On behalf of the participating societies, we welcome you to JAM 2010. This year, in addition to the American Society of Animal Science (ASAS), the American Dairy Science Association® (ADSA®), and the Poultry Science Association (PSA), we welcome the participation of the Canadian Society of Animal Science (CSAS) and the Asociación Mexicana de Producción Animal (AMPA), making this meeting one of the largest ever. The annual meeting is an important event for all of the societies. It is a 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 11, when a live John Denver Tribute concert will kick off the week. Other special events include the National Extension Workshop and Informal Nutrition Symposium on Sunday, July 11, a presentation by Dr. Roger Beachy (USDA-NIFA) on Monday, July 12, and the FASS update scheduled for Tuesday, July 13, where the activities of the FASS Science Policy Directors will be highlighted. And don’t miss the Global Networking Reception on Wednesday, July 14—it’s open to all attendees, friends, and families.

The meeting program offers many different educational and professional development opportunities. Over 2,800 abstracts were accepted and over 44 scientific symposia are scheduled. The program committee worked hard to produce an integrated program across species. Scheduled symposia include the National Extension Workshop; Nonruminant Nutrition: Nutrigenomics; Animal Health: Accounting for Diseased Animals in Research Trials (Outliers, Treatment Interactions, and Disease Induction by Treatment); Dairy Products and Human Health: The Facts; Companion Animals: Comparative Enrichment—Implications on Health and Behavior; Dairy Foods: Towards a Mechanistic Understanding of Probiotic Function in Man and Animals; Contemporary Issues: Global Livestock Production to 2050; CSAS Symposium: Livestock Transport; ASAS Cell Biology Symposium: Receptors and Signal Transduction; Breeding and Genetics, Physiology, and Endocrinology: Bridging the Gap Between Physiology and Genomics; Growth and Development: Intestinal Development and Growth; Meat Science and Muscle Biology: Impact of Pre- and Post-Slaughter Handling on Meat Quality; Physiology and Endocrinology: Sperm Oviduct Interaction in Livestock and Poultry. Graduate students should check out the symposium titled “Transitions.”

We are grateful to the many people involved with this meeting and program, starting with our sponsors—their support is essential to the success and quality of the program. 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 Greg Lardy (chair), Clint Kreibiel, John Vicini, Dave Casper, Chris Ashwell, Amy Batal, and Karen Schwartzkopf-Genswein. We also thank the many others who contributed to this huge undertaking, including the FASS staff and the executive and associate executive directors of the founding societies: Meghan Wulster-Radcliffe and Paula Schultz (ASAS), Jim Kessler and Jon Cole (PSA), and Peter Studney (ADSA).

Most of all, thank you, our attendees, for participating in JAM 2010 and making it a success!
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 has a plan in place to handle these situations, and they depend on your cooperation. If members of the media approach you for an interview, please politely refuse and direct them to the convention’s media room, where spokespersons are available.

Thank you for your cooperation.
General Meeting Information

Location

The Colorado Convention Center is conveniently located at the heart of exciting downtown Denver within easy walking distance of more than 7,000 hotel rooms, 300 restaurants, the nine theatres of the Denver Performing Arts Complex, and a wide variety of shopping venues.

Schedule of Events

The 2010 ADSA®-PSA-AMPA-CSAS-WSASAS-ASAS Joint Annual Meeting will be held July 11–15 (Sunday through Thursday). The opening session will be held on Sunday evening, July 11; scientific sessions will begin Monday morning, July 12, and run through noon on Thursday, July 15. Please note that the schedule for this meeting is Sunday to Thursday.

The Triennial Growth Symposium: Dietary Regulation of Growth and Development will be held Sunday, July 11. The opening session will begin with a presentation on animal agriculture in Colorado by the new president of Colorado State University, Dr. Anthony Frank. The festivities will continue with “The Absolute Best John Denver Tribute Concert” performed live by John Adams and his band! Since John Denver’s untimely death in 1997, John Adams has promised to keep the legend’s music alive. John Denver himself was amazed by how much the two sounded alike when he was alive, so this show is sure to provide great entertainment for all! Join us for dessert and beverages at the reception that follows.

The complete schedule of events can be found on page 37 of this book.

Program Format for 2010

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.

Registration Hours

Registration will be located on Level 1 of the Colorado Convention Center in Denver, in front of Exhibit Hall F. Registration hours for the 2010 ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Joint Annual Meeting, including special symposia and other events, will be as follows:

Saturday, July 10 (preregistered only) .................. 3:00 pm–5:00 pm
Sunday, July 11 .................................... 7:00 am–7:00 pm
Monday, July 12 .................................... 6:30 am–5:15 pm
Tuesday, July 13 ...................................... 6:30 am–5:15 pm
Wednesday, July 14 ................................. 6:30 am–5:15 pm
Thursday, July 15 .................................... 8:00 am–1:00 pm
Important Phone Numbers

Registration Desk ................................. (303) 228-8239
Hyatt Regency at the Colorado Convention Center .......................... (303) 436-1234
Grand Hyatt Denver ........................................ (303) 295-1234
Comfort Inn Denver, Downtown ........................................ (303) 295-0400
Crowne Plaza Denver ........................................... (303) 573-1450
Marriott City Center Denver ........................................ (303) 297-1300
Residence Inn City Center ........................................... (303) 296-3444
Hilton Garden Inn ............................................. (303) 603-8000

Media Check-In

Please check in at the Registration Desk on the 1st Level lobby, outside Exhibit Hall F of the Colorado Convention Center.

Speaker Ready Room

The Speaker Ready Room is located in Room 407 of the Colorado 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 709 of the Colorado 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

The Business Center is located off Lobby A in the Colorado Convention Center and provides printing, copying, and shipping services. The Business Center is open from 7:30 am to 5:30 pm during the meeting.

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. Please note that all session rooms will be equipped with a computer and LCD projector. All oral presentations and invited speaker presentations will be preloaded before the start of the session based on the schedule below.

Onsite Upload Information

Onsite upload: We will provide onsite presentation uploading in Room 407. Files can be delivered to the pre-load room (Room 407) on the day prior to your scheduled presentation. Note: Presentations must be uploaded by 5:00 pm on the day before your scheduled presentation; no exceptions will be made. Files will not be accepted by e-mail.
**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, Exhibit Hall F.

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**). The exhibit hall will open at 6:30 am on 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 should include the abstract number, 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” precede 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 conference.

**ARPAS Continuing Education Units**

The 2010 ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Joint Annual Meeting has been approved for up to 21 continuing education units (CEUs) for the American Registry of Professional Animal Scientists (ARPAS) certification requirements. Check the schedule of events for times and location of the ARPAS exams.

**Continuing Education Credits for Veterinarians (RACE credits)**

Many of the symposia at the 2010 Joint Annual Meeting will be approved for RACE credits. We are in the process of having specific symposia approved. Following approval, symposia approved for RACE credits will be posted online at http://adsa.psa.ampa.csas.asas.org/meetings/2010/.

**Job Resource Center**

The ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Job Resource Center is located in the exhibit hall. The job announcements and resumes 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; Poultry Production and Management; Poultry Nutrition; Poultry Processing; Poultry Health; Production and Management; Ruminant Nutrition; and Teaching.
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 E-Career Tool has been developed to facilitate this communication. The E-career tool is free to use and very user friendly. Take advantage of the “search employee” function to identify potential candidates and see where and when they will be presenting their work at the 2010 ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Joint Annual Meeting. For the job seeker, upload your CV and cover letter.

ASAS is excited to bring this feature to Joint Annual Meeting attendees once again, and we hope you will take full advantage of this exciting tool! Visit http://adsa.psa.ampa.csas.asas.org/meetings/2010/ecareer.asp for more information! See you in Denver!

Cyber Café

Keep in touch with work, family, and friends during the ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Joint Annual Meeting at the Cyber Café. Located in exhibit hall, the Cyber Café is available to all meeting attendees. The Cyber Café will also have a computer with a printer for limited printing during the meeting.

Headquarters Hotels

**Hyatt Regency at the Colorado Convention Center**

ASAS Headquarter Hotel
650 15th Street
Denver, CO 80202
(303) 436-1234

**Grand Hyatt Denver**

ADSA Headquarter Hotel
1750 Welton Street
Denver, CO 80202
(303) 295-1234

**Comfort Inn Downtown Denver**

Student Headquarter Hotel
401 17th Street
Denver, CO 80202
(303) 296-0400

**Crowne Plaza Denver**

PSA Headquarter Hotel
1450 Glenarm Place
Denver, CO 80202
(303) 573-1450

**Marriott City Center Denver**

CSAS Headquarter Hotel
1701 California Street
Denver, CO 80202
(303) 297-1300

**Residence Inn City Center**

Official JAM Hotel
1725 Champa Street
Denver, CO 80202
(303) 296-3444

**Hilton Garden Inn**

Official JAM Hotel
1400 Welton St
Denver, CO 80202
(303) 603-8000
Transportation in Denver: How to get downtown?

1. Shuttle Service
   The JAM has partnered with Blue Sky Shuttle to secure a special rate for airport/downtown transportation of $18.00 one way and $24.00 round trip. We recommend making reservations in advance at www.blueskyshuttle.com/reservation_step1.php#. Please use the group code “JAM” to ensure you receive the JAM discount.

2. Taxi Service
   Taxicabs are readily available outside the airport. The fare from the airport to the downtown convention hotels will start at $54.50 plus gratuity. Share a cab with a fellow JAM attendee!

3. Denver Light Rail
   RTD light rail offers over 30 convenient stations on several lines to get you anywhere you want to go. Visit http://www.rtd-denver.com/ for maps and more information.

Welcome to Denver

Denver Sightseeing Options
When you wake up in Denver, adventure awaits. If you're looking for a chic and sophisticated jaunt, visit one of many museums and galleries that make Denver the Arts Capital of the West. Or indulge your inner shopper or foodie followed by a blissful afternoon at a spa. Bike paths throughout the city are a great way to explore major attractions or escape for a day trip into the majestic Rockies. A Visitor Information Center is conveniently located inside the 14th and California Street entrance of the Colorado Convention Center, where the staff is available to assist conference attendees with city questions and dining reservations—they know all the best restaurants in the city! There are also more than 100 brochures promoting the best Denver has to offer.

Downtown Denver
The Brookings Institute ranks Denver as the fourth most walkable downtown in the nation. You can save on shoe-leather by riding the free shuttle bus on the 16th Street Mall—it makes everything downtown easy to reach.

Colorado State Capitol
www.state.co.us
Stand exactly 5,280 feet above sea level (one mile high!) on the west steps, and then climb to the rotunda for a panorama of snowcapped peaks. It is against state law to block the view of the 200 named mountains visible from the dome. Free tours on weekdays.

Denver Art Museum
www.denverartmuseum.org
There are two buildings—one a fortress-like structure from Italian architect Gio Ponti, the other a structure that resembles a titanium crystal with peaks and shards, designed by Daniel Libeskind. Inside, find the world's greatest collection of Native American art and 68,000 other art objects, including works from European masters and Old West classics. Coming July 1, 2010 is Tutankhamen: The Golden King and the Great Pharaohs.

U.S. Mint
www.usmint.gov/mint_tours/index.cfm?action=StartReservation
Learn how to make money! The Mint produces 50 million coins a day, each one stamped with "D" for Denver. Free tours show every step in the process of turning a dull, blank, metal slug into shiny pocket change.

16th Street Mall – Pedestrian Mall
Lined with 200 trees and 50,000 flowers, this festive, mile-long pedestrian promenade has 28 outdoor cafes and offers Denver's best people-watching. I. M. Pei designed the gray and pink granite pathway to resemble the pattern of a diamondback rattlesnake. Hop on the bus—they're free and stop on every corner. After dark, horse-drawn carriages clatter up and down the Mall.
**Larimer Square**  
www.LarimerSquare.com  
This trendy block of Victorian buildings is home to chic shopping, dance clubs, a comedy club, outdoor cafés, and a dozen of Denver's best restaurants. For 40 years in downtown Denver, it's hip to be at the "Square."

**LoDo Historic District**  
www.lodo.org  
Denver’s happening historic district is filled with turn-of-the-century warehouses, now home to 90 brewpubs, sports bars, restaurants, and rooftop cafes. Stop by Rockmount Ranchwear for a snap-button Western shirt at the store where they were invented; browse from 6:30 a.m. to 9 p.m. at the Tattered Cover Bookstore; listen to jazz at El Chapultepec, one of Esquire Magazine’s 50 best bars; or sip a handcrafted beer at the Wynkoop Brewing Company, Denver’s first brewpub opened by the current mayor, John Hickenlooper.

**Confluence Park**  
www.greenwayfoundation.org  
Denver was founded here as a gold mining camp in 1858. Today, the river park is the heart of Denver’s 850-mile bike trail network and is surrounded by attractions. Gear up for the mountains at the REI Flagship store; ride the Platte River Trolley to the Downtown Aquarium to see stingrays and sharks; eat and drink in the nearby neighborhoods of Riverfront, LoHi, and Highlands; or scream your head off on the Mind Eraser at Elitch Gardens, Denver’s downtown theme park.

**A Dozen Mile High “Must-Dos”**

*You can't come to Denver without trying some of these activities:*

- Stand exactly one mile above sea level on the steps of the State Capitol or in City Park
- Sip a local Denver beer (Denver brews more beer than any other city in the US)
- Taste buffalo (buffalo is the leanest of red meats with fewer calories than chicken)
- See a dinosaur bone (the first dinosaurs were discovered at Dinosaur Ridge, where you can still see bones and footprints embedded in rock)
- Hear a concert at Red Rocks
- Take a hike. There are thousands of miles of hiking trails within an hour or so of downtown
- Cheer on a team! (Denver has a record seven professional sports teams and six sports stadiums)
- Borrow a bike (Denver’s bike sharing program offers 500 bikes for sharing at 30 locations)
- Browse art on First Friday (dozens of art galleries in Denver neighborhoods stay open late on the First Friday of the month)
- Enjoy theatre, opera, symphony, and dance (the Denver Performing Arts Complex is the second largest in the nation with 10 venues seating 10,000 people)
- Climb a 14er (there are 54 of them in Colorado—Mount Evans is accessible by car and Pikes Peak can be climbed by car or cog railroad)
- Hit a golf ball (in Denver’s rarefied air, golf balls travel 10% farther than at sea level).
Special Events

**Student White Water Rafting Trip on Clear Creek**  
*Saturday, July 10*  
12:00 pm – 4:00 pm  
*Bus departs from the Comfort Inn*  
*Tickets: $44*  
Prepare for the adventure of a lifetime! We’ll do a beginner trip with Class I to III rapids, perfect for first-time paddlers but plenty of action for those seeking it. Participants must complete the necessary liability waivers and should bring rubber-soled foot gear (tennis shoes, river sandals, etc.); swimsuit or shirt and shorts that will dry quickly (nylon, fleece, other synthetics, or wool); sunscreen and lip balm; sunglasses with strap; bandanna or hat; bottled water; and personal necessities. Price includes round-trip transportation, rafting trip, equipment rental, and guide gratuity.

**Student Informal Mixer: Cowboy Lounge**  
*Saturday, July 10*  
5:30 pm – 8:00 pm  
*Tickets: $18*  
Meet in the lobby of the Comfort Inn at 5:30 and we’ll walk as a group down 16th Street Mall to Cowboy Lounge at 1941 Market St. (near Coors Field). Cowboy Lounge is the only country and western bar in downtown Denver offering country and rock music. The atmosphere captures the true Wild West with its western cowboy flair, spacious dance floor, dance lessons, and movie screens. Ticket price includes Backyard Barbecue dinner.

**Open Meeting: Becoming an ADSA Volunteer Leader**  
*Sunday, July 11*  
11:30 am – 12:30 pm  
*Grand Hyatt,  Maroon Peak*  
Why become an ADSA Volunteer Leader? Come to this meeting to find out! Whether you want to get started as a volunteer or are already serving on an ADSA committee, this meeting will help you understand the benefits of leadership, what ADSA is doing, where ADSA is headed, and how you can help us get there.

**SAD Midday Mixer and Pizza Party**  
*Sunday, July 11*  
12:00 – 1:00 pm  
*Convention Center, 704/706*  
*Tickets: $5*  
Join your fellow dairy club members for a fun hour of getting reacquainted and making new friends. Lunch includes pizza, salad, and beverages. Registration is limited to undergraduate and graduate students and advisors.

**JDIP Meeting**  
*Sunday, July 11*  
1:00 pm – 6:00 pm  
*Grand Hyatt Denver, Mt. Sopris*  
Join with Johne’s Disease Integrated Program (JDIP) members and others with an interest in Johne’s disease to learn more about JDIP, get updates on current work in each of JDIP’s Core and Project areas and provide input on future plans. In addition to Sunday’s meeting, approximately 40 Johne’s related abstracts will be presented in poster and oral presentation sections on Monday that are part of the JAM Animal Health – Johne’s/JDIP program. All JAM registrants are welcome to attend any of the sessions.

**SAD-Dairy Quiz Bowl Final Round**  
*Sunday, July 11*  
5:30 – 6:00 pm  
*Convention Center, 705*  
On Sunday, university teams from across the US 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 2010 Dairy Quiz Bowl Winning Team.
Opening Session
Sunday, July 11
7:00 – 8:00 pm
Convention Center, Wells Fargo Theater
Come help us kick off the 2010 Joint Annual Meeting at the opening session. We will be paying tribute to a Colorado legend, John Denver, by featuring John Adams in “The Absolute Best John Denver Tribute Concert.”

Opening Reception
Sunday, July 11
8:00 – 10:00 pm
Convention Center, Korbel Ballroom
Wind down the evening by joining us after the opening session for desserts, beverages, and some long-awaited socializing time with colleagues and friends.

ASAS Graduate Student Open Forum
Monday, July 12
12:30 – 1:30 pm
Convention Center, Korbel Ballroom 2c
The ASAS Graduate Student Directors invite all ASAS graduate student members to an open forum on Monday, July 12. This forum has been established for three purposes: 1) to allow for representatives from graduate student organization to interact and exchange ideas to bring back to their respective universities; 2) to provide an opportunity for graduate students to voice their opinions and concerns on what the society can do to improve services to graduate students; and 3) to inform students about the activities and services ASAS has to offer graduate students and early career professionals. All graduate students are welcome.

Exhibitor Reception
Monday, July 12
4:00 – 6:00 pm
Convention Center, Exhibit Hall F
Relax after a high-energy first day of meeting with beverages and snacks in the exhibit hall. While there, take some time to peruse the exhibits to learn more about the latest products and services in our industries.

Address by Dr. Roger Beachy, Director of NIFA
Monday, July 12
5:00 – 6:00 pm
Convention Center, 403/404
Please take this opportunity to attend a presentation by Dr. Roger Beachy, Director of the National Institute of Food and Agriculture (NIFA). NIFA replaced the former Cooperative State Research, Education and Extension Service (CSREES), and its mission is to advance knowledge for agriculture, the environment, human health and well-being, and communities by supporting research, education, and extension programs in the land-grant university system and other partner organizations. NIFA helps fund research, education, and extension at the state and local levels and provides program leadership in these areas. Dr. Beachy will speak for 30 minutes, followed by a question and answer session.

ASAS Awards Program
Monday, July 12
7:00 – 8:30 pm
Convention Center, Korbel Ballroom 4abc
All meeting participants, families, and friends are welcome to attend the 2010 ASAS awards program. Please join us at this special event to recognize and congratulate the ASAS award winners at the Colorado Convention Center on Monday, July 12.
General Information

Graduate Student Mixer
Monday, July 12
9:00 pm
Blake Street Vault
1526 Blake Street
LoDo Denver
The Graduate Student Mixer, a regular JAM event, will be held 9:00 pm on Monday night at the Blake Street Vault (http://www.blakestreetvault.com/), which is located in LoDo Denver. If graduate students register prior to the meeting, they will receive free beverage tickets, but registration is not necessary to attend the event. The mixer is a great opportunity to catch up with old friends and make new ones at an historic Denver tavern. Preregistration is highly recommended.

Student Informal Mixer: Lucky Strike Lanes and Lounge
Monday, July 12
6:00 pm – 8:00 pm
No ticket required, meet in the lobby of the Comfort Inn to walk as a group.
Bowling, billiards, fun food, and drinks await at Lucky Strikes Lanes and Lounge on the 16th Street Mall. Enjoy the retro feel and experience the cool vibe. Premium, upscale bowling alleys with lane-side food service including a menu of appetizers, burgers, sandwiches, pizza, finger foods, salads, and desserts.

Spouse Event No. 1
Tuesday, July 13
9:00 am – 1:00 pm
Tour departs from the Hyatt Regency
Tickets: $45
Get out your walking shoes and join in on a creative and entertaining way to see the city. Denver Inside and Out is a walking tour/scavenger hunt/street theater based on the 1922 robbery of the Denver Mint. Participants of the tour unwittingly become accomplices in Denver’s most famous crime mystery. This downtown adventure takes in the city’s most noted landmarks. Guests use old-fashioned elbow grease and shoe leather to unravel the hidden clues while coming face to face with the bandits of the actual crime as they try and untwist one of Colorado’s most notorious crimes. Tour begins at the Hyatt Regency, directly across the street from the Convention Center. Tours will leave every 15 minutes in groups of 10 and then all will meet up at the end where you will be escorted to the shuttle and dropped off for lunch at the wonderful Rialto Café.

