sprinkle[1], M. Sprinkle[2], D. Schafer[1], and B. McMurry[3], [1]*University of Arizona, Tucson*, [2]*Intel Corporation, Hillsboro, OR*, [3]*Cargill Animal Nutrition, Elk River, MN*.

9:45 AM 855 **Effect of corn processing on growth performance and fecal nutrient composition in dairy bull calves fed whole or steam-flaked corn diets from pre-weaning to 8 weeks post-weaning.**
J. D. Allen*[1], L. W. Hall[1], C. D. Burrows[1], and G. C. Duff[2,1], [1]*University of Arizona, Tucson*, [2]*Montana State University, Bozeman*.

10:00 AM 856 **Effects of short-term feed restriction on ruminal function.**
S. Zhang*[1], D. R. Barreda[2], J. R. Aschenbach[3], and G. B. Penner[1], [1]*University of Saskatchewan, Saskatoon, SK, Canada*, [2]*University of Alberta, Edmonton, AB, Canada*, [3]*Free University of Berlin, Berlin, Germany*.

10:15 AM 857 **Identifying improbable feed samples using a multivariate procedure.**
P. S. Yoder*, N. R. St-Pierre, and W. P. Weiss, *The Ohio State University, Wooster*.

10:30 AM 858 **Application of meta-analysis to build new feed unit systems for ruminants based on absorbed nutrients and animal responses in France.**
D. Sauvant*[1], J. L. Peyraud[2], and P. Noziere[3], [1]*AgroParistech-INRA, Paris, France*, [2]*INRA-AgroCampus, Rennes, France*, [3]*INRA UMR Herbivores, Clermont-Ferrand, France*.

10:45 AM 859 **Sampling sites and inserting depth of oral stomach tube affects the fermentation parameters of ruminal fluid collected in dairy cows.**
J. S. Shen*, Z. Chai, L. J. Song, J. X. Liu, and Y. M. Wu, *Institute of Dairy Science, MoE Key laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, China*.

11:00 AM 860 **Comparison of nutrient composition and in vitro digestion characteristics of spent mushroom soybean (*Pleurotus* spp.) substrate and soybean straw.**
J. P. Gafigi[1], M. Mutimura[2], and S. Uwituze*[1], [1]*National University of Rwanda, Faculty of Agriculture, Department of Animal Productions, Butare, Rwanda*, [2]*Rwanda Agriculture Board, Kigali, Rwanda*.

Ruminant Nutrition Symposium
Update on Nutrient Requirements for Ruminants
Chair: Alex Bach, IRTA
Sponsor: West Central
131ABC

8:30 AM 861 **Revising protein requirements of calves and heifers.**
T. M. Hill*[1], H. G. Bateman[1], J. M. Aldrich[1], and A. J. Heinrichs[2], [1]*Nurture Research Center, Provimi North America, Brookville, OH*, [2]*Department of Animal Science, Penn State University, University Park*.

9:15 AM 862 **Revising energy requirements of dairy breed calves and heifers.**
M. E. Van Amburgh*, *Cornell University, Ithaca, NY*.

10:00 AM 863 **Protein and amino acids for growth.**
E. C. Titgemeyer*, *Kansas State University, Manhattan*.

10:45 AM 864 **Update on protein and amino acid requirements for lactating dairy cows.**
H. Lapierre*[1], L. Doepel[2], and D. R. Ouellet[1], [1]*Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*, [2]*Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada*.

Teaching/Undergraduate and Graduate Education Symposium
Online Education for a Hands-On Career: The good, the bad and the ugly of online education in animal sciences
Chair: Olga Bolden-Tiller, Tuskegee University
222C

8:30 AM **Introduction**

8:45 AM 865 **Making the world your stage through best practices in distance education.**
E. Sewell[1], B. Parr*[1], and D. Mulvaney[2], [1]*College of Education, Auburn University, Auburn, AL*, [2]*Animal Sciences, Auburn University, Auburn, AL*.

9:10 AM 866 **Real and perceived barriers to distance education in animal sciences and other disciplines.**
K. Boland*[1], B. Parr[1], and D. Mulvaney[2], [1]*College of Education, Auburn University, Auburn, AL*, [2]*Animal Sciences, Auburn University, Auburn, AL*.

9:35 AM **Break**

9:50 AM 867 **Engaging the new biology: Integrating quantitative genetics and genomics in animal breeding graduate learning.**
R. M. Lewis* and B. B. Lockee, *Virginia Tech, Blacksburg*.

10:15 AM 868 **Service learning: Hands-on opportunities for on-line courses.**
O. U. Bolden-Tiller*[1], L. G. Martin[2], and I. Everett[1], [1]*Tuskegee University, Tuskegee Institute, AL*, [2]*Auburn University, Auburn, AL*.

10:40 AM 869 **Student learning in undergraduate animal breeding courses is improved through play of an online genetic simulation game.**
K. L. Kessler*[1], R. M. Lewis[2], J. P. Cassady[3], and K. M. Cammack[1], [1]*University of Wyoming, Laramie*, [2]*Virginia Polytechnic Institute and State University, Blacksburg*, [3]*North Carolina State University, Raleigh*.

11:05 AM **Panel Discussion**

Breaking into NSF
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127C
8:30 – 11:30 AM

Author Index

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