Preregistration for this event is required.

SAD Career Roundtable
Tuesday, July 13
9:30 – 11:00 am
Convention Center, 705
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 time to visit industry representatives in the exhibit hall for information about internships and job opportunities.

SAD Awards Luncheon
Tuesday, July 13
11:45 am – 2:00 pm
Convention Center, 704/706
Plan to attend this year’s SAD awards luncheon. The afternoon will be capped with 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.

Northeast ASAS/ADSA Business Meeting and Awards Lunch
Tuesday, July 13
12:30 pm – 2:00 pm
Convention Center, 711
Tickets: $30
Join us for lunch to celebrate the winners of the Northeast ASAS section and ADSA branch awards. Lunch will be followed by the Northeast ASAS/ADSA Business Meeting.
Western Section-ASAS Awards Lunch  
Tuesday, July 13  
12:30 pm – 2:00 pm  
Convention Center, 708/710/712  
Tickets: $30  
All Western Section members of ASAS are invited to the WSASAS Awards Luncheon to congratulate our award winners.

ASAS GS Lunch and Learn: Preparing for the Transition: Navigating the Job Market in a Difficult Economy  
Tuesday, July 13  
12:30 – 2:00 pm  
Convention Center, 703  
Enjoy lunch and an informal discussion with a diverse panel of academic, industry, and government professionals ready to answer your questions. Topics discussed will include the application process, interview skills, and marketing yourself in today's job market. Differences in landing a job in academia, industry, or government will be highlighted. This event is open to ASAS graduate students, and preregistration is necessary to receive lunch.

PSA Student Luncheon  
Tuesday, July 13  
12:30 – 2:00 pm  
Crowne Plaza, Library and Museum  
If you are a student and a member of the Poultry Science Association and you want to know more about PSA and its plans for the future, join us for an update from the student membership. This is a great time to meet other students in poultry science and to make new friends.

The ASAS Open Forum  
Tuesday, July 13  
4:30 – 5:00 pm  
Convention Center, 405  
Attendees are invited to The ASAS Open Forum in the Convention Center. You will have the opportunity to join discussions on current ASAS issues.

FASS Update  
Tuesday, July 13  
5:00 – 6:00 pm  
Convention Center, 507  
Plan to attend the FASS Update to hear an update from headquarters and learn about the work being done in Washington, DC. The session will include a presentation by our current science policy directors, Lowell Randel and Walt Smith. Also speaking will be the 2009–2010 FASS Congressional Science Fellow, Avenel Joseph.

ADSA Awards Program  
Tuesday, July 13  
7:00 – 8:00 pm  
Grand Hyatt, Grand Ballroom  
All meeting participants, families, and friends are welcome to attend the 2010 ADSA awards program. Please join us at this special event at the Grand Hyatt to recognize and congratulate the 2010 award winners.

2010 ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Ice Cream Social  
Tuesday, July 13  
8:15 – 9:30 pm  
Grand Hyatt, Imperial Ballroom  
Ice cream—we're going to eat ice cream! All meeting participants, families, friends, and award donors are invited to join us for the time-honored ice cream social.
PSA/WPSA-USA-Canada Student Mixer
Tuesday, July 13
9:30 pm
Meet in the lobby of the Crowne Plaza
Poultry science students are invited to meet in the lobby of the Crowne Plaza at 9:15 to walk over as a group or pick up a map and head out for a trip back to the Old West. The fun will begin at 9:30 at the Blake Street Vault. Enjoy a classic western saloon dating back to 1863, Old West food and drinks with Jack Daniels whiskey tastings as well as old favorites like Moscow Mules. The mixer is sponsored by the Poultry Science Association and the US and Canadian branches of the World’s Poultry Science Association.

Spouse Event No. 2
Wednesday, July 14
10:00 am – 1:00 pm
Bus departs from the Convention Center
Tickets: $45
You will board the bus at the Colorado Convention Center and then sit back and enjoy the ride on Banjo Billy’s Bus Tour! This historic tour of Denver takes place on an old school bus tricked out to look like a traveling hillbilly shack. Hear ghost tales, crime stories, and history while sitting on a couch, recliner, or saddle as the bus rolls through the core of the city. The bus will then drop you off at Marlowe’s Restaurant, where you’ll enjoy a delicious lunch!

Global Networking Reception
Wednesday, July 14
4:30 – 5:30 pm
Convention Center, Korbel Ballroom 4abc
All meeting participants, families, and friends are welcome to attend the global networking 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.

PSA Awards Banquet
Wednesday, July 14
6:00 – 10:00 pm
Convention Center, Four Seasons Ballroom 1&2
Tickets: $35
Please join us for a celebratory evening honoring the 2010 PSA award winners. All meeting participants, spouses, and friends are welcome at this event. The evening is sure to be a good time for all. Please make sure to purchase your ticket in advance. A limited number of tickets will be available for purchase at the registration desk.

CSAS Awards Banquet
Wednesday, July 14
6:00 – 8:30 pm
Denver Marriott, Ballroom Suites I–III
Tickets: $61
Please join us in honoring the 2010 CSAS award winners. All meeting participants, spouses, and friends are invited to attend this celebratory event. Please make sure to purchase your tickets in advance, as a limited number of tickets will be available for purchase at the registration desk.

AMPA Dinner
Wednesday, July 14
6:30 – 10:30 pm
Convention Center, 708/710/712
Tickets: $35
What better way to wrap up the week’s events than at the AMPA dinner fiesta! All are invited to enjoy good food and friendship with AMPA members as the 2010 ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Joint Annual Meeting draws to a close.
2010 ADSA Award Donors

ABS Global Inc.
ADSA
ADSA Foundation
Alltech Biotechnology Center
American Feed Industry Association
Cargill Animal Nutrition
Cargill Flavor Systems
Dairy Management Inc.
Danisco USA Inc.
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Land O’Lakes Purina Feed LLC
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The Iams Company
Zinpro Corporation

2010 PSA Award Donors

Alltech Inc.
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American Feed Industry Association
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Poultry Science Association
Tyson Foods Inc.
United Egg Producers

2010 CSAS Award Donors

Alltech
Nutreco
Elanco Animal Health

Dairy Farmers of Canada, Canadian Pork Council, and Chicken Farmers of Canada
Pfizer Animal Health
Exhibit Schedule

Sunday, July 12
Exhibit Setup ........................................... 10:00 am – 6:00 pm

Monday, July 13
Exhibits Open ........................................... 8:00 am – 5:00 pm
Exhibitor Reception ........................................ 4:00 pm – 6:00 pm

Tuesday, July 14
Exhibits Open ........................................... 8:00 am – 5:00 pm

Wednesday, July 15
Exhibits Open ........................................... 8:00 am – 2:00 pm
Exhibit Dismantle ........................................... 2:00 pm – 5:00 pm
Guide to Exhibitors/Booth Numbers

AAALAC .............................................. .406
Acadian Agritech. ................................. .715
Adisseo ........................................ 801,803,900,902
Ag Processing Inc. ............................... .413
Alltech ........................................... 315,317,414,416
Aloka Ultrasound .................................. .607
Alternative Design Mfg. ......................... .510
American Dairy Science Association (ADSA) . .604
American Society of Animal Science (ASAS). .700
Analab .............................................. .404
Ankom Technology ................................ .410
Arm & Hammer Animal Nutrition .............. .207
ARPAS. ............................................ .514
ASAS Foundation ................................ .702
Asociación Mexicana de Producción Animal (AMPA) ................................. .814
A-Tech Global (an MES Company) ........................ .601,603
Balchem ............................................. .507
Biomin .............................................. .706
Buchi Corporation ................................ .506
CABI Publishing ................................... .703,705
Cambridge University Press .................... .701
Chr. Hansen ........................................ .301,303
C-Lock Inc. ........................................ .812
Cumberland Valley Analytical Services ......... .311
Dairy Records Management ..................... .210
Dalex Livestock Solutions LLC .................. .212
Diamond V Mills ................................... .515,517,614,616
Distillers Grains Technology Council ........... .313
DSM Nutritional Products ........................ .807
EAAP ................................................ .605
Elsevier ............................................ .400
Estrotect .......................................... .216
Evonik Degussa Corp .............................. .305,307
FDA–Center for Veterinary Medicine ............ .713
Federation of Animal Science Societies (FASS) . .405
Feed Management Systems ..................... .411
FeedAC. ........................................... .802
Feedstuffs ........................................... .304
GTC Nutrition ..................................... .202
H.J. Baker & Bro.Inc. .............................. .516
Ice Robotics Limited. ............................. .915,917
International Ingredient Corp. .................. .401
Jefo Nutrition Inc. ................................. .205
Johnes’s Disease Integrated Program .......... .204
Journal of Animal Science (JAS) ................. .704
Kahne Limited ..................................... .711
Kemin Industries ................................... .911,912
Lallemand Animal Nutrition ...................... .403
Lotek Wireless Inc. ............................... .214
National Animal Health Monitoring System (NAHMS) ................................. .804
Nottingham University Press .................... .412
-Novus International .............................. .300,302
Omega Protein Inc. ............................... .500
Pearson ............................................. .612
PetAg Inc. ........................................... .306
Phode International ............................... .806
Poultry Protein & Fat Council ................... .206
Poultry Science Association (PSA) ............... .805
Prince Agri Products. ............................. .606
Probiotech International, Inc ..................... .707
Saf Agri/Lesaffre Feed Additives ................. .402
Sigma Xi ............................................. .203
Soybean Meal Information Center ................ .415
SoyBest ............................................ .717,816
SoyPLUS, SoyChlor (West Central) .............. .610
Unity Scientific, Inc ............................. .407
USDA–Animal Welfare Information Center ....... .505
Varied Industries Corporation ................. .501,503,600,602
Virtus Nutrition ................................... .417
Western Yeast Company ......................... .512
Wiley-Blackwell ................................... .201
Zinpro .............................................. .101,200

A special thank you to our
2010 ADSA®-PSA-AMPA-CSAS-WSASAS-ASAS
Joint Meeting Exhibitors!

16
AAALAC
5283 Corporate Dr Ste 203
Frederick, MD 21703-2879
http://www.aaalac.org
Booth(s): 406

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 800 institutions in 32 countries have earned AAALAC accreditation.

Acadian Agritech
30 Brown Avenue
Dartmouth, NS B3B1X8, Canada
Phone: (902) 468-2840; Fax: (902) 468-3474
http://www.tasco.ca
Booth(s): 715

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
Phone: (678) 339-1502; Fax: (678) 339-1602
http://www.adisseo.com/
Booth(s): 801, 803, 900, 902

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
Omaha, NE 68103-2047
Phone: (402) 492-3309; Fax: (402) 496-6686
http://www.amino-plus.com
Booth(s): 413

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
Phone: (859) 887-3245; Fax: (859) 887-3256
http://www.alltech.com
Booth(s): 315, 317, 414, 416

For more than 25 years, Alltech has been researching and providing all-natural nutritional solutions that benefit animal health, performance, and productivity. Alltech's cutting-edge brands—Yea-Sacc 1026, Sel-Plex, Bio-Mos, MTB-100, Bioplex, and Sil-All—set a unique example of how all-natural technologies backed by dedicated research can move the industry forward.

Aloka Ultrasound
10 Fairfield Blvd
Wallingford, CT 06492-5903
Phone: (203) 269-5088 x228; Fax: (203) 269-6075
http://www.alokavet.com
Booth(s): 607

Aloka, the innovator in ultrasound, offers a full line of veterinary ultrasound systems. The Alpha 10 and Alpha 5 offer superb image quality for the most challenging cases. More cost effective solutions are the SSD-3500 and SSD-4000. Our two portables, the SSD-500 and SSD-900, are reliable and rugged systems.

Alternative Design Mfg.
PO Box 6330
Siloam Springs, AR 72761-6330
Phone: (479) 524-4343; Fax: (479) 524-4125
Booth(s): 510

Alternative Design Manufacturing designs and manufactures poultry caging systems for poultry science and commercial enterprises. Caging units include start grow, brooders, laying hen, artificial insemination, and feed conversion housing systems. Caging is made from either PVC coated wire or stainless steel wire mesh.

American Dairy Science Association (ADSA)
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.adsa.org
Booth(s): 604

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 Society of Animal Science (ASAS)
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.asas.org
Booth(s): 700

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.

Analab
PO Box 208
Fulton, IL 61252-0208
Phone: (815) 589-2525; Fax: (815) 589-4568
http://www.analabtest.com
Booth(s): 404

Analab is a premier state-of-the-art laboratory and research facility operated by an innovative, pioneering team of professional chemists and microbiologists.

Ankom Technology
2052 O’Neil Rd
Macedon, NY 14502-8953
Phone: (315) 986-8090; Fax: (315) 986-8091
http://www.ankom.com
Booth(s): 410

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
Phone: (609) 279-7335; Fax: (609) 497-7176
http://www.AHDairy.com
Booth(s): 207

Arm & Hammer Animal Nutrition is a leading supplier of dairy feed ingredients that work to improve producer profitability. We’ve 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.

ARPAS
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-5390; Fax: (217) 398-4119
http://www.arpas.org
Booth(s): 514

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.

ASAS Foundation
2441 Village Green Place
Champaign, IL 61822
Phone: (217) 356-9050; Fax: (217) 398-4119
Booth(s): 702

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.

Asociación Mexicana de Producción Animal (AMPA)
Booth(s): 814

AMPA is a scientific, non-governmental, and non-profit organization; its members include researchers, students, and producers.

A-Tech Global (an MES Company)
5757 W Century Blvd, Ste 805
Los Angeles, CA 90045-6409
Phone: (818) 917-1074; Fax: (323) 935-1221
http://www.a-tech-america.com
Booth(s): 601, 603

A-Tech Global presents our line of automated sperm quality analyzers for studs, bovine veterinarians, and dairymen. The systems precisely calculate post thaw progressive motility for high-fertility dosing, sperm concentration, and morphology.
Balchem
PO Box 600
52 Sunrise Park
New Hampton, NY 10958-0600
Phone: (845) 326-5600; Fax: (845) 326-5742
http://www.balchem.com
Booth(s): 507

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.

Biomin
1846 Lockhill Selma Rd, Ste 101
San Antonio, TX 78213-1551
Phone: (210) 342-9555; Fax: (210) 342-9575
Booth(s): 706

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. Their top brands are Biofix Plus and Biofix Select.

Buchi Corporation
19 Lukens Dr, Ste 400
New Castle, DE 19720-2787
http://www.mybuchi.com
Booth(s): 506

Dedicated to reliability, automation and safety, products include Evaporation systems, Syncore synthesis systems, Spray drying, Spray chilling, Melting point systems, Flash and Preparative Chromatography, Soxhlet extractors, Automated Kjeldahl systems and FT-NIR systems as well as a range of Support Solutions from Method development, Application support and direct Buchi® Service Department.

CABI Publishing
22883 Quicksilver Dr
Sterling, VA 20166-2019
Phone: (703) 996-1012
http://www.cabi.org
Booth(s): 703

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.

CABI Publishing
Nosworthy Way
Wallingford, Oxfordshire OX10 8DE, United Kingdom
Phone: +44 1491829376
http://www.cabi.org
Booth(s): 705

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): 701

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.

Chr. Hansen
9015 W Maple St
Milwaukee, WI 53214-4213
Phone: (414) 607-5739; Fax: (414) 607-5704
http://www.chr-hansen.com
Booth(s): 301, 303

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.

C-Lock Inc.
2525 West Main St.
Rapid City, SD 57702
Phone: (605) 791-5657
http://c-lockinc.com
Booth(s): 812

GreenFeed is a low-cost (patent pending) system to measure CH4 and CO2 emissions from ruminants remotely in a non-intrusive way. CH4 and CO2 data collected several times daily provides valuable feedback on the performance of individual animals and can aid in maintaining animal health and in maximizing feed efficiency.
Cumberland Valley Analytical Services
14515 Industry Dr
Hagerstown, MD 21742-2410
Phone: (301) 790-1980; Fax: (301) 790-1981
http://www.foragelab.com
Booth(s): 311

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
Phone: (919) 661-3100; Fax: (919) 661-3145
http://www.drms.org
Booth(s): 210

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.

Dalex Livestock Solutions LLC
240 Industrial Blvd
Waconia, MN 55387-1734
Phone: (952) 442-4251 Ext. 158; Fax: (952) 831-4251
http://www.dalex.com
Booth(s): 212

Dalex Livestock Solutions LLC is the leading provider of ration formulation software and related livestock solutions. Current programs include The Consulting Nutritionist, Dairy Record Manager, Feed Tag and Beef Profit Projection. Dalex has provided a complete solution to formulate, analyze and monitor livestock feeding situations since 1980.

Diamond V Mills
838 1st St NW
Cedar Rapids, IA 52405-2713
Phone: (563) 880-4343; Fax: (319) 366-6333
http://www.diamondv.com
Booth(s): 515, 517, 614, 616

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 because the Diamond V investment and commitment is real. Diamond V’s innovative brands—Original family (Original XPC, XP and YC), DiaMune Se, SelenoSource and DV Aqua—are research proven and engineered to deliver results.

Distillers Grains Technology Council
435 Lutz Hall
University of Louisville
Louisville, KY 40292-0001
Phone: (502) 852-1575; Fax: (502) 852-1577
http://www.distillersgrains.org
Booth(s): 313

Distillers Grains Technology Council (DGTC) is a nonprofit association of fuel and beverage ethanol and distillers grains producers that was established in 1945. At the DGTC exhibit booth we will have information on feeding wet and dry distillers grains to dairy and beef cattle, calves, sheep, goats, poultry, and horses and combining it with other feed ingredients to reduce corn usage and costs. Stop by and let’s talk about the rapidly growing availability of distillers grain and its feed value.

DSM Nutritional Products
45 Waterview Blvd
Parsippany, NJ 07054-7611
Fax: 973-257-8653
http://unlimitednutrition-na.dsm.com
Booth(s): 807

DSM Nutritional Products is the leading supplier of vitamins, carotenoids, enzymes, and direct-fed microbials to the animal feed industry. With its extensive network of premix plants, DSM Nutritional Products is optimally poised to deliver these essential micronutrients as straight ingredients or through ROVIMIX premix.

EAAP
Via G. Tomassetti 3 A/1
I-00161 Rome, Italy
Phone: +39 06 44202639; Fax: + 39 06 44266798
http://www.eaap.org; http://www.waap.it

EAAP is a federation of national member organizations and has now, together with ASAS, established individual membership so that scientists not resident in EAAP countries can participate and sustain EAAP and ASAS activities jointly. Any scientist having interest in animal science or animal industry and wishing to participate in EAAP and ASAS activities can jointly apply for individual membership to both organizations at a lower price (and receive electronic access to Animal and the Journal of Animal Science).

www.eaap.org or www.eaap.org/Content/Individual_Member_Information.html
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), official journal of the American Dairy Science Association®. Please visit the Elsevier stand in the exhibition hall with any questions you might have about claiming member access on the new JDS website (www.journalofdairyscience.org) and to browse our other journal titles in animal science.

Estrotect
PO Box 39
Spring Valley, WI 54767-0039
Phone: (952) 892-0291; Fax: (715) 778-5817
http://www.estrotect.com
Booth(s): 216

Estrotect Heat Detectors are a unique breeding management tool for artificial insemination, embryo transfer recipient management and natural breeding programs. The simple scratch-off surface show evidence of multiple mountings which give reliable indications of estrus and increase breeding success in many programs. Estrotect detectors have been used successfully in all the major agricultural countries, in all kinds of environments around the world with great success. Estrotect continues to provide “mounting evidence” for breeding success.

Evonik Degussa Corp
1701 Barrett Lakes Blvd NW Ste 340
Kennesaw, GA 30144-4509
Phone: (678) 797-4311; Fax: (678) 797-4313
http://www.aminoacidsandmore.com
Booth(s): 305, 307

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.

FDA–Center for Veterinary Medicine
7519 Standish Pl
Rockville, MD 20855-2792
Phone: (301) 827-3800; Fax: (301) 827-4065
http://www.fda.gov/animalveterinary/default.htm
Booth(s): 713

The Center for Veterinary Medicine (CVM) regulates the manufacture and distribution of food additives and drugs that will be given to animals from which human foods are derived, as well as food additives and drugs for pet (or companion) animals. CVM is responsible for regulating drugs, devices, and food additives given to, or used on, over one hundred million companion animals, plus millions of poultry, cattle, swine, and minor animal species. (Minor animal species include animals other than cattle, swine, chickens, turkeys, horses, dogs, and cats.)

Feed Management Systems
6120 Earle Brown Dr Ste 300
Brooklyn Center, MN 55430-4101
Phone: (763) 560-8139
http://www.feedsys.com
Booth(s): 411

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: Feed Mill Manager, Brill Formulation, Feed Ration Balancer, Feed Tags.

FeedAC
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 398-4697; Fax: (217) 398-4119
http://www.feedac.org
Booth(s): 802

The Feed Analysis Consortium Inc. (FeedAC) is a membership-based nonprofit organization dedicated to the advancement of feed analysis and nutritional modeling. The mission of FeedAC is to serve the animal feed industry by developing improved methods of feed analysis, providing leadership for methods standardization, and building and maintaining a comprehensive and evolving database of feed analysis information for all farm animals. Upon request from its membership, the organization has also committed to providing leadership to standardizing electronic data exchange. The organization also continues to develop collaborations with other organizations to achieve its goals. Be sure to attend this year’s annual meeting and stop by the exhibitor booth to get an update on FeedAC activities and to find out how you can get involved!
Feedstuffs
12400 Whitewater Dr, Ste 160
Minnetonka, MN 55343-4158
Phone: (952) 930-4349; Fax: (952) 938-1832
Booth(s): 304

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.

GTC Nutrition
600 Corporate Cir, Ste H
Golden, CO 80401-5604
Phone: (303) 951-6520; Fax: (303) 951-6520
http://fortifeed.com
Booth(s): 202

GTC Nutrition, a business unit of Corn Products International Inc., is a recognized leader in providing innovative ingredients along with scientific, technical and marketing expertise to the animal feed, food process, and dietary supplement industries. GTC Nutrition’s flagship animal feed ingredient, FortiFeed prebiotic fiber, selectively stimulates the growth of beneficial microflora in the intestines of animals to improve overall well-being and performance. GTC Nutrition promotes animal and human health globally with innovative functional food ingredients and unsurpassed customer support. For more information, visit www.fortifeed.com.

H.J. Baker & Bro. Inc.
228 Saugatuck Ave, Ste 1
Westport, CT 06880-6444
Phone: (203) 682-9200; Fax: (203) 227-8351
http://www.bakerbro.com
Booth(s): 516

Pro-Lak Dairy By-Pass Protein is designed to complement the protein from rumen microbial activity and formulated for today’s high producing dairy cows. Desired nutrient balance is accomplished by 72% of protein bypassing rumen degradation and delivering the essential amino acid profile to support maximum milk production. For university research and more information see www.bakerbro.com.

Ice Robotics Limited
Logan Bldg Roslin Biocentre
Roslin, Scotland, United Kingdom
Phone: +44 131 527 4380; Fax: +44 131 527 4381
http://www.icerobotics.com
Booth(s): 915, 917

IceRobotics is developer and sole supplier of the IceTag livestock activity monitoring system, which has been specifically designed to facilitate both small and large research projects in dairy cattle health and welfare. This system has now been extended to include automated farm download and remote data access through theCattleGrid.com, a new online data management tool.

International Ingredient Corp.
150 Larkin Williams Ind Ct
Fenton, MO 63026-2409
Phone: (636) 343-4111, x1252; Fax: (636) 349-4845
http://www.iicag.com
Booth(s): 401

International Ingredient Corporation is a manufacturer of specialty ingredients for swine, pets, dairy cattle, aquaculture and poultry. IIC has nine plant locations producing quality ingredients, including Dairylac 80, Nutri-Gold Dried Milk, Brewtech Brewers Yeast, Dried Cheese Products, Dried Bacon Fat, Nutri-Sure, Milk Chocolate Product, Sugar Food Products, and GroBiotic prebiotics.

Jefo Nutrition Inc.
5020 Jefo Avenue - C.P. 325
St-Hyacinthe, Québec, J2S 7B6, Canada
Phone: (450) 799-2000; Fax: (450) 778-1338
Booth(s): 205

Jefo Nutrition is a world leader in performance feed additives. Species-specific by design, Jefo performance additives are respectful of nature and increase livestock production economic performance. Since the company was founded, all efforts have been focused to understand and contribute to improving the science, economics, and techniques of agriculture, with the greatest respect for the environment and sustainable development. Our products are top quality and represent an additional advantage in a nutritional program without growth factor antibiotics. Our facilities, processes, and know-how ensure effective and robust products that can withstand the strictest standards and harshest conditions of feed manufacturing. Our products are designed to improve livestock production techniques and increase animal performance, with evidence to prove it.

Johne’s Disease Integrated Program (JDIP)
The Pennsylvania State University
Department of Veterinary and Biomedical Sciences
205 Wartik Laboratory
University Park, PA 16802
Phone: 814-867-0261
Fax: 814-863-6699
http://www.jdip.org/
Booth(s): 204

The Johne’s Disease Integrated Program (JDIP) is a consortium of scientists, whose mission is to promote animal bio-security through the development and support of projects designed to enhance knowledge, promote education, and develop real-world solutions to mitigate losses associated with Johne’s disease. JDIP is funded by a grant from the USDA-NIFA.
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 Thomson-Reuters’ 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.

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National Animal Health Monitoring System (NAHMS)
2150 Centre Ave Bldg B-2E7
USDA:APHIS:VS:CEAH
Fort Collins, CO 80526-8116
Phone: (970) 494-7245; Fax: (970) 494-7228
http://nahms.aphis.usda.gov
Booth(s): 804

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

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Booth(s): 300, 302

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Booth(s): 806

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The Poultry Protein and 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.

Poultry Science Association (PSA)
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-5285; Fax: (217) 398-4119
http://www.poultryscience.org
Booth(s): 805

The Poultry Science Association (PSA) is a global society consisting of approximately 2,400 educators, scientists, extension specialists, administrators, and producers committed to advancing the poultry industry. The association is dedicated to discovery and dissemination of knowledge generated by poultry research that enhances human and animal health and well-being and provides for the ethical and sustainable production of food. Since 1908, the PSA has maintained a level of prestige that ranks it among the top professional organizations in the field. Please visit www.poultryscience.org for more information.

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http://www.princeagri.com
Booth(s): 606

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http://www.probiotech.com
Booth(s): 707

Probiotech International Inc. develops and provides the animal nutrition industry with natural solutions. The line of products was designed using the principles of biotechnology to promote animal health and to maximize agriculture production with respect for our environment in mind. Products range from patented rumen-protected choline for dairy cows to organic acidifiers and plant extracts for swine and poultry.
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http://www.sigmaxi.org
Booth(s): 203

Sigma Xi is an international, multidisciplinary research society that promotes the health of the scientific enterprise and honors scientific achievement. The Society endeavors to encourage support of original work across the spectrum of science and technology and to promote an appreciation within society at large for the role research has played in human progress. Sigma Xi publishes American Scientist magazine, awards grants annually to promising student researchers, and sponsors programs that serve science and society. Programmatic interests include research ethics, science and engineering education, public understanding of science, international research networking, and the overall health of the research enterprise.

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http://www.unityscientific.com
Booth(s): 407

Unity Scientific is a global leader in the design and manufacturing of near infrared instrumentation for a variety of industries and applications. Unity has introduced the new SpectraStar RTW series that offers a top window presentation of samples in either a rotating platter or static mode of analysis. The system also has extreme sample flexibility by using existing sample cups from other brand units, petri dishes, beakers or even plastic bags. The SpectraStar RTW is ideal for the analysis of feeds and forages—Unity can easily transfer existing databases in just a matter of minutes.

USDA–Animal Welfare Information Center
10301 Baltimore Ave Rm 410
Beltsville, MD 20705-2326
http://www.nal.usda.gov
Booth(s): 505

The USDA is mandated by the Animal Welfare Act to provide information for the improved care and use of animals used in research, testing, teaching, and exhibition. Staff at the Animal Welfare Information Center provide a variety of topical publications, literature searches, and training opportunities.
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Booth(s): 417

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Booth(s): 512

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1. Comfort Inn Downtown
2. Crowne Plaza
3. Denver Marriott City Center
4. Grand Hyatt Denver
5. Hilton Garden Inn
6. Hyatt Regency Denver at CCC
7. Residence Inn by Marriott

A. U.S. Mint
B. Denver City & County Building
C. Civic Center Park
D. Denver Art Museum
E. Denver Public Library
F. Colorado History Museum
G. Colorado State Capitol Building
H. VISIT DENVER Information Center
I. Cherry Creek Shopping
Exhibit Hall Floor Plan

Refer to page 16 for the Guide to Exhibitors
Hyatt Regency at the Colorado Convention Center
(ASAS Headquarter Hotel)

Third Level
Crowne Plaza Denver
(PSA Headquarter Hotel)
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- Pacific Vet Group
- Quality Technology International
Schedule of Events

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

Friday, July 9

Noon – 2:00 pm  PSA Finance Committee Meeting  ...........................................  Crowne Plaza, Park
2:00 pm – 6:00 pm  PSA Board of Directors Meeting  .......................................  Crowne Plaza, Concierge Lounge

Saturday, July 10

7:30 am – 5:00 pm  ADSA Board of Directors Meeting  .....................................  Grand Hyatt, Maroon Peak
8:00 am – 4:00 pm  PSA Board of Directors Meeting  .......................................  Crowne Plaza, Concierge Lounge
12:00 pm – 4:00 pm  Student White Water Rafting Trip  .....................................  Meet in Comfort Inn lobby
1:00 pm – 2:30 pm  ASAS New Board Orientation  ............................................  Convention Center, 712
3:00 pm – 5:00 pm  ARPAS Board of Directors Meeting  ...................................  Grand Hyatt, Mt. Princeton
3:00 pm – 5:00 pm  Registration Open (preregistered, badge and material pick-up only)  ...........................................  Convention Center, 1st Level lobby, outside Exhibit Hall F
3:30 pm – 9:00 pm  ASAS Board of Directors Meeting  .....................................  Convention Center, 712
5:30 pm – 8:00 pm  Student Informal Mixer: Cowboy Lounge  .............................  Meet in the Comfort Inn lobby
7:30 pm – 9:00 pm  ARPAS Executive Committee Meeting  .............................  Grand Hyatt, Torrey Peak

Sunday, July 11

7:00 am – 7:00 pm  Registration Open  .........................................................  Convention Center, 1st Level lobby, outside Exhibit Hall F
7:00 am – 8:00 am  ASAS Membership Committee Meeting  .............................  Convention Center, 712
7:30 am – 10:00 am  ADSA New Board Orientation  .........................................  Grand Hyatt, Mt. Harvard
8:00 am – 12:00 pm  PSA Board of Directors Meeting  .......................................  Crowne Plaza, Concierge Lounge
8:00 am – 5:00 pm  ARPAS Governing Board Meeting  ....................................  Grand Hyatt, Mt. Princeton
8:00 am – 5:00 pm  Triennial Growth Symposium  .............................................  Convention Center, 303
8:30 am – 12:30 pm  ADSA Board of Directors Meeting  .....................................  Convention Center, 712
9:00 am – 5:00 pm  WSASAS Student Competition  ..........................................  Convention Center, 401/402
9:30 am – 12:00 pm  National Extension Workshop  ..........................................  Convention Center, 304
10:00 am – 6:00 pm  Exhibit Setup  .................................................................  Convention Center, Exhibit Hall F
10:00 am – 6:00 pm  Student Dairy Clubs Exhibit Setup  ....................................  Convention Center, Exhibit Hall F
10:00 am – 11:00 am  ADSA-SAD Officers and Advisor Meeting  ....................  Convention Center, 705
11:00 am – 12:00 pm  ADSA-SAD Quiz Bowl Officials Meeting  .......................  Convention Center, 705
11:30 am – 12:00 pm  ADSA-SAD Quiz Bowl Seating Test  ...............................  Convention Center, 707
11:30 am – 12:30 pm  Open Meeting: Becoming an ADSA Volunteer Leader  ....  Grand Hyatt, Maroon Peak
12:00 pm – 1:00 pm  National Extension Workshop Lunch  .............................  Crowne Plaza, Office
12:00 pm – 1:00 pm  ADSA-SAD Midday Mixer and Pizza Party  .......................  Convention Center, 704/706
12:00 pm – 1:00 pm  JDS Editors and Journal Management Committee Luncheon  .................................  Grand Hyatt, Mt. Oxford
12:00 pm – 5:00 pm  Hospitality Lounge Open  ...............................................  Convention Center, 709
1:00 pm – 3:00 pm  2010 and 2011 Program Committee Meeting  ....................  Convention Center, 405
1:00 pm – 5:00 pm  Dallex User Training  .........................................................  Denver Marriott, Ballroom
1:00 pm – 5:00 pm  Informal Nutrition Symposium  ..........................................  Convention Center, Korbel Ballroom 1abc
1:00 pm – 5:00 pm  ADSA Journal Management Committee Meeting  ...............  Grand Hyatt, Mt. Oxford
1:00 pm – 5:00 pm  ADSA-SAD Dairy Quiz Bowl Seating/Preliminary Rounds  ....  Convention Center, 705 and 707
1:00 pm – 6:00 pm  CSAS Executive Committee Meeting  ..................................  Denver Marriott, Matchless
1:00 pm – 6:00 pm  Johne’s Disease Integrated Program (JDIP) Workshop  .......  Grand Hyatt, Mt. Sopris
2:00 pm – 3:00 pm  ADSA Production Division Council Meeting  ....................  Convention Center, 501
2:00 pm – 4:00 pm  ADSA Foundation Board of Trustees Meeting  ..................  Grand Hyatt, Mt. Princeton
3:00 pm – 4:00 pm  ADSA Production Division Nominating Committee  .............  Convention Center, 501
3:00 pm – 5:00 pm  Late-Breaking Original Research Session  Convention Center, 304
5:00 pm – 6:00 pm  ADSA Dairy Foods Division Council Meeting  Convention Center, 712
5:30 pm – 6:00 pm  ADSA-SAD Dairy Quiz Bowl Final Round  Convention Center, 705
7:00 pm – 8:00 pm  2010 Joint Annual Meeting Opening Session  Wells Fargo Theater
8:00 pm – 10:00 pm  2010 Joint Annual Meeting Opening Reception  Korbel Ballroom

Monday, July 12

6:30 am – 5:15 pm  Registration Open  Convention Center, 1st Level lobby, outside Exhibit Hall F
6:30 am – 8:00 am  ADSA Production Division Extension Breakfast  Grand Hyatt, Longs Peak
7:00 am – 8:15 am  ADSA-SAD Exhibit Setup  Convention Center, Exhibit Hall F
7:30 am – 9:30 am  Poster Presentations  Convention Center, Exhibit Hall F
7:30 am – 11:00 am  WSASAS Executive Meeting  Convention Center, 711
8:00 am – 5:00 pm  Commercial Exhibits and ADSA-SAD Exhibits Open  Convention Center, Exhibit Hall F
8:00 am – 5:00 pm  Job Resource Center  Convention Center, Exhibit Hall F
8:00 am – 5:00 pm  Hospitality Lounge Open  Convention Center, 709
8:30 am – 9:15 am  ADSA-SAD Business Meeting  Convention Center, 705, 707
9:30 am – 10:30 am  ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports  Convention Center, 704
9:30 am – 10:30 am  ADSA-SAD Interviews for Outstanding Student and Advisor Awards  Convention Center, 706
9:30 am – 10:45 am  ADSA-SAD Activities Symposium  Convention Center, 705
9:30 am – 5:00 pm  Scientific Sessions  Convention Center
10:30 am – 12:30 pm  ARPAS Exam  Convention Center, 701
11:00 am – 5:00 pm  ADSA-SAD Undergraduate Paper Presentations  Convention Center, 705, 707
12:30 pm – 1:30 pm  ASAS Graduate Student Open Forum  Hyatt Regency, Mineral Hall B–C
12:30 pm – 2:00 pm  ASAS Past Presidents’ Luncheon  Crowne Plaza, Library
12:30 pm – 2:00 pm  ADSA Past Presidents’ Luncheon  Grand Hyatt, Longs Peak
12:30 pm – 2:00 pm  American College of Animal Sciences (ACAS) Annual Meeting  Convention Center, 701
12:30 pm – 2:00 pm  PS and JAPR Editorial Lunch and Meeting  Crowne Plaza, Library
12:30 pm – 2:00 pm  National Poultry Extension Lunch  Crowne Plaza, Office
12:30 pm – 2:00 pm  PSA Past Presidents’ Luncheon  Crowne Plaza, Park
2:00 pm – 3:00 pm  Discover Conference Steering Committee Meeting  Convention Center, 711
2:00 pm – 4:00 pm  ARPAS Exam  Convention Center, 701
2:00 pm – 5:30 pm  Southern Branch ADSA Symposium and Business Meeting  Convention Center, Korbel Ballroom 3a
4:00 pm – 6:00 pm  Exhibitor Reception  Convention Center, Exhibit Hall F
5:00 pm – 6:00 pm  Presentation by Dr. Roger Beachy, NIFA  Convention Center, 403/404
5:00 pm – 6:00 pm  USDA-ARS Staff Update Session  Convention Center, 507
5:00 pm – 7:00 pm  Companion Animal Reception  Convention Center, 702
5:30 pm – 7:00 pm  ASAS Award Winners Dinner and Photo Session  Hyatt Regency, Mineral Hall A
5:30 pm – 7:30 pm  Informal Calf Gathering  Grand Hyatt, Mt. Sopris
6:00 pm – 8:00 pm  Student Informal Mixer: Lucky Strikes Lanes and Lounge  Meet in the Comfort Inn lobby
7:00 pm  Texas A&M (TAMU) Aggie “Breakfast”  Crowne Plaza, Library
7:00 pm – 8:30 pm  ASAS Awards Program  Hyatt Regency, Mineral Hall A
8:00 pm – 11:00 pm  Iowa State Reception  Blake Street Vault, LoDo Denver
9:00 pm  Graduate Student Mixer  Blake Street Vault, LoDo Denver
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<td>6:30 am – 8:00 am</td>
<td>Penn State Breakfast</td>
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<td>6:30 am – 8:00 am</td>
<td>University of Illinois Breakfast</td>
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<td>JDS Editorial Board Breakfast/Meeting</td>
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<td>6:30 am – 8:00 am</td>
<td>PSA Foundation Breakfast</td>
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<td>6:30 am – 8:00 am</td>
<td>National Poultry Waste Management Breakfast</td>
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<td>7:30 am – 8:30 am</td>
<td>Biomin America Inc. Breakfast Meeting</td>
<td>Hyatt Regency, Mineral Hall E</td>
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<td>8:00 am – 9:00 am</td>
<td>ASAS Investment Committee Meeting</td>
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<td>Hospitality Lounge Open</td>
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<td>8:00 am – 5:00 pm</td>
<td>Commercial Exhibits and ADSA-SAD Exhibits Open</td>
<td>Convention Center, Exhibit Hall F</td>
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<td>8:00 am – 9:00 am</td>
<td>Job Resource Center</td>
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<td>8:30 am – 9:30 am</td>
<td>ADSA-SAD Business Meeting–Election of Officers</td>
<td>Convention Center, 705</td>
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<td>9:00 am – 1:00 pm</td>
<td>Spouse Event 1</td>
<td>Meet at Hyatt Regency</td>
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<td>9:30 am – 11:00 am</td>
<td>ADSA-SAD Student Career Roundtable</td>
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<td>9:30 am – 11:30 am</td>
<td>ASAS Foundation Board of Trustees Meeting</td>
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<td>11:00 am – 12:00 pm</td>
<td>Michigan State University Luncheon</td>
<td>Convention Center, 709</td>
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<tr>
<td>11:30 am – 12:00 pm</td>
<td>Michigan State University Luncheon</td>
<td>Convention Center, 709</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>Michigan State University Luncheon</td>
<td>Convention Center, 709</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>CSAS Annual General Meeting</td>
<td>Denver Marriott, Mattie Silks</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>WPSA-USA Member Luncheon</td>
<td>Crowne Plaza, Office</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS Editors’ Luncheon</td>
<td>Hyatt Regency, Mineral Hall A</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>WSASAS Awards Luncheon</td>
<td>Convention Center, 708/710/712</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS Foundation Emeritus/Retiree Lunch</td>
<td>Convention Center, 709</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA DF Division Milk Proteins and Enzyme Committee</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ARPAS Business Meeting</td>
<td>Convention Center, 301/302</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>American Poultry Historical Society Luncheon</td>
<td>Crowne Plaza, Altitude</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA DF Division Program Planning Lunch</td>
<td>Convention Center, 701</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS GS Lunch and Learn</td>
<td>Convention Center, 703</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>PSA Student Luncheon</td>
<td>Crowne Plaza, Library &amp; Museum</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>NE ASAS/ADSA Business Meeting &amp; Awards Luncheon</td>
<td>Convention Center, 711</td>
</tr>
<tr>
<td>2:00 pm – 3:00 pm</td>
<td>ADSA-SAD Award and Club Photos</td>
<td>Convention Center, 704</td>
</tr>
<tr>
<td>2:00 pm – 4:00 pm</td>
<td>ARPAS Exam</td>
<td>Convention Center, 701</td>
</tr>
<tr>
<td>2:30 pm – 3:30 pm</td>
<td>ADSA-SAD Committee Meeting–Old and New Officers and Advisors</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>3:00 pm – 5:00 pm</td>
<td>Hospitality Lounge Open</td>
<td>Convention Center, 709</td>
</tr>
<tr>
<td>3:30 pm – 4:30 pm</td>
<td>ASAS JAS Forum (Division/Associate Editors and Authors)</td>
<td>Convention Center, 707</td>
</tr>
<tr>
<td>4:30 pm – 5:00 pm</td>
<td>The ASAS Open Forum</td>
<td>Convention Center, 405</td>
</tr>
<tr>
<td>5:00 pm – 6:00 pm</td>
<td>FASS Update</td>
<td>Convention Center, 507</td>
</tr>
<tr>
<td>5:00 pm – 9:00 pm</td>
<td>CJAS Editorial Board Meeting</td>
<td>Denver Marriott, Matchless</td>
</tr>
<tr>
<td>5:00 pm – 6:30 pm</td>
<td>ADSA Award Donor Dinner</td>
<td>Grand Hyatt, Mt. Sopris</td>
</tr>
<tr>
<td>5:00 pm</td>
<td>Evonik Degussa Reception (invited guests)</td>
<td>Hyatt Regency, Capital Ballroom</td>
</tr>
<tr>
<td>7:00 pm – 8:00 pm</td>
<td>ADSA Awards Program</td>
<td>Grand Hyatt, Grand Ballroom</td>
</tr>
<tr>
<td>8:15 pm – 9:30 pm</td>
<td>ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Ice Cream Social</td>
<td>Grand Hyatt, Imperial Ballroom</td>
</tr>
<tr>
<td>9:15 pm</td>
<td>PSA/WPSA-USA-Canada Student Mixer: Blake St. Vault</td>
<td>Meet in Crowne Plaza lobby</td>
</tr>
</tbody>
</table>
Wednesday, July 14

6:30 am – 5:15 pm  
Registration Open  
Convention Center, 1st Level lobby, outside Exhibit Hall F

6:30 am – 7:30 am  
ASAS-PSA Joint Executive Committee Meeting  
Convention Center, 711

6:30 am – 8:00 am  
Purdue University Breakfast  
Hyatt Regency, Mineral Hall A

7:30 am – 9:00 am  
WSASAS Annual Business Meeting  
Convention Center, 304

7:30 am – 9:30 am  
S-PAC Conference Coordinators Meeting  
Convention Center, 303

7:30 am – 9:30 am  
Poster Presentations  
Convention Center, Exhibit Hall F

8:00 am – 2:00 pm  
Commercial Exhibits Open  
Convention Center, Exhibit Hall F

8:00 am – 5:00 pm  
Job Resource Center  
Convention Center, Exhibit Hall F

8:00 am – 5:00 pm  
Hospitality Lounge Open  
Convention Center, 709

9:30 am – 10:30 am  
WPSA Lecture  
Korbel Ballroom 1cd

9:30 am – 10:30 am  
ASAS Business Meeting  
Convention Center, 401/402

9:30 am – 10:30 am  
ADSA Annual Business Meeting and Open Forum  
Convention Center, 403/404

10:00 am – 1:00 pm  
Spouse Event 2  
Meet at Convention Center

10:30 am – 12:30 pm  
PSA Business Meeting  
Korbel Ballroom 1cd

10:30 am – 5:00 pm  
Scientific Sessions  
Convention Center

11:30 am – 12:30 pm  
ADSA-ASAS Joint Executive Committee Meeting  
Convention Center, 711

12:30 pm – 2:00 pm  
WSASAS Executive Post Conference Meeting  
Convention Center, 709

12:30 pm – 2:30 pm  
Feed Analysis Consortium Annual Meeting  
Convention Center 705

12:30 pm – 2:30 pm  
ADSA Board of Directors Meeting  
Grand Hyatt, Maroon Peak

12:30 pm – 2:00 pm  
PSA New Board Luncheon  
Crowne Plaza, Park

2:00 pm – 4:00 pm  
ARPA Exam  
Convention Center, 701

2:00 pm – 5:00 pm  
Commercial Exhibits Dismantle  
Convention Center, Exhibit Hall F

2:30 pm – 4:30 pm  
ASAS Board of Directors Meeting  
Hyatt Regency, Mineral Hall B–C

3:00 pm – 5:00 pm  
Hospitality Lounge Open  
Convention Center, 709

3:00 pm – 8:00 pm  
National Swine Nutrition Guide Training Conference  
Hyatt Regency, Mineral Hall F–G

4:00 pm – 5:00 pm  
AMPA Business Meeting  
Convention Center, 705

4:30 pm – 5:30 pm  
2010 Global Networking Reception  
Korbel Ballroom 4abc

4:30 pm – 6:00 pm  
Johnne’s Disease Interest Group  
Convention Center, 711

6:00 pm – 8:30 pm  
CSAS Awards Banquet  
Denver Marriott, Ballroom Suites I–III

6:00 pm – 10:00 pm  
PSA Awards Banquet  
Four Seasons 1&2

6:30 pm – 10:30 pm  
AMPA Dinner  
Convention Center, 708/710/712

Thursday, July 15

7:30 am – 8:30 am  
ADSA-ASAS-PSA Joint Executive Committee Meeting  
Convention Center, 303

8:00 am – 1:00 pm  
Registration Open  
Convention Center, 1st Level lobby, outside Exhibit Hall F

8:30 am – 11:30 am  
Scientific Sessions  
Convention Center

1:00 pm – 5:00 pm  
NIFA NRI/AFRI Animal Growth & Nutrient Utilization PD Meeting  
Hyatt Regency, Mineral Hall A

7:00 pm – 9:00 pm  
NIFA NRI/AFRI Animal Growth & Nutrient Utilization PD Reception  
Hyatt Regency, Mineral Hall B–C

Friday, July 16

7:30 am – 1:00 pm  
NIFA NRI/AFRI Animal Growth & Nutrient Utilization PD Meeting  
Hyatt Regency, Mineral Hall A
Saturday, July 10

**Student White Water Rafting Trip on Clear Creek**

12:00 – 4:00 pm  
**Bus departs from the Comfort Inn**

Tickets: $44  
Prepare for the adventure of a lifetime! We’ll do a beginner trip with Class I to III rapids, perfect for first-time paddlers but plenty of action for those seeking it. Participants must complete the necessary liability waivers and should bring rubber-soled foot gear (tennis shoes, river sandals, etc.); swimsuit or shirt and shorts that will dry quickly (nylon, fleece, other synthetics, or wool); sunscreen and lip balm; sunglasses with strap; bandanna or hat; bottled water; and personal necessities. Price includes round-trip transportation, rafting trip, equipment rental, and guide gratuity.

**Student Informal Mixer: Cowboy Lounge**

5:30 pm – 8:00 pm  
Tickets: $18  
Meet in the lobby of the Comfort Inn at 5:30 and we’ll walk as a group down 16th Street Mall to Cowboy Lounge at 1941 Market St. (near Coors Field). Cowboy Lounge is the only country and western bar in downtown Denver offering country and rock music. The atmosphere captures the true Wild West with its western cowboy flair, spacious dance floor, dance lessons, and movie screens. Ticket price includes Backyard Barbecue dinner.

Sunday, July 11

**SAD Midday Mixer and Pizza Party**

12:00 – 1:00 pm  
**Convention Center, 704/706**

Tickets: $5  
Join your fellow dairy club members for a fun hour of getting reacquainted and making new friends. Lunch includes pizza, salad, and beverages. Registration is limited to undergraduate and graduate students and advisors.

**SAD-Dairy Quiz Bowl Final Round**

5:30 – 6:00 pm  
**Convention Center, 705**

On Sunday, university teams from across the US 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 2010 Dairy Quiz Bowl Winning Team.

Monday, July 12

**Student Informal Mixer: Lucky Strike Lanes and Lounge**

6:00 – 8:00 pm  
No ticket required, meet in the lobby of the Comfort Inn to walk as a group.  
Bowling, billiards, fun food, and drinks await at Lucky Strikes Lanes and Lounge on the 16th Street Mall. Enjoy the retro feel and experience the cool vibe. Premium, upscale bowling alleys with lane-side food service including a menu of appetizers, burgers, sandwiches, pizza, finger foods, salads, and desserts.
Tuesday, July 13

**SAD Career Roundtable**
*9:30 – 11:00 am*
**Convention Center, 705**
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 time to visit industry reps in the exhibit hall for information about internships and job opportunities.

**SAD Awards Luncheon**
*11:45 am – 2:00 pm*
**Convention Center, 704/706**
Plan to attend this year’s SAD awards luncheon. The afternoon will be capped with 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.

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**SAD Schedule of Events**
*Scheduling and locations are subject to change without notice. Please check the onsite newsletter each morning for changes.*

**Saturday, July 10**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 pm – 4:00 pm</td>
<td>Student White Water Rafting Trip</td>
<td>Meet in Comfort Inn lobby</td>
</tr>
<tr>
<td>3:00 pm – 5:00 pm</td>
<td>Registration Open</td>
<td>Convention Center, 1st Level lobby,</td>
</tr>
<tr>
<td></td>
<td>(preregistered, badge and material pick-up only)</td>
<td>outside Exhibit Hall F</td>
</tr>
<tr>
<td>5:30 pm – 8:00 pm</td>
<td>Student Informal Mixer: Cowboy Lounge</td>
<td>Meet in the Comfort Inn lobby</td>
</tr>
</tbody>
</table>

**Sunday, July 11**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am – 8:00 pm</td>
<td>Registration Open</td>
<td>Convention Center, 1st Level lobby,</td>
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<tr>
<td></td>
<td></td>
<td>outside Exhibit Hall F</td>
</tr>
<tr>
<td>10:00 am – 6:00 pm</td>
<td>Student Dairy Clubs Exhibits Setup</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>10:00 am – 11:00 am</td>
<td>ADSA-SAD Officers and Advisor Meeting</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>11:00 am – 12:00 pm</td>
<td>ADSA-SAD Quiz Bowl Officials Meeting</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>11:30 am – 12:00 pm</td>
<td>ADSA-SAD Quiz Bowl Seating Test</td>
<td>Convention Center, 707</td>
</tr>
<tr>
<td>12:00 pm – 1:00 pm</td>
<td>ADSA-SAD Midday Mixer and Pizza Party</td>
<td>Convention Center, 704/706</td>
</tr>
<tr>
<td>1:00 pm – 5:00 pm</td>
<td>ADSA-SAD Dairy Quiz Bowl Seating/Preliminary Rounds</td>
<td>Convention Center, 705 and 707</td>
</tr>
<tr>
<td>5:30 pm – 6:00 pm</td>
<td>ADSA-SAD Dairy Quiz Bowl Final Round</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>7:00 pm – 8:00 pm</td>
<td>2010 Joint Annual Meeting Opening Session</td>
<td>Convention Center, Wells Fargo Theater</td>
</tr>
<tr>
<td>8:00 pm – 10:00 pm</td>
<td>2010 Joint Annual Meeting Opening Reception</td>
<td>Convention Center, Korbel Ballroom</td>
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**Monday, July 12**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>6:30 am – 5:15 pm</td>
<td>Registration Open</td>
<td>Convention Center, 1st Level lobby,</td>
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<tr>
<td></td>
<td></td>
<td>outside Exhibit Hall F</td>
</tr>
<tr>
<td>7:00 am – 8:15 am</td>
<td>ADSA-SAD Exhibit Set-Up</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>7:30 am – 9:30 am</td>
<td>Poster Presentations</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Commercial Exhibits and ADSA-SAD Exhibits Open</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>8:30 am – 9:15 am</td>
<td>ADSA-SAD Business Meeting</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>9:30 am – 10:30 am</td>
<td>ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports</td>
<td>Convention Center, 704</td>
</tr>
<tr>
<td>9:30 am – 10:30 am</td>
<td>ADSA-SAD Interviews for Outstanding Student and Advisor Awards</td>
<td>Convention Center, 706</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
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<tr>
<td>9:30 am – 10:45 am</td>
<td>ADSA-SAD Activities Symposium</td>
<td>Convention Center, 705</td>
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<tr>
<td>9:30 am – 5:00 pm</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
</tr>
<tr>
<td>11:00 am – 5:00 pm</td>
<td>ADSA-SAD Undergraduate Paper Presentations</td>
<td>Convention Center, 705, 707</td>
</tr>
<tr>
<td>4:00 pm – 6:00 pm</td>
<td>Exhibitor Reception</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>5:00 pm – 6:00 pm</td>
<td>Presentation by Dr. Roger Beachy, NIFA</td>
<td>Convention Center, 403/404</td>
</tr>
<tr>
<td>6:00 pm – 8:00 pm</td>
<td>Student Informal Mixer: Lucky Strikes Lanes and Lounge</td>
<td>Meet in the Comfort Inn lobby</td>
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**Tuesday, July 13**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 am – 5:15 pm</td>
<td>Registration Open</td>
<td>Convention Center, 1st Level lobby, outside Exhibit Hall F</td>
</tr>
<tr>
<td>7:30 am – 9:30 am</td>
<td>Poster Presentations</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Commercial Exhibits and ADSA-SAD Exhibits Open</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>8:30 am – 9:30 am</td>
<td>ADSA-SAD Student Business Meeting–Election of Officers</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>9:30 am – 5:00 pm</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
</tr>
<tr>
<td>9:30 am – 11:00 am</td>
<td>ADSA-SAD Student Career Roundtable</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>11:45 am – 2:00 pm</td>
<td>ADSA-SAD Awards Luncheon</td>
<td>Convention Center, 704/706</td>
</tr>
<tr>
<td>2:00 pm – 3:00 pm</td>
<td>ADSA-SAD Award and Club Photos</td>
<td>Convention Center, 704</td>
</tr>
<tr>
<td>2:30 pm – 3:30 pm</td>
<td>ADSA-SAD Committee Meeting–Old and New Officers and Advisors</td>
<td>Convention Center, 705</td>
</tr>
<tr>
<td>7:00 pm – 8:00 pm</td>
<td>ADSA Awards Program</td>
<td>Grand Hyatt, Grand Ballroom</td>
</tr>
<tr>
<td>8:15 pm – 9:30 pm</td>
<td>ADSA-PSA-AMPA-CSAS-WSASAS-ASAS Ice Cream Social</td>
<td>Grand Hyatt, Imperial Ballroom</td>
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**Wednesday, July 14**

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<td>8:00 am – 2:00 pm</td>
<td>Commercial Exhibits Open</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>9:30 am – 10:30 am</td>
<td>ADSA Annual Business Meeting and Open Forum</td>
<td>Convention Center, 403/404</td>
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<tr>
<td>10:30 am – 5:00 pm</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
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<tr>
<td>2:00 pm – 5:00 pm</td>
<td>Commercial Exhibits Dismantle</td>
<td>Convention Center, Exhibit Hall F</td>
</tr>
<tr>
<td>4:30 pm – 5:30 pm</td>
<td>2010 Global Networking Reception</td>
<td>Convention Center, Korbel Ballroom</td>
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**Thursday, July 15**

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<tr>
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<td>8:30 am – 11:30 am</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
</tr>
</tbody>
</table>
ADSA Dairy Foods Division
Schedule of Events

Sunday, July 11
5:00 pm – 6:00 pm ADSA Dairy Foods Division Council Meeting, Convention Center, 712

Monday, July 12
7:30 am – 9:30 am Posters: National ADSA Dairy Foods Graduate Student Poster Competition, Convention Center, Exhibit Hall F
7:30 am – 9:30 am Posters: Food Safety I, Convention Center, Exhibit Hall F
9:30 am – 12:30 pm Food Safety: Probiotics, Convention Center, 401/402
11:00 am – 12:15 pm ADSA-SAD Undergraduate Paper Competition: Dairy Foods, Convention Center, 705
2:00 pm – 5:00 pm SYMPOSIUM: Dairy Foods: Microbiology and Flavor of Cheese: Convention Center, Korbel Ballroom 2a
2:00 pm – 5:00 pm Dairy Foods: Processing, Convention Center, 501/502

Tuesday, July 13
7:30 am – 9:30 am Posters: Dairy Foods: Cheese, Convention Center, Exhibit Hall F
7:30 am – 9:30 am Posters: Dairy Foods: Chemistry, Convention Center, Exhibit Hall F
7:30 am – 9:30 am Posters: Dairy Foods: Foods and Products, Convention Center, Exhibit Hall F
9:30 am – 10:30 am Danisco International Dairy Sciences Award Lecture, Convention Center, 501/502
9:30 am – 12:30 pm Food Safety: Poultry Aspects, Convention Center, Korbel Ballroom 4abc
10:30 am – 11:30 am ADSA Foundation Scholar Lecture: Dairy Foods, Convention Center, 501/502
11:30 am – 12:30 pm ADSA Dairy Foods Division Business Meeting, Convention Center, 501/502
12:30 pm – 2:00 pm ADSA Dairy Foods Division Program Planning Lunch, Convention Center, 701
12:30 pm – 2:00 pm ADSA DF Division Milk Proteins and Enzyme Committee, Convention Center, 705
2:00 pm – 3:00 pm ADSA Foundation Scholar Lecture: Production, Convention Center, 301/303
2:00 pm – 5:00 pm SYMPOSIUM: Dairy Foods: Towards a Mechanistic Understanding of Probiotic Function in Man and Animals, Convention Center, 501/502
3:30 pm – 5:30 pm ADSA Production Division Symposium: Dairy Products and Human Health: The Facts, Convention Center, 301/303

Wednesday, July 14
7:30 am – 9:30 am Posters: Dairy Foods: Microbiology, Convention Center, Exhibit Hall F
7:30 am – 9:30 am Posters: Dairy Foods: Processing, Convention Center, Exhibit Hall F
7:30 am – 9:30 am Posters: Dairy Foods: Protein, Convention Center, Exhibit Hall F
7:30 am – 9:30 am Posters: Food Safety 2, Convention Center, Exhibit Hall F
10:30 am – 12:30 pm Dairy Foods: Cheese, Convention Center, 501/502
10:30 am – 12:30 pm Dairy Foods: Chemistry-Protein, Convention Center, 503/504
2:00 pm – 3:30 pm Dairy Foods: Foods and Products, Convention Center, 503/504
2:00 pm – 5:00 pm Dairy Foods: Microbiology, Convention Center, 501/502

Thursday, July 15
8:30 am – 11:30 am Food Safety: General Aspects, Convention Center 505/506
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Small Ruminant: Sheep Production

SYMPOSIUM: Teaching/Undergraduate and Graduate Education: Beyond PowerPoint:
  Use of Technology in the Classroom

Animal Behavior and Well-Being: Dairy, Sheep, and Beef

SYMPOSIUM: ASAS Western Section Symposium: Perinatal Programming of Offspring Quality 2: Evidence for Impacts of Maternal Nutrition on Livestock Production

SYMPOSIUM: Beef Species: Upcoming Environmental Policies and Their Effects on Beef Production

Breeding and Genetics: Functional Traits and Fitness

SYMPOSIUM: Companion Animals: Comparative Enrichment: Implications for Health and Behavior

SYMPOSIUM: CSAS Symposium: Issues in North American Livestock Transport

Dairy Foods: Foods and Products

Dairy Foods: Microbiology

Lactation Biology 2

SYMPOSIUM: Meat Science and Muscle Biology: Impact of Pre- and Post-Slaughter Handling on Meat Quality

Nonruminant Nutrition: Feed Additives

Nonruminant Nutrition: Health 2

Physiology and Endocrinology: Sperm Fertility, Embryos and Development

Production, Management and the Environment: Beef 2

Production, Management and the Environment: General

SYMPOSIUM: PSA Emerging Issues: Social Sustainability of Egg Production

Ruminant Nutrition: Beef 2

Ruminant Nutrition: Beef: Forages and Grazing

Ruminant Nutrition: Dairy 2

SYMPOSIUM: Swine Species: Optimizing Swine Production for Lactating Sows and Young Pigs

Teaching/Undergraduate and Graduate Education: Graduate and Undergraduate Teaching 2

Thursday, July 15

SYMPOSIA AND ORAL SESSIONS

Animal Health: Probiotics, Performance, and Antioxidants

Food Safety: General Aspects

SYMPOSIUM: Horse Species: Pathogenic and Reproductive Dysfunction in Horses

International Animal Agriculture 1

Nonruminant Nutrition: Enzymes 2

SYMPOSIUM: Nonruminant Nutrition: Nutrient and Non-Nutrient Sensing and Signaling in the Gastrointestinal Tract

Physiology and Endocrinology: Feed Intake, Metabolism and Maternal Nutrition

Ruminant Nutrition: By-Products and Supplements

SYMPOSIUM: Ruminant Nutrition: Acidosis: New Insights into the Persistent Problem

51
Sunday, July 11

SYMPOSIA AND ORAL SESSIONS
Triennial Growth Symposium
Dietary Regulation of Growth and Development
Chairs: Mogens Vestergaard, Aarhus University; Sylvia Poulos, The Coca-Cola Company
Sponsors: EAAP, Pfizer Animal Health, Elanco Animal Health

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<td>8:05 AM</td>
<td><strong>1</strong> Vitamin D mediated phosphate homeostasis—Implications for skeleton growth and mineralization.</td>
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<td>T. D. Crenshaw*, University of Wisconsin, Madison.</td>
<td></td>
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<tr>
<td>8:55 AM</td>
<td><strong>2</strong> Effects of polymeric carbohydrates on growth and development.</td>
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<tr>
<td>K. E. Bach Knudsen*, Aarhus University, Faculty of Agricultural Sciences, Department of Animal Health and Bioscience, Tjele, Denmark.</td>
<td></td>
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<tr>
<td>9:45 AM</td>
<td>Break</td>
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<tr>
<td>10:05 AM</td>
<td><strong>3</strong> Effect of feed additives on cattle growth and development.</td>
</tr>
<tr>
<td>R. A. Zinn*, P. Garces-Yepez, and J. Salinas-Chavira, University of California, Davis; 1UNAM, Mexico City, DF, MX, 2UAT, Ciudad Victoria, Tam., MX.</td>
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<tr>
<td>10:55 AM</td>
<td><strong>4</strong> Host targeted antibody strategies for preventing growth depression due to microbial colonization.</td>
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<td>M. E. Cook*, S. M. Huebner, University of Wisconsin, Department of Animal Sciences, Madison; 2University of Wisconsin, Department of Nutritional Sciences, Madison.</td>
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<tr>
<td>11:45 AM</td>
<td>Lunch</td>
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<tr>
<td>1:15 PM</td>
<td><strong>5</strong> Neural regulation of feed intake: modification by hormones, fasting and disease.</td>
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<td>J. L. Sartin*, B. K. Whitlock, and J. A. Daniel, Auburn University, Auburn, AL; 2University of Tennessee, Knoxville; 3Berry College, Mt. Berry, GA.</td>
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<td>2:05 PM</td>
<td><strong>6</strong> Leucine acts as a nutrient signal to stimulate protein synthesis.</td>
</tr>
<tr>
<td>T. A. Davis*, A. Suryawan, R. A. Orellana, and M. L. Fiorotto, USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.</td>
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<td>2:55 PM</td>
<td><strong>7</strong> Important roles for L-glutamine in swine nutrition and growth.</td>
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ASAS Western Section Graduate Paper Competition
Chair: Kristi Cammack, University of Wyoming

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<td><strong>8</strong> Feedlot performance and carcass quality of conventionally raised lambs implanted with zeranol versus naturally raised lambs.</td>
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<td>S. R. Eckerman*, G. P. Lardy, M. M. Thompson, B. W. Neville, M. L. Van Emon, P. T. Berg, and C. S. Schauer, North Dakota State University, Department of Animal Sciences, Fargo; 2Hettinger Research Extension Center, Hettinger, ND.</td>
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<tr>
<td>9:15 AM</td>
<td><strong>9</strong> Effects of rumen protected arginine supplementation on ewe serum amino acid concentration, circulating progesterone, and ovarian blood flow.</td>
</tr>
<tr>
<td>C. S. Saevre*, J. S. Caton, J. S. Luther, A. M. Meyer, D. V. Dhuyvetter, R. Musser, J. D. Kirsch, M. Kapphahn, D. A. Redmer, and C. S. Schauer, Department of Animal Sciences, North Dakota State University, Fargo; 2Hettinger Research Extension Center, North Dakota State University, Hettinger; 3University of Wisconsin River Falls, River Falls; 4Ridley Block Operations, Mankato, MN; 5SODA Feed Ingredients LLC, Mankato, MN.</td>
<td></td>
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9:30 AM 10 Effect of wet distillers grains with solubles on rumen bacterial community profiles in individually fed cattle.
L. N. Tracey*1, J. Browne-Silva1, C. H. Ponce1, J. B. Osterstock1, J. C. MacDonald2,3, M. Brown1,3, and S. L. Lodge-Ivey1, 1New Mexico State University, Las Cruces, 2Texas A&M, Canyon, 3Texas AgriLife Research, Amarillo, TX.

9:45 AM 11 Forage selection preferences by multiparous and primiparous beef cows grazing native tallgrass range during winter.

10:00 AM 12 Dry matter intake is repeatable over parities and residual feed intake is negatively correlated with dry matter digestibility in gestating cows.
T. J. McDonald*, B. M. Nichols, M. M. Harbac, T. M. Norvell, and J. A. Paterson, Montana State University, Bozeman.

10:15 AM Break

10:30 AM 13 The relative importance of weaning management and vaccination history on performance by ranch-direct beef calves during weaning and receiving.
M. J. Macek1, J. W. Iliff1, C. K. Olson2, J. R. Jaeger3, T. B. Schmidt3, D. U. Thomson3, and L. A. Pacheco3, 1Kansas State University, Manhattan, 2Western Kansas Agricultural Research Center, Hays, 3Mississippi State University, Starkville.

10:45 AM 14 Effects of sun-curing and harvest maturity on concentration and protein-binding capacity of condensed tannins in sericea lespedeza (Lespedeza cuneata).
G. J. Eckerle*, J. C. Olson5, J. R. Jaeger3, J. L. Davidson3, T. K. Kraft3, and L. A. Pacheco3, 1Kansas State University, Manhattan, 2Western Kansas Agricultural Research Center, Hays, 3Mississippi State University, Starkville.

11:00 AM 15 Effects of gestational dietary metabolizable protein level and dry matter intake on subsequent production traits in primiparous heifers.
B. M. Nichols*, T. J. McDonald1, M. M. Harbac3, A. J. Roberts2, and J. A. Paterson1, 1Department of Animal and Range Sciences, Montana State University, Bozeman, 2USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.

11:15 AM 16 Sampling bias when estimating adipocyte cellularity.
G. D. Cruz*, J. A. Oliveira5, T. R. Famula3, and J. G. Fadel1, 1University of California, Davis, 2Universidade Federal de Goiás, Goiânia, Goiás, Brazil.

11:30 AM 17 Effect of forage energy intake and supplementation on marbling deposition in growing beef cattle.

11:45 AM 18 Grazing patterns of Angus, Brangus and Brahman cows in the Chihuahuan Desert.
M. L. Russell*, D. W. Bailey, M. G. Thomas, B. K. Witmore, and C. C. Bailey, New Mexico State University, Las Cruces.

12:00 PM Break

1:15 PM 19 Arginine supplementation does not alter nitrogen metabolism of beef steers during a lipopolysaccharide challenge.
B. H. Carter*, C. A. Löst1, G. G. Gilliam3, B. C. Graham3, J. A. Carroll1, C. T. Collier2, and D. M. Hallford1, 1New Mexico State University, Las Cruces, 2USDA-ARS, Lubbock, TX.

1:30 PM 20 Calcium and phosphorus metabolism in finishing steers supplemented with vitamin D₃.

1:45 PM 21 Genetic and environmental influences on distribution patterns of beef cattle grazing foothill rangeland.
D. W. Bailey1, S. Marta2*, D. Jensen2, D. L. Boss2, and M. G. Thomas1, 1New Mexico State University, Las Cruces, 2Montana State University, Havre.

2:00 PM 22 Propionibacterium acidipropionici P169 and glucogenic precursors to improve rumen parameters associated with low quality forage.
P. H. Sanchez*, L. Tracey, J. Browne-Silva, and S. L. Lodge-Ivey, New Mexico State University, Las Cruces.

2:15 PM Break

2:30 PM 23 Effects of supplemental docosahexaenoic acid to ewes on lamb production, immunocompetence, serum metabolites, and thermogenesis.

2:45 PM 24 Sustainability implications of feedlot management practices.
K. L. Cooprider*, F. M. Mitloehner, and A. L. Van Eenennaam, University of California, Davis.
Effect of ram exposure on temporal patterns of progesterone and metabolic hormones concentrations in 18-month-old virgin Targhee ewes during the transition into the breeding season.
R. B. McCosh*1, E. M. Berry1, M. E. Wehrman1, R. R. Redden1, R. W. Kott1, D. Halford2, and J. G. Berardinelli1,
1Montana State University, Bozeman, 2New Mexico State University, Las Cruces.

Conjugated linoleic acid decreases prostaglandin synthesis in bovine luteal cells.

Camelina meal and crude glycerin as feed supplements for developing replacement beef heifers.

Use of a portable near infrared spectrophotometer to predict nutrient composition of feces from Holstein cattle fed high-concentrate diets.

Effects of implant type and protein source on growth performance of steers grazing summer pasture.
C. P. McMurphy*, E. D. Sharman, D. A. Cox, G. W. Horn, and D. L. Laiman, Oklahoma State University, Stillwater.

The effect of morbidity on feedlot performance and carcass quality in feedlot steers.
K. J. Austin*, J. L. Seabrook1, T. E. Engle1, R. K. Peel1, M. M. McAllister1, B. W. Brigham1, R. M. Enns1, R. L. Weaber2, H. Van Campen1, G. H. Loneran1, J. L. Salak-Johnson1, and C. C. L. Chase1, 1Colorado State University, Fort Collins, 2University of Missouri, Columbia, 3West Texas A&M University, Canyon, 4University of Illinois, Urbana, 5South Dakota State University, Brookings.

Changes in hepatic gene expression in steers administered high-S water with or without supplemental Mo.
K. L. Kessler*, K. C. Olson2, C. L. Wright2, K. J. Austin1, and K. M. Cammack1, 1University of Wyoming, Laramie, 2South Dakota State University, Brookings.

Symposium: National Extension Workshop
The Impact of Major Food Policy Shifts on the US Food Supply and its Producers: Animal Welfare Issues
Chair: Tamilee Nennich, Purdue University

9:30 AM 32 Washington update.
R. D. Reynnells*, USDA/NIFA/PAS, Washington, DC.

9:45 AM 33 The impact of major food policy shifts on the US food supply and its producers: Animal welfare issues.
J. Reynolds*, University of California, Davis.

10:15 AM Purchasing strategies for retailers in light of shifting policies.
Mike Morris, KFC Quality Assurance.

10:45 AM Animal agricultural conflict as competing worldviews.
W. Jamison*, Cornerstone Public Relations, LLC, Tequesta, FL.

11:15 AM Update on the Guide for the Care and Use of Agricultural Animals in Research and Teaching.
J. J. McGlone*1 and J. Swanson2, 1Texas Tech University, Lubbock, 2Michigan State University, East Lansing.

11:45 AM Update on horse slaughter.
K. Martinson*1 and T. Lenz2, 1University of Minnesota, St. Paul, 2Pfizer Animal Health, Louisburg, KS.
Informal Nutrition Symposium
Connecting Nutrition, Biochemistry, Genetics, Physiology and Microbiology to Enhance Our Knowledge in Improving Animal Agriculture
Chair: Mamduh Sifri, Archer Daniels Midland Alliance Nutrition, Inc.
Korbel Ballroom 1abc

1:00 PM  Welcome and introduction.
M. Sifri, Archer Daniels Midland Alliance Nutrition, Inc., Quincy, IL.

1:10 PM  Factors impacting intestinal secretions and turnover and how these endogenous losses affect nutrient utilization.
T. J. Applegate, Purdue University, W. Lafayette, IN.

1:50 PM  Factors impacting passage rate and the impact of passage rate on nutrient utilization.
R. Angel, University of Maryland, College Park.

2:30 PM  Intestinal microbial ecology and poultry production: Current status and challenges for the future.
M. Lee and A. Pedroso, Poultry Diagnostic and Research Center, University of Georgia, Athens.

3:30 PM  Break

3:45 PM  What the dickens has genetic selection done to these chickens? An Alice in Wonderland adventure through immunity, metabolism, and productivity through time.
B. D. Humphrey*1 and K. Klasing2, 1California Polytechnic State University, San Luis Obispo, 2University of California, Davis.

4:45 PM  Review and discussion.
D. Korver*1 and W. Saylor2, 1University of Alberta, Edmonton, Canada, 2University of Delaware, Newark.

OTHER EVENTS

Johne’s Disease Integrated Program (JDIP) Meeting
Grand Hyatt Denver
1:00 – 6:00 PM

Late-Breaking Abstracts
304
3:00 – 5:00 PM

Opening Session
Wells Fargo Theatre, Convention Center
7:00 – 8:00 PM

Opening Reception
Korbel Ballroom, Convention Center
8:00 – 10:00 PM
Monday, July 12

POSTER PRESENTATIONS

Animal Behavior and Well-Being

Livestock

M1 Rubber flooring impact on health of dairy cows.
S. D. Eicher*, D. C. Lay Jr., J. D. Arthington, and M. M. Schutz, USDA-ARS, West Lafayette, IN, 2University of Florida, Ona, 3Purdue University, West Lafayette, IN.

M2 Rubber flooring impact on production and herd life of dairy cows.
M. M. Schutz* and S. D. Eicher, Purdue University, West Lafayette, IN, 2USDA-ARS, West Lafayette, IN.

M3 Motivation to walk affects speed but not gait score in dairy cattle.

M4 Resting patterns of dairy cows and housing characteristics.
A. Bach*, I. Guasch, 1Department of Ruminant Production, IRITA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain.

M5 Short-term overcrowding did not affect the feed intake, hygiene, or stress response of Holstein dairy cows.

M6 Greater feed bin stocking density increases the social aggression of postpartum dairy cows.

M7 Lying and standing behavior on farms using deep-beded versus mattress freestalls.

M8 Limit-feeding dairy heifers: Effects of feed bunk space and provision of a low nutritive feedstuff.
K. Stevenson, B. L. Kitts, A. M. Greter, and T. J. Devries*, Dept. of Animal and Poultry Science, University of Guelph. Kemptville Campus, Kemptville, ON, Canada.

M9 Effect of feed type exposure on diet selection behavior of dairy calves.
E. K. Miller-Cushion* and T. J. Devries, Dept. of Animal and Poultry Science, University of Guelph. Kemptville Campus, Kemptville, ON, Canada.

M10 Lying time and animal activity after surgical castration of Holstein bulls recorded with pedometers.
S. Martí*, M. Devant, and A. Bach*, 1Department of Ruminant Production, IRITA, Barcelona, Spain, 2ICREA, Barcelona, Spain.

M11 Dairy cattle welfare assessment in 25 farms in southern Brazil.
G. B. Bond*, A. Ostensky, R. Almeida, and C. F. M. Molento, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2Pontificia Universidade Católica do Paraná, Curitiba, PR, Brazil.

M12 Correlations between production traits and dairy cattle welfare indicators in 19 farms in southern Brazil.
G. B. Bond*, A. Ostensky, R. Almeida, and C. F. M. Molento, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2Pontificia Universidade Católica do Paraná, Curitiba, PR, Brazil.

M13 Effect of food restriction on the behavior of penned goats kids.

M14 Effect of metabolizable energy levels on the feeding behavior of Santa Inês sheep.
R. M. Fontenele*, E. S. Pereira, P. G. Pimentel, M. S. de Souza Carneiro, A. B. S. Villarroel, and J. G. L. R. Filho, Federal University Ceará, Fortaleza, Ceará, Brazil.

M15 Evaluation of feed behavior traits in beef heifers using a GrowSafe intake measurement system.
E. Mendes*, G. Cartens, and L. Tedeschi, Texas A&M University, College Station.

M16 Feeding behavior and ruminal acidosis in beef cattle offered a total mixed ration or dietary components separately.
Association between facial hair whorl and temperament in noncastrated male cattle *Bos taurus* and *Bos indicus*.
R. Rivas*1,2, A. Schmidek2, E. N. Andrade1,2, F. D. Resende2, G. R. Siqueira2, M. H. Faria2, and R. O. Roça3, 1Centro Universitário da Fundação Educacional de Barretos - UNIFEB, Barretos, SP, Brazil, 2Agência Paulista de Tecnologia do Agronegócio - APTA, Colina, SP, Brazil, 3Universidade Estadual Paulista Júlio de Mesquita Filho - UNESP, Botucatu, SP, Brazil.

Comparison of adrenal responsiveness to corticotropin-releasing hormone (CRH) in Angus and Brahman steers of divergent temperament.
K. O. Curley Jr.*1, J. A. Carroll2, R. C. Vann2, R. D. Randle1, and T. H. Welsh Jr.1, 1Texas AgriLife Research, College Station, 2Texas AgriLife Research, Overton, 3USDA ARS, Lubbock, TX, 4MAFES, Raymond, MS.

Evaluation of temperament on pregnancy rate in beef embryo recipient cows.
S. S. Jennings*1, K. J. Stufts2, C. R. Looney3, and T. H. Welsh Jr. 1, 1Sam Houston State University, Huntsville, TX, 2OvaGenix, Inc., Bryan, TX, 3Texas AgriLife Research, College Station.

Ingestive behavior and physiological parameters of crossbreed heifers under different feeding schedules.
R. A. S. Pessoa*1, F. M. Silva1, M. A. Ferreira1, M. Azevedo1, L. H. S. Gomes1, E. C. Silva1, J. G. R. Cunha1, A. S. S. Filho2, D. C. Santos2, and J. C. V. Oliveira2, 1Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brasil, 2Instituto Agronômico de Pernambuco, Recife, Pernambuco, Brazil.

Influence of exercise on feedlot performance and carcass characteristics in steers.
B. J. Howell*1, J. R. Brethour2, and T. Noffsginger3, 1Fort Hays State University, Hays, 2Agricultural Research Center, Kansas State University, Hays, 3Production Animal Consultants, Benkelman, NE.

Lack of magnetic orientation of beef cattle.
M. Erikson*, E. Leduc, R. Prince, and G. Gallagher, Berry College, Mount Berry, GA.

Effect of cattle liner microclimate on core body temperature and shrink in market-weight heifers transported during summer months.
M. Bryan*1,2, K. Schwartzkopf-Genswein1, T. Crowe2, L. González2, and J. Kastelic2, 1Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2University of Saskatchewan, Saskatoon, Saskatchewan, 3University of Manitoba, Winnipeg, Manitoba, Canada.

Animal Health

Inflammation, Infection, and Stress

Natural resistance-associated macrophage protein (Nramp1) and goat health.

Identification of serum biomarkers in poultry with leg problems.
K. S. Rasaputra*1,2, R. Liyanage1, J. O. Lay Jr. 1, and N. C. Rath1, 1University of Arkansas, Fayetteville, 2Agricultural Research Service/USDA, Fayetteville, AR.

The detection of bovine respiratory disease in low risk cattle using infrared thermography.
A. L. Schaefer*1, N. J. Cook2, C. Bench1, J. Colyn1, B. Chabot1, T. Liu1, P. Lepage1, D. Froehlich2, L. H. S. Gomes1, S. Marchand4, J. Basarab2, and E. Okine1, 1Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, 2Alberta Agriculture, Lacombe Alberta, 3Department of AFNS, University of Alberta, Edmonton Alberta.

Feeding *Lactobacillus* spp. and *Bacillus* spp. does not improve growth or survival of channel catfish experimentally challenged with *Edwardsiella ictaluri*.
B. C. Peterson*1, M. L. Wood1, N. J. Booth1, M. Morgan2, N. Pumford2, G. Tellez2, and B. M. Hargis3, 1USDA/ARS, Stoneville, MS, 2University of Arkansas, Fayetteville.

Effects of intravenous *Escherichia coli* (E. coli) dose on the pathophysiological response of colostrum-fed Jersey calves.
M. A. Ballou*, J. W. Dailey1, L. E. Hulbert1,2, C. J. Cobb1, and J. A. Carroll2, 1Texas Tech University, Department of Animal Science, Lubbock, 2Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.

*Eimeria tenella* oocyst output in cecal or fecal material following challenge in restrict fed broilers.
A. Jordan*1, D. Caldwell1, J. Klein1, J. Coppedge1, S. Pohl1, K. Jessen1, S. Fitz-Coy1, and J. Lee1, 1Texas A&M University, College Station, 2Intervet/Schering-Plough Animal Health, Summit, NJ.

Effect of aqueous iodine supplementation on growth and dental condition of newly weaned piglets.
A. L. Tucker* and R. M. Friendship, University of Guelph, Guelph, Ontario, Canada.

Interaction of breed and quantity of milk replacer on innate immune competence of dairy calves.
M. A. Ballou* and C. J. Cobb, Department of Animal and Food Sciences, Texas Tech University, Lubbock.
M32 Effects of neomycin and oxytetracycline (N/T) fed at treatment rate for 14 days in calf milk replacer (CMR) on calf performance and health.
D. Shields*,1; R. Blome,2 D. Wood, and J. Sowinski,1 1Merrick’s, Inc., Middleton, WI, 2Animex, Juneau, WI.

M33 The effect of adding the organic complex of zinc, copper, manganese and cobalt on hoof health and performance in feedlot cattle.
G. R. Noori1, H. Amanlou1, D. Zahmatkesh1, E. Mahjoubi*1, and Y. Mokhtabad2,1 Zanjan University, Zanjan, Iran, 2Azad University, Mazandaran, Iran.

M34 The effect of early feeding on blood factors, immune system, digestive tract and intestinal morphology of broiler chicks.
M. Asgari1, S. Rahimi*,1, M. Kiaei2, and M. A. Karimi Torshizi1,1 Tarbiat Modares University, Tehran, Tehran, Iran, 2University of Tehran, Tehran, Tehran, Iran.

M35 Evaluation of effect of sodium bicarbonate as a top-dress on preventing laminitis and performance in feedlot cattle.
G. R. Noori1, H. Amanlou1, D. Zahmatkesh1, E. Mahjoubi*1, and Y. Mokhtabad2,1 Zanjan University, Zanjan, Iran, 2Azad University, Mazandaran, Iran.

M36 Expression of members of the Wingless gene family in goats.
M. Asgari1, S. Rahimi*1, M. Kiaei2, and M. A. Karimi Torshizi1,1 University of Tehran, Tehran, Tehran, Iran.

M37 Dynamic changes in physiological responses to heat stress in cattle of different geographic origins.

M38 Patterns of heat response and adaptation on summer pasture: A comparison of heat sensitive (Angus) and tolerant (Romosinuan) cattle.

X.-Y. Zhu*1, G.-L. Cheng1,2, F.-H. Liu1,2, J. Yu1, Y.-J. Wang2, T.-Q. Yu1, J.-Q. Xu1, and M. Wang1,1 TCMV Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University, Beijing, China, 2Department of Animal Science and Technology, Beijing University of Agriculture, Beijing, China, 3Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team, Beijing, China.

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M42 Study of the mechanism of heat stress-induced IEC-6 cell apoptosis.
W. Luan1, K. Guo1, G. Cheng1,2, J. Yu1, F. Liu1,2, and J. Xu1,1 Department of Animal Science and Technology, Beijing University of Agriculture, Beijing, China, 2Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team, Beijing, China, 3TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University, Beijing, China.

M43 Coagulase-negative staphylococci mastitis management.
T. E. Quirk*, L. K. Fox, J. L. Capper, D. D. Hancock, and J. R. Wenz, Washington State University, Pullman.

M44 Morphometric evaluation of udders in Gir cows and the prevalence of subclinical mastitis.
M. A. F. Porcionato1, M. V. Santos*,1 C. B. M. Reis2, M. M. Stradio, C. S. Cortinhas1, and W. V. B Soares1, 1Department of Nutrition and Animal Production, FMVZ/USP, Pirassununga, Brazil, 2Department of Basic Science, FZEA/USP, Pirassununga, Brazil, 3Institute of Zootecny, IZ/PTA, Mococa, Brazil.

M45 Comparison of 165 RNA gene sequencing and aerobic culture results performed on milk samples from cows with clinical mastitis.

M46 Hyphenated mass spectrometry investigations applied to the characterization of organic chelates.
A. Yiannikouris*,1 C. Connolly2, R. Power2, and R. Lobinski*,1 Alltech Inc., Nicholasville, KY, 2Alltech Ireland, Dunboyne, County Meath, Ireland, 3CNRS UMR 3254, Pau, France.

M47 Methods to predict true disease prevalence in beef cattle.
C. M. McAllister*,1 B. W. Brigham1, R. K. Peel1, H. Van Campen1, G. H. Loneragan1, R. L. Weaber1, J. L. Salak-Johnson1, and C. C. L. Chase1, 1Colorado State University, Fort Collins, 2West Texas A&M University, Canyon, 3University of Missouri, Columbia, 4University of Illinois, Urbana, 5South Dakota State University, Brookings.
A research model for inducing leg problems in broilers.
R. F. Wideman*, F. Khajal*, K. R. Hamal†, A. F. Wideman†, and H. Lester‡, †University of Arkansas Division of Agriculture, Fayetteville, ‡Shahrekord University, Faculty of Agriculture, Shahrekord, Iran.

Microbial diversity in the ileal and cecal contents of broilers using pyrosequencing.
S. J. Eom*, H. J. Kim†, C. J. Cha‡, and G. B. Kim†, †Department of Animal Science and Technology, Chung-Ang University, Anseong, South Korea, ‡Department of Biotechnology (BK21 Program), Chung-Ang University, Anseong, South Korea.

Use of infrared thermography to monitor risk factors in newborn piglets.
J. Morales†, A. Manso†, M. Aparicio‡, and C. Pineiro*, †PigCHAMP Pro Europa, Segovia, Spain, ‡Centro de Experimentación y Formación en Porcino, Segovia, Spain.

Relationship between lying patterns, feeding management, and incidence of intramammary infection in dairy cows milked in an automated system.
T. J. DeVries*, K. E. Leslie‡, H. W. Barkema†, J. Rodenburg‡, and G. Seguin‡, †University of Guelph, Kemptville Campus, Kemptville, ON, Canada, ‡University of Guelph, Guelph, ON, Canada, †University of Calgary, Calgary, AB, Canada, ‡DairyLogix Consulting, Woodstock, ON, Canada, ‡Dairy Farmers of Ontario, Casselman, ON, Canada.

Proteomics analysis of plasma and milk protein between healthy dairy cows and Staphylococcus aureus infected-subclinical cows.

Developmental changes in plasma proteins during the transition period in dairy cows.
Y. X. Yang†, S. S. Li†, J. Q. Wang*, D. P. Bu†, L. Y. Zhang†, and L. Y. Zhou†, †State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, †Institute of Animal Science and Veterinary Medicine, Anhui Academy of Agricultural Sciences, Hefei, China.

Effects of single and combined Mycoplasma gallisepticum vaccination on blood electrolytes and acid–base balance in commercial egg-laying hens.
H. A. Olanrewaju*, S. D. Collier, and S. L. Branton, USDA-ARS, Starkville, MS.

Continuously growing chicken liver cell lines for the vaccine production against poultry viruses.
J. Y. Lee* and B.-W. Kong, University of Arkansas, Fayetteville.

Effect of rabbit Sacculus rotundus antimicrobial peptides on serum antibody titers of AIV and NDV in chicken.
R. P. She*, K. Z. Wang†, W. M. Ma†, Y. Ding†, and J. Tang†, †College of Veterinary Medicine, China Agricultural University, Beijing, China, †Research Center of Laboratory Animal, Jinan, Shandong, China.

Animal Health-Johne’s Disease (JDIP)
Johne’s Disease

Results from the U. S. National Johne’s Disease Demonstration Herd Project: Most important areas from the Johne’s risk assessment.
C. Fosilier* and J. Lombard, USDA:APHIS:VS, Fort Collins, CO.

Evaluation of the next generation Parachek ELISA for high-throughput detection of Johne’s disease in milk and serum samples.
P. Schacher†, A. Zurfuhl‡, D. Zwald†, T. Byrrem†, and A. J. Raeber§, †Prionics AG, Schlieren, Switzerland, ‡AntelBioSystems Inc., Lansing, MI.

Analysis of the immune response to a major membrane protein of Mycobacterium avium ssp. paratuberculosis in experimentally and naturally infected cattle.
G. S. Abdellrazeq†, H. M. Rihan†, M. J. Hamilton†, A. J. Allen†, K. T. Park§, J. P. Bannantine†, J. R. Stabel‡, and W. C. Davis§, †Faculty of Vet Med, Alexandria University, Edfina, Rosetta-line, Behera Province, Egypt, ‡Faculty of Vet Med, Mansoura Univ, El Mansoura, Egypt, †Washington State University, Pullman, ‡USDA-ARS National Animal Disease Center, Ames, IA.

Flow cytometric and in-house ELISA methods of milk testing for Johne’s disease diagnosis.
A. Wadhwa*, J. P. Bannantine†, B. A. Elliot†, M. C. Scott†, and S. Eda†, †University of Tennessee, Knoxville, ‡United States Department of Agriculture, Ames, IA.

Induction of B cell responses upon experimental infection of neonatal calves with Mycobacterium avium ssp. paratuberculosis.
J. R. Stabel*, J. P. Bannantine†, S. Eda†, and S. Robbe-Austerman§, †USDA-ARS-NADC, Ames, IA, ‡University of Tennessee, Knoxville, †USDA-APHIS-NVSL, Ames, IA.
M62 Deletion of relA attenuates in vivo survival of Mycobacterium avium ssp. paratuberculosis.
K. T. Park*1, A. J. Allen2, M. J. Hamilton1, A. Grimm3, H. M. Rihan4, G. S. Abdellraezq5, and W. C. Davis1,1Department of Veterinary Microbiology and Pathology, Washington State University, Pullman,2Department of Veterinary Clinical Sciences, Washington State University, Pullman,3Department of Bacteriology, Mycology and Immunology, Mansoura University, Egypt,4Department of Microbiology, Alexandria University, Egypt.

M63 Microfluidic system for serodiagnosis of Johne's disease.
S. Eda*1, A. Wadhwa1, J. P. Bannantine1, M. C. Scott1, R. W. Shaw1, and R. S. Foote1,1University of Tennessee, Knoxville,2United States Department of Agriculture, Ames, IA,3Oak Ridge National Laboratory, Oak Ridge, TN.

M64 Evaluation of Mycobacterium avium ssp. paratuberculosis strains and a locus associated with tissue infection.
H. L. Neibergs*1, Y. Schukken2, R. H. Whitlock3, A. Pradhan4, J. M. Smith5, and E. Hovingh6,1Washington State University, Pullman,2Cornell University, Ithaca, NY,3University of Pennsylvania, Kennett Square,4University of Vermont, Burlington,5Pennsylvania State University, University Park, Pullman, MT.

M65 Genome sequence of a Mycobacterium avium ssp. paratuberculosis isolate from a patient with Crohn's disease.
L. Li*1, A. Amonsin2, S. Sreevatsan3, and V. Kapur1,1Penn State University, University Park, 2Chulalongkorn University, Bangkok, Thailand,3University of Minnesota, St. Paul.

M66 Impact of vaccination against Johne's disease on lactation performance of dairy cows: Milk production, reproduction and overall culling.
J. R. Lima*1, E. Patton1, B. Knust1, J. Bohn2, and S. J. Wells1,1University of Minnesota, St. Paul,2Wisconsin Department of Agriculture, Madison,3Veterinary Clinic, Amery, WI.

M67 Effect of Tri-Lution, a symbiotic, on milk production and shedding of Mycobacterium avium ssp. paratuberculosis (MAP) in a commercial dairy herd.

M68 Survivability of Mycobacterium avium ssp. paratuberculosis in grass silage after fermentation and exposure to low pH and high organic acids.
S. A. Flis*1, K. L. Cook1, and C. S. Ballard1,1Bourdeau Bros., Middlebury, VT,2USDA–ARS, Bowling Green, KY,3W. H. Miner Agricultural Research Institute, Chazy, NY.

M69 A membrane-associated serine protease of Mycobacterium avium ssp. paratuberculosis plays a role in resistance to phagosomal acid stress.
A. Kugadas*1, H. K. Janagama1, E. A. Lamont1, and S. Sreevatsan1,2,1Department of Veterinary Population Medicine, University of Minnesota, St. Paul,2Department of Veterinary Biomedical Sciences, University of Minnesota, St. Paul.

M70 Quantifying Johne’s disease infectivity in Indiana dairy herds.
C. C. Wu*1, T. L. Lin, A. Storm, C. A. Alinovi, and M. P. Ward, Purdue University, West Lafayette, IN.

M71 Preliminary observation of an indigenous Johne's disease vaccine study in infected cattle herd in India.

Breeding and Genetics
Beef Cattle

M72 Association of a single nucleotide polymorphism of calpain 1 gene with meat tenderness of the yak.
X. J. Wu1, L. Yang1, H. L. Wang1, P. Zhang1, J. H. Wang1, M. A. Brown*2, and J. P. Wu1,1Gansu Agricultural University, Lanzhou, Gansu, China,2USDA–ARS, Grazinglands Research Laboratory, El Reno, OK.

M73 The effects of single nucleotide polymorphisms of calpastatin gene on meat tenderness of the yak.
J. H. Wang1, J. P. Wu*2, H. L. Wan1, L. Yang1, X. J. Wu1, M. A. Brown2, and L. P. Zhang1,1Gansu Agricultural University, Lanzhou, Gansu, China,2USDA–ARS, Grazinglands Research Laboratory, El Reno, OK.

M74 Estimation of inbreeding and effective population size of fullblood Wagyu cattle registered with the American Wagyu Association.
H. L. Neibergs*1, R. Zanella1, J. F. Taylor1, C. T. Gaskins1, J. J. Reeves1, and J. M. de Avila1,1Washington State University, Pullman,2University of Missouri, Columbia.

M75 Genetic network update for economically important traits in a Wagyu × Limousin reference population.
Z. Jiang*, J. J. Michal1, T. F. Daniels1, J. Chen1, Z. X. Pan1, T. Kunej1, M. D. Garcia1, C. T. Gaskins1, J. R. Busboom1, L. J. Alexander1, R. W. Wright Jr.1, and M. D. MacNeil1,1Washington State University, Pullman,2Louisiana State University, Baton Rouge,3USDA–ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.
Genetic trends for image analysis traits in Japanese Black cattle.

Multivariate analyses of weight traits fitting reduced rank and factor analytic models in Nellore cattle.
A. A. Boligon*, A. A. Bignardi, M. E. Z. Mercadante, and L. G. Albuquerque, 1FCAV/UnESP, Jaboticabal, São Paulo, Brazil,
1Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil.

Genetic parameters for weight traits from birth to 630 days of age in Guzera cattle by random regression models.
I. S. Silva*, I. U. Packer, L. O. C. Silva, C. M. R. Melo, and R. A. A. Torres Junior, 1University of Brasilia - UNB, Brasília /DF, Brazil,
1University of São Paulo - USP/ESALQ, Piracicaba/SP, Brazil, 1Embrapa Gado de Corte, Campo Grande/MS, Brazil, 4Federal University of Santa Catarina - UFSC, Florianópolis/SC, Brazil.

Principal component analysis of traits contributing to genetic evaluation of Brahman bulls in Brazil.
1Mato Grosso do Sul Federal University - UFMS, Aquidauana, MS, Brazil,
1Empresa Brasileira de Pesquisa Agropecuaria - EMBRAPA, Campo Grande, MS, Brazil,
2Mato Grosso do Sul Federal University - UFMS, Tres Lagoas, MS, Brazil, 4Parana Federal University - UFPR, Palotina, PR, Brazil,
3UESB, Jequeia, BA, Brazil, 6Animal Sciences, MU - USA, Columbia, Missouri,
3Scholarship of CNPq, Brazilia, DF - Brazil.

Allelic frequencies of polymorphisms associated with feed efficiency in Aberdeen Angus cattle in Uruguay.

Techniques for sifting inconsistent data points from repeatedly weighed beef cattle.

Use of principal component approach to predict direct genomic breeding values for meat traits in Italian Simmental Bulls.
M. A. Pintus1, G. Gaspa1, N. P. P. Macciotta1, P. Carneri2, E. L. Nicolazzi1, C. Dimaru1, D. Vicario1, P. Ajmone-Marsan3, A. Nardone1, and A. Valentini1,
1Università di Sassari, Sassari, Italy,
2Università di Padova, Padova, Italy, 3Università di Piacenza, Piacenza, Italy,
4ANAPRI, Udine, Italy,
5Università della Tuscia, Viterbo, Italy.

Genetic analysis of visual score data with different distributions and genetic parameters using linear and nonlinear models.
F. Barichello*, M. M. Alencar, and R. A. A. Torres Junior, 1UnESP, Jaboticabal, SP, Brazil, 2Embrapa Southeast Livestock, São Carlos, SP, Brazil,
3Embrapa Beef Cattle, Campo Grande, MS, Brazil.

Multibreed genetic evaluation of calving ease and birth weight using a threshold-linear model in Gelbvieh cattle.

Comparison of a feed efficiency measure for steer progeny produced from divergently mated sires and dams phenotyped for residual feed intake.

The relationship of bovine respiratory disease and carcass ultrasound measures.
1Department of Animal Science, Colorado State University, Fort Collins,
2Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins,
3Department of Animal Science, University of Missouri, Columbia,
4Department of Agricultural Sciences, West Texas A&M University, Canyon,
5Department of Animal Sciences, University of Illinois, Urbana,
6Department of Biology and Microbiology, South Dakota State University, Brookings,
7Department of Animal Science, Cornell University, Ithaca, NY,
8Department of Agricultural Sciences, West Texas A&M University.

Performance and live-ultrasound traits of beef cattle breeds associated with DNA commercial markers.
F. Loya-Olguin*, M. Encinas, R. E. Kirksey, L. Lauriault, and L. Avendaño-Reyes, Universidad Autonoma de Baja California, Ejido Nuevo Leon, Valle de Mexicali, Baja California, Mexico,
1New Mexico State University, Las Cruces.

No evidence for association between leptin polymorphism C. 73 C>T and bovine viral diarrhea virus (BVDV) vaccine response.
X. Fang*, L. A. Hoff, J. A. Walker, K. C. Olson, G. A. Perry, J. X. Wu, C. Maltecca, and M. G. Gonda,
1South Dakota State University, Brookings,
2North Carolina State University, Raleigh.

A genotype combination approach using μ-calpain as a candidate gene for growth, carcass, and meat quality in bulls of Senepol and Charolais inheritance.

An insertion/deletion polymorphism at the bovine calpastatin locus is associated with economically important traits.
N. Vega*, D. Velez, A. Casas, D. Cianzio, C. W. Ernst, and M. Pagan, 1University of Puerto Rico, Mayaguez, Puerto Rico,
3Michigan State University, East Lansing.

Partial characterization of bovine complement receptor-2 (CR2) in Angus cattle.
M92 Evaluation of insertion/deletion and single nucleotide polymorphisms identified at the bovine insulin-like growth factor binding protein-2 locus.
D. Velez*, 1, C. W. Ernst2, and M. Pagan3, 1University of Puerto Rico at Mayaguez, Mayaguez, Puerto Rico, 2Michigan State University, East Lansing.

Food Safety 1

M93 Residue of melamine and cyanuric acid in milk and tissues of dairy cows fed with different doses of melamine.

M94 Factors affecting microbiological and physicochemical characteristics of milk produced in dairies located in Central Mexico (Altos de Jalisco).

M95 Determination of Cd and Pb content on tissues of beef cattle raised in a tropical pasture based system in Brazil.
J. R. Lima*, M. B. M. Teixeira2, J. L. B. Silva, E. F. Silva, R. G. Reis2, L. R. D. A. Neto2, H. M. Queiroz2, and L. G. Nussio1, 1University of São Paulo/ESALQ, Piracicaba, Brazil, 2Ministry of Agriculture, Livestock and Food Supply, Campinas, São Paulo, Brazil.

M96 Effects of iodine intake and teat dipping practices on milk iodine concentrations.
S. I. Borucki Castro*, R. Berthiaume1, A. Fouquet2, A. Robichaud2, F. Beraldin2, and P. Lacasse, 1Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada, 2Food Directorate, Health Products and Food Branch, Health Canada, Montréal, Québec, Canada.

M97 Iodine concentrations in feeds in farms with contrasting levels of iodine in milk.
S. I. Borucki Castro*, P. Lacasse, A. Fouquet, A. Robichaud, F. Beraldin, and R. Berthiaume, 1Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada, 2Food Directorate, Health Products and Food Branch, Health Canada, Montréal, Québec, Canada.

M98 European Union principles for the risk assessment of feed additives.
M. Anguita*, J. Galobart, and C. Roncancio-Peña, European Food Safety Authority, Parma, Italy.

M99 Development an on-farm technique using lactic acid bacteria as a biomarker to detect of toxins in milk.
M. H. Hathurusinghe*, A. AbuGhazaleh2, M. R. Reddy1, S. A. Ibrahim1, M. Tjakarimi1, and D. Song1, 1North Carolina Agricultural and Technical State University, Greensboro, 2Southern Illinois University, Carbondale.

M100 Food safety in developing countries using no technology: The Wagashi study case.
F. La Terra1, G. Belvedere1, M. Manenti1, C. Pediliggieri1, S. Mirabella1, J. C. Codjia2, S. Doko2, and G. Licitra*14, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2University of Abomey-Calavi, Benin, 3University of Parakou, Benin, 4DACPA, Catania University, Catania, Italy.

G. S. Kumar*, I. Hanning, Y. Ma, and M. Slavik, University of Arkansas, Fayetteville.

M102 Salmonella Enteritidis challenge in chicks of different genotypes.
P. E. N. Givisiez*, E. G. Santos1, F. G. P. Costa2, J. H. V. Silva1, and A. Berchieri Jr. 2, 1Universidade Federal da Paraíba, Areia, PB, Brazil, 2Universidade Estadual Paulista, Jaboticabal, SP, Brazil.

Forages and Pastures

Dairy Forages and Forage Quality

M103 Effect of feeding distillers dried grains to lactating cows on farms in the southern dairy region of Chile.
R. Shaver*, R. Ehrenfeld2, M. Olivares2, J. Cuellar3, and F. Inostroza1, 1University of Wisconsin, Madison, 2Cooprinsem, Osorno, Chile, 3US Grains Council, Bogota, Colombia.

M104 Yield and quality of grasses and legumes for dairy cattle feeding.
M105 Quality of ensiled grasses and legumes for dairy cattle feeding.

M106 Chewing and ruminating with various forage qualities in non-lactating dairy cows.
M. Fustini*1, A. Palmonari1, A. J. Heinrichs1, and A. Formigoni1, 1Università di Bologna, Bologna, Italy, 2Department of Dairy and Animal Science, The Pennsylvania State University, University Park.

M107 The effect of management on corn silage quality.

M108 Whole-plant corn quality parameters for ensiled and unensiled samples: Effects of hybrid and length of fermentation.
C. M. Fish*1, R. D. Shaver1, D. C. Weakley2, J. G. Lauer1, and T. E. Piper2, 1University of Wisconsin, Madison, 2Land O’ Lakes Inc., Shoreview, MN.

M109 Fermentation characteristics of forage sorghum-lablab bean silage mixtures.
F. E. Contreras-Govea*1, M. A. Marsalis1, S. V. Angadi1, G. R. Smith1, and L. M. Lauriault1, 1New Mexico State University, Plant and Environmental Sciences Department, Artesia, 2New Mexico State University, Extension Plant Sciences Department, Clovis, 3New Mexico State University, Plant and Environmental Sciences Department, Clovis, 4Texas AgriLife Research, Texas A&M University System, Overton, 5New Mexico State University, Plant and Environmental Sciences Department, Tucumcari.

M110 Fermentation characteristics of forage sorghum-lablab bean silage mixtures.
F. E. Contreras-Govea*1, M. A. Marsalis1, S. V. Angadi1, G. R. Smith1, and L. M. Lauriault1, 1New Mexico State University, Plant and Environmental Sciences Department, Artesia, 2New Mexico State University, Extension Plant Sciences Department, Clovis, 3New Mexico State University, Plant and Environmental Sciences Department, Clovis, 4Texas AgriLife Research, Texas A&M University System, Overton, 5New Mexico State University, Plant and Environmental Sciences Department, Tucumcari.

M111 Growing degree-days as corn silage harvest indicator.
J. S. Oliveira*, E. J. D. de Almeida1, F. C. F. Lopes1, and E. C. M. de Lanes1, 1Embrapa Gado de Leite, Juiz de Fora, MG, Brazil, 2Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brazil, 3Centro de Ensino Superior de Juiz de Fora, Juiz de Fora, MG, Brazil.

M112 Production and quality of alfalfa harvested at different stages of maturity.
R. Copado1, C. Arzola*1, J. A. Payan1, J. Salinas1, O. Ruiz1, C. Rodriguez-Muela1, E. Rodriguez1, J. A. Ortega1, and O. Serna1, 1Universidad Autónoma de Chihuahua, Chihuahua, Chih., Mexico, 2INIFAP, Chihuahua, Chih., Mexico, 3Universidad Autónoma de Tamaulipas, Cd. Victoria, Tams., Tams, Mexico.

M113 Gas production profiles of two varieties of alfalfa harvested on different stages of maturity.
O. Serna-Beltran1, C. Arzola*1, E. Santellano-Estrada1, J. A. Payan-Garcia2, A. Corral-Luna3, O. Ruiz1, C. Rodriguez-Muela1, and J. Salinas4, 1Universidad Autónoma de Chihuahua, Chihuahua, Mexico, 2Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Delicias, Chihuahua, Mexico, 3Department of Animal Sciences, University of Illinois at Urbana-Champaign, 4Universidad Autónoma de Tamaulipas, Reynosa, Tams., Mexico.

M114 Can different ME estimation methods give different values for tanniferous forages?
H. Khalilvandi-Behroozyar1,2, M. Dehghan-Banadaky1, and K. RezaYazdi2, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

M115 Ruminal degradability of nutrients in Sainfoin, a tanniferous legume forage.
H. Khalilvandi-Behroozyar1,2, K. RezaYazdi2, and M. Dehghan-Banadaky1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

M116 A survey of molds and yeasts in Canadian corn silage.
H. V. L. N. Swamy*, A. M. A. Heeg, and A. B. Rae, Alltech Canada, Guelph, ON, Canada.

M117 A survey of mold count and identification in Pennsylvanian dairy feed ingredients.
H. V. L. N. Swamy*, J. M. Lawrence2, and N. J. Adams2, 1Alltech Canada, Guelph, ON, Canada, 2Alltech California, Fresno.
M118 Summer annuals for fall grazing in the high elevation Intermountain West.

M119 Biological parameters by spring and fall-calving cows grazing with full access, limited access, or no access to endophyte-infected tall fescue–2 year summary.
J. Caldwell*, K. Coffey1, M. Looper1, D. Kreider1, E. Kegley1, J. Jennings3, C. West1, D. Hubbell III1, J. Tucker1, A. Young1, T. Hess1, M. Popp1, M. Savin1, D. Philipp1, C. Rosenkranz Jr. 1, University of Arkansas, Fayetteville, USDA-ARS, Booneville, AR, University of Arkansas Cooperative Extension Service, Little Rock.

M120 Immune function responses by spring- and fall-born calves weaned from wild-type or non-toxic endophyte-infected tall fescue.
M. A. Ata*, K. P. Coffey1, J. D. Caldwell1, E. B. Kegley1, M. L. Looper1, A. N. Young1, D. Philipp1, C. P. West1, G. F. Erf1, D. S. Hubbell, III1, and C. F. Rosenkranz Jr. 1, University of Arkansas, Fayetteville, USDA-ARS, Booneville, AR.

M121 Antagonism of 5-hydroxytryptamine₂A receptor results in decreased contractile response of bovine lateral saphenous vein to tall fescue alkaloids.

M122 Tall fescue alkaloids cause vasoconstriction in equine medial palmar artery and vein.
J. L. Klotz* and K. J. McDowell1, USDA-ARS, FAPRU, Lexington, KY, University of Kentucky, Lexington.

M123 Comparison of management strategies commonly used to lessen or alleviate the symptoms of fescue toxicosis in cattle using meta-analysis.
J. Hawley*, J. D. Caldwell, E. B. Kegley, and K. P. Coffey, University of Arkansas, Fayetteville.

M124 Yield potential of eastern gamagrass in central Wisconsin.
W. K. Coblenz*, W. E. Jokela1, M. G. Bertram1, and P. C. Hoffman1, US Dairy Forage Research Center, Marshfield, WI, University of Wisconsin, Madison.

M125 Nutritive value of pearl millet hay as affected by moisture concentration and bale sampling depth.
J. Kanani*, D. Philipp, K. P. Coffey, A. N. Young, R. Rhein, and J. D. Caldwell, University of Arkansas, Fayetteville.

M126 Characterization of plant cuticular wax markers in native grazing pastures of southwest Virginia.

M127 Statistical variation in predicting dry matter intake of Brahman bulls using the n-alkane technique.

M128 A comparison of anatomical and compositional differences of residual feed intake (RFI)-indexed Brahman bulls under grazing conditions.
T. D. A. Forbes*, F. M Rouquette2, L. O. Tedeschi1, R. D. Randle1, and F. R. B Ribeiro4, Texas AgriLife Research, Overton, Texas A&M University, College Station, Texas A&M University–Commerce.

M129 Chenopodium ciliaris in a silvopastoral system with Prosopis juliflora.
T. Clavero* and R. Razz, Centro de Transferencia de Tecnologia en Pastos y Forrajes, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.

M130 Quantifying terpenes in rumen fluid, serum, and plasma from sheep.
R. E. Estell*, S. A. Utsumi, and A. F. Cibils3, USDA, ARS, Jornada Experimental Range, Las Cruces, NM, Michigan State University, Kellogg Biological Station, Hickory Corners, New Mexico State University, Las Cruces.

M131 The effect of supplementing corn by-products or mesquite twigs on daily gain of Creole × Zebu young steers: A simulation model.
J. Maria Tapia-González*, A. Tewolde-Medin1, W. E. Grant1, J. C. Martinez-González2, H. Díaz-Solís4, A. Moreno-Valdés3, O. D. Montañez-Valdez1, J. A. Martinez- Ibarra1, and Gonzalo Rocha-Chavez1, CUSUR, U de G, Ciudad Guzman, Jalisco, Mexico, Unidad Académica Multidisciplinaria Agronomía y Ciencias, UAT, C. Victoria, Tamaulipas, Mexico, Wildlife and Fisheries Sciences, Texas A&M University, College Station, Area de Recursos Naturales, UAAAN, Saltillo Coahuila, Mexico, Area de Recursos Naturales, Instituto Tecnológico de Ciudad Victoria, C. Victoria, Tamaulipas, Mexico.
In Immunology and Pathology
Poultry Immunology and Pathology

M132  Effects of dietary beta-glucan on the T helper cytokine balance in the intestine of broiler chicks.  
C. M. Cox*, L. H. Stuard†, S. Kim†, A. P. McElroy†, M. Bedford†, and R. A. Dalloul1, 1Virginia Tech, Blacksburg, 1AB Vista Feed Ingredients, Marlborough, United Kingdom.

M133  Effect of capsicum and turmeric oleoresins with betaine on the performance of broilers challenged with coccidiosis.  
V. Brito†, C. Moynat*, A. Casarin†, M. Forat†, and D. Bravo†, 1Euronutec, Queretaro, Mexico, 2Pancosma, Geneva, Switzerland, 3Instituto Internacional de Investigacion Animal, Mexico.

M134  Excess dietary amino acids reduce splenic pro-inflammatory cytokine mRNA abundance and increase anti-inflammatory cytokine mRNA abundance during an acute phase response.  
A. Diaz†, N. Hamel†, K. Martorana†, R. Angel†, and B. D. Humphrey*†, 1California Polytechnic State University, San Luis Obispo, 2University of Maryland, College Park.

M135  Effects of repeated intravenous lipopolysaccharide injection on hematological characteristics of chicken blood.  

M136  Effects of dietary conjugated linoleic acid on macrophage functions in broilers immunosuppressed with cyclophosphamide.  
D. Liu*, F. Y. Long, Y. M. Guo, Z. Wang, and J. M. Yuan, China Agriculture University, Beijing, China.

M137  Broiler breeder feeding programs and trace minerals on cytokine gene expression response in progeny.  
N. M. Leandro†?, R. Ali†, M. Koci†, V. Moraes†, M. J. Wineland†, J. Brake†, and E. O. Oviedo-Rondón*†, 1North Carolina State University, Raleigh, 2Universidade Federal de Goiás, Goiania, GO, Brazil, 3Universidad Estadual Paulista, USP, Jaboticabal, SP, Brazil.

M138  Copy number variants in two genetically distinct chicken lines.  
X. Li†, W. Chou†, S. J. Lamont†, R. Groomjmas†, and H. Zhou†, 1Texas A&M University, College Station, 1Iowa State University, Ames, 2Wageningen University, PO Box 338, Wageningen, the Netherlands.

M139  Phage display selection and characterization of a single-chain antibody (scFv) against chicken CD40.  
D. Abi-Ghanem*†, C. -H. Chen*, L. Njongmeta†, J. Bray†, W. Mwangi†, S. D. Waghela†, J. L. McReynolds†, and L. R. Berghman†, 1Texas A&M University, College Station, 2U. S. Department of Agriculture, Agricultural Research Service, College Station, TX.

M140  Functional characterization of the avian macrophage migration inhibitory factor (MIF).  
S. Kim*†, K. B. Miska†, M. C. Jenkins†, R. H. Fetterer†, C. M. Cox†, L. H. Stuard†, and R. A. Dalloul1, 1Animal & Poultry Sciences, Virginia Tech, Blacksburg, 2Animal Parasitic Diseases Laboratory, ARS, USDA, Beltsville, MD.

M141  U. S. Veterinary Immune Reagent Network.  

Lactation Biology 1

M142  Expression of the development gene CAMK2G in the virgin mammary gland of the dairy goat.  
L. N. Wang, C. Li, Q. Z. Li*, and C. Y. Yuan, Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China.

M143  Effects of thyroxine, glucagon, and insulin on mRNA levels of heat shock proteins in bovine mammary epithelial cells under heat stress in vitro.  
R. L. Cui†, J. Q. Wang*†, H. Y. Wei†, D. P. Bu†, H. Hu1, and L. Y. Zhou†, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Faculty of Animal Science & Technology, Gansu Agriculture University, Lanzhou, China.

M144  Immunodetection of the secreted forms of osteopontin in bovine milk.  
N. Bissonnette†, C. Thibault†, and G. Robitaille*, 1Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, 2Agriculture and Agri-Food Canada, Food Research and Development Centre, Saint-Hyacinthe, QC, Canada, 3Université de Sherbrooke, Sherbrooke, QC, Canada.

M145  Differentiated immortalized porcine mammary epithelial cells grown on polysulfone hollow fiber provide a potential cell culture system for expression of recombinant proteins.  
T. C. Kuan*, Y. L. Sun*, C. Y. Yen†, and C. S. Lin†, 1Department of Biological Science and Technology, National Chiao Tung University, Hsinchu, Taiwan, 2Division of Biotechnology, Animal Technology Institute Taiwan, Miaoli, Taiwan.
M146 Effects of nutrient restriction on mammary cell activity and hormonal statement in lactating cows.
F. Dessauge1,2, V. Lollivier1,2, E. Cutulnic1,2, J. Portanguen1,2, C. Disenhaus1,2, S. Barbev1, B. Ponchon1,2, and M. Boutinaud1,2. 1INRA UMR 1080 Dairy Production, Saint Gilles, France, 2Agrocampus UMR 1080 Dairy Production, Rennes, France, 3INRA UE 326 Domaine Experimental du Pin aux Haras, Le Pin aux Haras, France.

M147 Effects of incremental sunflower seed supplementation on milk composition and mammary expression of genes regulating fatty acid uptake and lipogenesis.
J. W. Møller, T. Bjørn, P. K. Theil, M. T. Sørensen, and K. Sejrsen*, Faculty of Agricultural Science, Aarhus University, Tjele, Denmark.

M148 Principal component analysis of milk fatty acid composition and the relationships between stearoyl CoA desaturase genotype and conjugated linoleic acid production in dairy cattle.
J. Thomson*, L. Clark, M. Oba, and S. Moore, University of Alberta, Edmonton, AB, Canada.

M149 Improved lactation persistence and altered milk composition in growth hormone-treated mice is not linked to dramatic changes in mammary mitochondrial biogenesis or the degree of mTOR or AMP kinase phosphorylation.
W. Olea*, A. Parlow2, R. Collier3, and D. Hadsell1, 1Department of Animal Science, University of Wyoming, Laramie, WY, 2Bellman Animal Nutrition Mineral Supplements, Blacksburg, VA, 3Virginia Tech University, Blacksburg.

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**Meat Science and Muscle Biology**

**Beef Quality**

M150 Beef quality of bovines supplemented with vitamin E.
G. Aranda-Osorio*1, H. Barragan-Gonzalez1, M. Huerta-Bravo1, O. Hernandez-Mendo1, E. Maldonado-Siman1, and J. C. Garcia-Ortiz2, 1Universidad Autonoma Chapingo, Chapingo, Mexico, 2Colegio de Posgraduados, Montecillos, Mexico.

M151 Effect of vitamin E supplementation on the finishing of beef cattle.
G. Aranda-Osorio*, P. de la Cruz-Honorato1, R. Hernandez-Arrieta1, O. Hernandez-Mendo1, and J. C. Garcia-Ortiz1, Universidad Autonoma Chapingo, Chapingo, Mexico, Colegio de Posgraduados, Montecillos, Mexico.

M152 Influence of different forms of lipid supplements on physical characteristics of heifers’ meat fed on feedlot system.
M. C. A. Santana*, T. T. Berchielli1, R. A. Reis2, G. T. Pereira2, and R. C. Canesin2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2Bellman Animal Nutrition Mineral Supplements, Jaboticabal, São Paulo, Brazil.

M153 Effect of maternal nutritional status on muscle development and carcass characteristics in heifer progeny.

M154 Nutrient restriction during early prenatal growth and carcass characteristics of beef steers.

M155 Residual feed intake in three-cross beef heifers: Color and chemical composition of Longissimus dorsi muscle.
S. F. Reis1, P. V. R. Paulino*1, S. R. Medeiros2, S. C. Valadares Filho1, G. L. D. Feijó2, R. A. A. Torres Júnior2, R. O. Cristaldo2, R. A. Silva2, D. A. Fausto3, and J. Cavalli1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2EMBRAPA Gado de Corte, Campo Grande, MS, Brazil, 3Universidade de São Paulo, Piracicaba, SP, Brazil.

M156 Residual feed intake in three-cross beef heifers: Sensorial traits of Longissimus dorsi muscle.
S. F. Reis1, P. V. R. Paulino*1, R. A. Silva3, S. R. Medeiros2, S. C. Valadares Filho1, G. L. D. Feijó2, R. A. A. Torres Júnior2, F. A. Curci2, and M. A. Rezende1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2EMBRAPA Gado de Corte, Campo Grande, MS, Brazil, 3Universidade Federal do Mato Grosso do Sul, Campo Grande, MS, Brazil.

M157 Ageing process influence on fatty acids relations in yearling bulls fed different sources of omega3 and omega6.
A. A. M. Sampaio1, T. M. Pivaro2, E. A. Oliveira4, W. Henrique2, B. L. Rosa, and A. R. M. Fernandes4, 1FCAV/UNESP, Jaboticabal, SP, Brazil, 2APTA, São José do Rio Preto, SP, Brazil, 3UFMG, Dourados, MS, Brazil.

M158 Feeding flaxseed to beef cows increases concentrations of omega-3 fatty acids and linolenic acid biohydrogenation intermediates in subcutaneous fat.
M. L. He1,2, T. A. McAllister*1, J. P. Kastelic1, Y.-H. Chung1, K. A. Beauchemin1, P. S. Mir1, J. L. Aalhus2, M. E. R. Dugan2, and N. Aldai2, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada, 3University of Saskatchewan, Saskatoon, Saskatoon, SK, Canada.

M159 Effect of finishing system on subcutaneous fat melting point and fatty acid composition.
S. K. Duckett*, J. P. S. Neel2, W. S. Swecker1, J. P. Fontenot1, and W. Clapham2, 1Clemson University, Clemson, SC, 2USDA-ARS, Beaver, WV, 3Virginia Tech University, Blacksburg.
M160 Effects of supplemental dietary lipid sources on fatty acids compositions of Longissimus muscle in yearling bulls.
E. A. Oliveira*1, A. M. Sampao1, W. Henrique1, B. L. Rosa1, T. M. Pivaro1, and A. R. M. Fernandes1, 1FCAT/UNESP, Jaboticabal, SP, Brazil, 2APTA, São José do Rio Preto, SP, Brazil, 3UFGDF, Dourados, MS, Brazil.

M161 Fatty acid profile of intramuscular fat of young bulls grazing tropical pasture and supplemented with different strategies.

M162 How do n-3 fatty acids affect human perception of ground beef?

M163 Geometrical isomers of octadecenoic, octadecadienoic and octadecatrienoic acids from subcutaneous fat of British or Continental versus Nellore crossbred cattle slaughtered at different end points.
R. Mello*1, A. C. de Queiroz2, F. D. de Resende3, D. P. Duarte Lanna4, M. H. de Faria4, and E. da Costa Eifert4, 1Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, 2Universidade Federal de Viçosa, Viçosa, MG, Brazil, 3Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, 4Agência Paulista de Tecnologia dos Agronegócios, Colina, SP, Brazil, 4Universidade de São Paulo Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

M164 Fatty acid profiles of subcutaneous adipose tissue from cross young bulls produced by different genetic groups sires and slaughtered with distinct weights.
R. Mello*1, A. C. de Queiroz2, F. D. de Resende3, D. P. Duarte Lanna4, M. H. de Faria4, and E. da Costa Eifert4, 1Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, 2Universidade Federal de Viçosa, Viçosa, MG, Brazil, 3Agência Paulista de Tecnologia dos Agronegócios, Colina, SP, Brazil, 4Universidade de São Paulo Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

M165 Meat quality of Nellore heifers finished at pasture, in tropical conditions, supplemented with crushed sunflower.

M166 Longissimus dorsi muscle fiber profile in young bulls grazing tropical pasture and supplemented with different strategies.
J. Cavalli1,1, P. V. R. Paulino1, I. Lage2, C. A. Neves3, M. V. Santos4, M. F. Paulino5, R. Justino6, J. F. H. Rodrigues7, and D. Melo8, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, MG, Brazil, 3JBS Friboi, Barretos, SP, Brazil, 4Universidade Estadual Paulista, Jaboticabal, SP, Brazil.

M167 Effect of concentrate- vs. forage-based finishing diet on carcass traits, beef palatability, and color stability of longissimus muscle from Angus heifers.

M168 Does creep feed and backgrounding energy source affect lifetime growth performance and carcass characteristics of nursing calves pastured on annual ryegrass?
M. S. Gadberry*1, P. A. Beck2, B. Barham2, W. Whitworth2, and J. Apple2, 1University of Arkansas, Little Rock, 2University of Arkansas, Hope, 3University of Arkansas, Monticello, 4University of Arkansas, Fayetteville.

M169 Does creep feed and backgrounding energy source affect lifetime growth performance and carcass characteristics of nursing calves pastured on improved warm-season grasses?
B. Barham1, P. A. Beck2, M. S. Gadberry1, W. Whitworth2, and J. Apple2, 1University of Arkansas, Little Rock, 2University of Arkansas, Hope, 3University of Arkansas, Monticello, 4University of Arkansas, Fayetteville.

M170 Genetic group and slaughter weight influence on meat quality of feedlot cattle.
R. Mello*1, F. D. de Resende2, A. C. de Queiroz2, M. H. de Faria2, R. A. Possenti3, and G. F. Alleoni4, 1Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, 2Agência Paulista de Tecnologia dos Agronegócios, Colina, SP, Brazil, 3Universidade Federal de Viçosa, Viçosa, MG, Brazil.

M171 Animal health effects on carcass quality.
T. M. Jeske*, R. J. Maddock, and K. R. Carlin, North Dakota State University, Fargo.

M172 Effect of garlic and onion on the thiobarbituric acid reactive substances (TBARS), volatile compounds and sensory evaluations of irradiated cooked ground beef.
Graduate Student Poster Competition
National ADSA Dairy Foods Poster

E. Stefanutti* and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.

M174  The effect of different inulin types on the formation of rennet-induced gels.
A. Foo*, A. R. Hill, and M. Corredig, University of Guelph, Guelph, Ontario, Canada.

M175  Impact of temperature and fat content on bleaching of liquid whey.
M. A. D. Listyani**, R. E. Campbell1, R. E. Miracle1, D. M. Barbano1, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Cornell University, Ithaca, NY.

M176  Bleaching liquid Cheddar whey using ultraviolet radiation.
E. J. Kang* and M. A. Drake, North Carolina State University, Raleigh.

M177  Development and analysis of a dairy-based nutrient dense gel food rich in milk bioactives.
M. Cleveland* and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.

M178  Identification of bioactive peptides derived from fermentation of organic milk.
S. R. Pritchard*, M. Phillips, and K. Kailasapathy, University of Western Sydney, East Richmond, New South Wales, Australia.

M179  Increasing stringiness of low fat Mozzarella cheese using polysaccharides.
E. N. Oberg*1, K. M. Larsen1, D. A. Irish1, M. M. Motawee2,1, and D. J. McMahon1, 1Western Dairy Center, Utah State University, Logan, 2National Organization for Drug Control and Research, Cairo, Egypt.

M180  Enrichment of low fat Cheddar cheese with dietary fiber.
R. Wadhwni*, D. J. McMahon, and D. A. Irish, Utah State University, Logan.

M181  Development of a rapid method for determination of lactose in process cheese using blood glucose meter.
A. C. Biswas*, J. Amamcharla, and L. E. Metzger, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

M182  Monitoring changes in the non-casein nitrogen fraction of raw milk during storage using casein/fat standardizer (CFS).
P. Salunke*, J. Amamcharla, and L. E. Metzger, Midwest Dairy Foods Research Centre, South Dakota State University, Brookings.

M183  Impact of xylitol on the functional properties of low fat process cheese.

M184  Application of salt whey in process cheese food made from young Cheddar cheese containing exopolysaccharides.
O. Janevski*, A. N. Hassan, and L. Metzger, South Dakota State University, Brookings.

M185  Prediction of water activity of natural cheese using a model cheese system.
J. Grummer* and T. C. Schoenfuss, University of Minnesota, St. Paul.

M186  Optimization of a CO2 injection method for increasing the permeate flux in cold microfiltration of skim milk.

M187  Polysaccharide addition to low fat Cheddar cheese to improve texture.
R. Kumar* and T. C. Schoenfuss, University of Minnesota, St. Paul.

M188  Effect of concentration and temperature on the rheological properties of 95% serum protein (SP) reduced micellar casein concentrates (MCC).
A. Sauer*, C. Beliciu, and C. I. Moraru, Cornell University, Ithaca, NY.

M189  Formation of bacterial biofilms on spiral wound reverse osmosis whey concentration membranes and its influence on retentate quality.
M. Avadhanula*, A. C. Biswas, S. Anand, and A. Hassan, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

M190  Thermal aggregation of whey proteins in the presence of buttermilk.
M. Saffon**1, M. Britten1, and Y. Poulit1, 1STELA Dairy Research Center, Institute of Nutraceuticals and Functional Food (INAF), Université Laval, Québec, QC, Canada, 2Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada, St-Hyacinthe, Québec, Canada.
Graduate Student Poster Competition
National ADSA Production MS Poster
Chair: Arnold Hippen, South Dakota State University

M191 Assessment of tannin-free and tanniferous legumes in lactating dairy diets using continuous culture.
C. M. Williams*,1, C. M. Dschaak1, J.-S. Eun1, J. W. MacAdam1, and A. J. Young1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department of Plants, Soils, and Climate, Utah State University, Logan.

M192 Post-treatment outcomes of clinical mastitis on commercial dairy farms.
C. Pinzón-Sánchez*, C. Hulland, and P. L. Ruegg, University of Wisconsin, Madison.

M193 Assessment of prior grazing experiences on adaptation to pasture and performance of dairy heifers.
F. Lopes*,1, D. K. Combs1, P. C. Hoefman1, N. M. Esser1, and W. Cobletz1,2, 1University of Wisconsin, Madison, 2US-Department of Agriculture/Agricultural Research Service, Marshfield, WI.

M194 Seasonal variation of nutrients and in vitro dry matter degradability of forage hay.

M195 Performance of Holstein heifers supplemented with probiotics.
J. Graves*,1, S. Hill1, E. Suever1, B. Rude1, and Y. Vizzier-Thaxton3, 1Department of Animal and Dairy Science, Mississippi State University, Mississippi State, 2College of Veterinary Medicine, Mississippi State University, Mississippi State, 3Department of Poultry Science, Mississippi State University, Mississippi State.

Graduate Student Poster Competition
National ADSA Production PhD Poster
Chair: Arnold Hippen, South Dakota State University

M196 Effects of condensed tannins supplementation on ruminal fermentation and lactational performance of dairy cows when fed high or low forage diet.
C. M. Dschaak*, C. M. Williams, M. S. Holt, J.-S. Eun, and A. J. Young, Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan.

M197 Relationships between prepartum energy intake and reproductive parameters in Holstein cows.
F. C. Cardoso*, M. R. Murphy, and J. K. Drackley, University of Illinois, Urbana.

M198 Effectiveness of an herbal remedy compared to control or traditional therapy in dry off treatments.

M199 Serum pregnancy-associated glycoprotein (PAG) and progesterone concentrations after induction of pregnancy loss at day 39 of gestation in lactating dairy cows.
J. O. Giordano*,1, J. N. Guenther1, G. Lopes Jr.1, M. F. McGrath2, and P. M. Fricke1, 1University of Wisconsin, Madison, 2Monsanto Agricultural Company, St. Louis, MO.

M200 Prepartum 2,4-thiazolidinedione alters gene expression of peroxisome proliferator-activated receptor gamma and leptin in the adipose tissue of dairy cows.

M201 Effects of cobalt supplementation and vitamin B12 injections on energy metabolism of dairy cows.
M. S. Akins*,1, S. J. Bertics1, M. T. Socha1, and R. D. Shaver1, 1University of Wisconsin, Madison, 2Zinpro Corporation, Eden Prairie, MN.

M202 Genetic analysis of type traits in the Holstein population of Iran.

M203 Effects of porcine relaxin on motility characteristics of boar sperm as assessed by computer-assisted sperm analysis (CASA).
Response surface model for broiler chickens performance fed diets varying in digestible protein and amino acids.
H. Ahmadi and A. Golian*, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

Partitioning of lysine stable isotopes in broiler breeders during the transition into sexual maturity.

Varying levels of dietary methionine inclusion on the hematology and serum biochemistry of broilers.
G. O. Adeyemo* and A. D. Ologhobo, University of Ibadan, Ibadan, Oyo, Nigeria.

Separate response to lysine and methionine in broiler starter diets.

Effect of crude protein and essential:nonessential amino acids ratio on nitrogen balance in broiler.
C. C. Goulart1, F. G. P. Costa*1,* E. T. Nogueira2, M. Kutschenko2, H. S. Rostagno3, C. F. S. Oliveira3, R. C. L. Neto1, and V. P. Rodrigues1, 1Federal University of Paraiba, Areia, PB, Brazil, 2Ajinomoto Animal Nutrition, Sao Paulo, SP, Brazil, 3Federal University of Viçosa, MG, Brazil.

True ileal amino acid digestibility and protein utilization in broilers fed various levels of canola meal and phytase.
C. Kong* and O. Adeola, Purdue University, West Lafayette, IN.

Separate response to lysine and methionine in broiler grower diets.

Digestive arginine:lysine ratios for broilers during the starter and finisher periods.
A. Campos1, E. T. Nogueira2, L. F. Albino1, and H. S. Rostagno*1, 1Federal University of Viçosa, Viçosa, MG, Brazil, 2Ajinomoto Animal Nutrition, São Paulo, SP, Brazil.

Effect of a mono component proteose on true amino acid digestibility of a corn and soybean meal diet for chicks.
R. K. G. Mesias1, L. F. T. Albino1, J. O. B. Sorbara1, and H. S. Rostagno*1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2DSM Nutritional Products, São Paulo, SP, Brazil.

Performance of white commercial layers fed with different threonine:lysine ratio.
F. G. P. Costa*1, M. R. Lima1, E. T. Nogueira1, L. Sá1, J. H. V. Silva1, H. S. Rostagno1, C. C. Goulart1, R. B. Souza1, S. A. N. Morais1, and G. S. Lima1, 1Federal University of Paraiba, Areia, PB, Brazil, 1Ajinomoto Animal Nutrition, Sao Paulo, SP, Brazil, 2Federal University of Viçosa, MG, Brazil.

Digestive valine:lysine and isoleucine:lysine ratios for brown egg laying hens.
G. Lelia1, E. T. Nogueira1, L. F. Albino1, and H. Rostagno*1, 1Federal University of Viçosa, Viçosa, MG, Brazil, 2Ajinomoto of Brazil/Ajinomoto Animal Nutrition, São Paulo, SP, Brazil.

Influence of diet formulation technique on requirements of sulfur amino acids and lysine to brown egg laying hens.
J. H. V. Da Silva1,2, L. Elizondo2,1, P. B. Lacerda1, D. V. Gonçalves Vieira2, C. T. Silva1, J. J. Filho1, M. L. Gomes Ribeiro1, J. M. Batista De Souza1, J. A. De Araújo1, E. L. Da Silva1, and F. G. Perazzo Costa2, 1Federal University of Paraíba, Areia, Paraíba, Brazil, 2CCA-Universidade Federal da Paraíba, Paraíba, Brazil.

Amino acid digestibility in corn, soybean meal, field peas, and corn co-products fed to weanling pigs.
G. I. Petersen* and H. H. Stein, University of Illinois, Urbana.

Pyrolysis infusion of arginine increases portal vein blood flow in growing pigs.
S. W. Kim*1, M. I. Perret-Gentil2, M. W. Hart3, and R. D. Mateo2, 1North Carolina State University, Raleigh, 2The University of Texas at San Antonio, 3Georgia State University, Atlanta, 4Texas Tech University, Lubbock.

Apparent and standardized ileal digestibilities of amino acids for pigs fed corn-soybean meal-based diets at varying crude protein levels.
H. Zhai* and L. Adeola, Purdue University, West Lafayette, IN.

Influence of total lysine level provided during the finishing period on carcass, meat and fat characteristics of heavy barrows and gilts.
M. A. Latorre*, J. A. Rodríguez-Sánchez2, M. Blanco2, M. A. Sanz2, and M. Joy2, 1Universidad de Zaragoza, Spain, 2CITA de Aragón, Zaragoza, Spain.

Comparison of amino acid digestibility of corn, corn distillers dried grains with solubles (DDGS), meat and bone meal (MBM), and poultry-by-product meal (PBPM) determined with the precision-fed cecostomy rooster assay and the standardized ileal amino acid digestibility chick assay.
E. J. Kim*, P. L. Utterback1, T. J. Applegate1, and C. M. Parsons1, 1University of Illinois at Urbana-Champaign, 2Purdue University, West Lafayette, IN.
Feeding a diet containing specific excess amino acids minimizes the reduction in performance and carcass traits associated with an inflammatory response.
A. Diaz¹, M. Raymond², R. Angel³, and B. D. Humphrey⁴, ¹California Polytechnic State University, San Luis Obispo, ²University of Maryland, College Park.

Amino acid digestibility of various feedstuffs of plant and animal origin using three different methods.
E. J. Kim*, C. M. Jacobs, P. L. Utterback, and C. M. Parsons, University of Illinois at Urbana-Champaign.

Effect of the use of L-valine and metabolizable energy levels of diet on nitrogen intake, retention and apparent excretion in broilers.
F. G. P. Costa*¹, C. C. Goulart³, E. T. Nogueira³, M. Kutschkenko³, J. H. V. Silva³, V. P. Rodrigues³, G. B. V. Lobato³, and R. C. L. Neto³, ¹Federal University of Paraíba, Areia, PB, Brazil, ³Ajinomoto Animal Nutrition, Sao Paulo, SP, Brazil.

Effect of the use of L-valine and metabolizable energy levels of diet on body composition of broilers.
F. G. P. Costa*¹, C. C. Goulart³, E. T. Nogueira³, M. Kutschkenko³, J. H. V. Silva³, V. P. Rodrigues³, and R. C. L. Neto³, ¹Federal University of Paraíba, Areia, PB, Brazil, ³Ajinomoto Animal Nutrition, Sao Paulo, SP, Brazil.

Different protein and conjugated linolenic acid levels on broilers diets.
T. Previero¹, C. J. C. Castillo², N. B. Petrolí³, R. Albuquerque³, C. S. S. Araujo⁴, and L. F. Araujo³, ¹University of Sao Paulo, Pirassununga, SP, Brazil, ²University of Sao Paulo, Piracicaba, SP, Brazil, ³University of Sao Paulo, Sao Paulo, SP, Brazil, ⁴Poultry Nutritionist, Pirassununga, SP, Brazil.

Effect of dietary arginine, glutamine, and tryptophan on growth performance, gut morphology, and meat quality of broilers.
S. J. Park*¹, C. Z. Alvarado¹, and S. W. Kim², ¹Texas Tech University, Lubbock, ²North Carolina State University, Raleigh.

Dietary supplementation of L-glutamine and L-glutamate or sodium butyrate during early growth of female broilers.
Y. Avellaneda*¹, J. Hernandez¹, C. Ariza-Nieto², and G. Afanador¹,², ¹Universidad Nacional de Colombia, Bogota, Colombia, ²CORPOICA, Bogota, Colombia.

Evaluation of the fixed crude protein conversion factor (6.25) versus ingredient specific conversion factors.
N. Sriperm*¹, G. M. Pest¹, and P. B. Tillman¹, ¹University of Georgia, Athens, ²Ajinomoto Heartland LLC, Chicago, IL.

Effect of dietary probiotic and prebiotic on ileal nutrient digestibility of Ross broiler chickens.
H. Ziaie*¹, A. Zeinali², M. Bashtani³, M. A. Karimi Torshizi⁴, G. H. Hadarbadi⁵, H. Farhangfar⁵, and A. Nasr Abad⁵, ¹Agriculture and Natural Resources Research Center, Birjand, South Khorasan, Iran, ²Ferdowsi University, Mashhad, Iran, ³Birjand University, Birjand, Khorasan, Iran, ⁴Tarbiat Moddares University, Tehran, Iran.

Tryptophan, niacin, and insulin metabolism in weaned pigs?
J. J. Matte*¹, Y. Primot², and N. LeFloc'h², ¹Agriculture and Agri-Food Canada, Dairy & Swine R & D Centre, Sherbrooke, QC, Canada, ²Ajinomoto-Eurolysine SAS, Paris, France, ³Institut National de la Recherche Agronomique (INRA), UMR-SENAH, St-Gilles, France.

Effect of glutamine and temperature on performance of broiler chickens.
S. Cerrate*¹, R. Ekmary, C. Salas, and C. Coon, University of Arkansas, Fayetteville.

Effect of dietary protein content on cecal microbial ecosystem and mortality of young rabbits.
S. Chamorro¹, R. Carabaño¹, J. García¹, I. Badiola¹, G. G. Mateos*², and C. de Blas³, ¹Instituto del Frío-ICTAN, CSIC, Madrid, Spain, ²Universidad Politécnica de Madrid, Madrid, Spain, ³CReSA (UBA-IRTA), Bellaterra, Spain.

Effect of lysine and leucine levels in wheat-based diets on the expression of two cationic amino acid-transporter proteins in growing pigs.
M. A. Barrera¹, A. Morales*, M. Cervantes, A. B. Araiza, E. Avelar, and D. González, ICA, Universidad Autónoma de Baja California, Mexicali.

Effect of high lysine and leucine levels in wheat-based diets on performance and muscle expression of myosin mRNA in growing pigs.
M. A. Barrera¹, M. Cervantes*¹, A. Morales¹, A. Araiza¹, D. Cervantes¹, V. Méndez², and H. Bernal³, ¹ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, ²Universidad Autónoma de Nuevo León, Monterrey, NL, México.

The effect of different animal and vegetable protein sources on the feed intake and weight gain of piglets.
D. Sola-Oriol¹, J. Figueroa¹, E. Borda², C. Chetrit², and J. F. Pérez¹, ¹Univestit Autònoma de Barcelona, Bellaterra, Spain, ²Bioiberica, Palafolls, Spain.

Aflatoxins and productive performance of two broiler breeder genotypes.
A. Scher*¹, A. P. Rosa¹, J. M. Santurio¹, A. Londero¹, T. N. N. Vieira¹, and J. A. G. Ferreira Jr.¹, ¹Poultry Laboratory – Universidade Federal de Santa Maria, RS, Brazil, ²Lapemi–Universidade Federal de Santa Maria, RS, Brazil.

Progeny of broiler breeders from two genotypes intoxicated with aflatoxins.
A. Scher*¹, A. P. Rosa¹, J. M. Santurio¹, A. Londero¹, G. Farina², and J. A. G. Ferreira Jr.¹, ¹Poultry Science Lab – Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, ²Lapemi– Universidade Federal de Santa Maria, Santa Maria, RS, Brazil.
Nonruminant Nutrition
Feed Ingredients

M238 The effects of the dietary supplementation with essential oils from selected species of the Lamiaceae family on the performance of growing broiler chickens.
L. Roldan*, C. Ariza-Nieto, G. Diaz, and G. Afanador1,2, 1Universidad Nacional de Colombia, Bogota, Colombia; 2CORPOICA, Bogota, Colombia.

M239 Effect of crude glycerine on the performance of female broilers chickens at high altitude.
C. Ariza-Nieto*, Y. Avellaneda, and G. Afanador1,2, 1CORPOICA, Bogota, Colombia; 2Universidad Nacional de Colombia, Bogota, Colombia.

M240 Vitamin E, herbs and spices in broilers diets: Evaluation of oxidative stability of pre-cooked meat balls.
A. M. C. Racanicci*, J. F. M. Menten, and M. Nascente, 1University of Brasilia (UnB), Brasilia, DF, Brazil; 2University of Sã o Paulo (ESALQ), Piracicaba, SP, Brazil.

M241 Effect of technical-grade glycerin on the performance of brown laying hens at high altitude.
Y. Avellaneda*, 1, D. Cifuentes, 2G Afanador1,2, and C. Ariza-Nieto, 1CORPOICA, Bogota, Colombia; 2Universidad Nacional de Colombia, Bogota, Colombia.

M242 Effects of Korean herb supplementation (Paeniae radix, Angelicae gigantis radix, Cnidium rhizome and Polygoni multiflori radix) on growth performance, nutrient digestibility, blood characteristics, meat quality and fatty acid content of meat of growing pigs.

M243 Effects of dietary bamboo vinegar supplementation on growth performance, blood characteristics, meat quality, fatty acid content and fecal malodor emission in finishing pigs.

M244 The effects of caper (Capparis ovata Desf.) on some hematological parameters and organs of Lohmann roosters.
O. Yildiz-Gulay*, 1, S. Gulay, A. Balic, and A. Ata, 3Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey; 1Sakarya Toyota Hospital, Sakarya, Turkey.

M245 Safety evaluation of Event 5307 transgenic corn in broiler chickens.
A. Sauvè* and J. T. Brake*, 1Department of Poultry Science, North Carolina State University, Raleigh, 2Syngenta Biotechnology, RTP, Raleigh, NC.

M246 Effect of garlic extract (Garlicon) on piglet productive performance in the nursery period.
J. Morales, R. López, P. Coscojuela, and C. Piñeiro*, 1PigCHAMP Pro Europa, Segovia, Spain; 2Previa Feed Extracts, Toledo, Spain.

M247 Effect of different levels of substitution of maniçoba hay on the performance of free-range birds in the semi-arid region.
P. E. N. Glvisiez*, 1, M. A. S. F. Campos, 2C. C. Goulart, 3F. G. P. Costa, and J. H. V. Silva, 1Universidade Federal da Paraíba, Areia, PB, Brazil; 2Universidade Federal do Rio Grande do Norte, Natal, RN, Brazil.

M248 Performance of broilers fed mash or pellet diets containing whole or ground pearl millet.

M249 Using marine algae chlorella vulgaris as a prebiotic alternative on broiler chicks.
M. Rezvan*, 1, M. Zaghari, 2M. Shivaazad, and H. Moravej, 3University of Tehran, Karaj, Tehran, Iran.

M250 Effects of mung bean waste on pelleting characteristics, growth performance, nutrient digestibility and carcass quality in broilers.
N. Amornthewaphat*, 1, P. Rungcharoen, 2Y. Ruangpanit, 3S. Rattanatambitmthong, and 4S. Attamangkune, 1Kasetsart University, Bangkok, Thailand.

M251 Effects of dietary grape seed polyphenols on plasma lipid and mineral contents, and intestinal microflora in broiler chicks.
A. Viveros*, 1, S. Chamorro, 2A. Brena, 3C. Romero, 4I. Aria, and 5C. Centeno, 1Facultad de Veterinaria, UCM, Madrid, Spain; 2Instituto del Frío-Ictan, CSIC, Madrid, Spain; 3Escuela Técnica Superior de Ingenieros Agronomos, UPM, Madrid, Spain.

M252 Comparison of dietary supplementation of cumin essential oil and prebiotic on humoral immune response, blood metabolites and performance of broiler chickens.
M. Aami-Azghadi, 1, A. Golian, 2H. Kermanshahi, and M. Sedghi, 3 Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

M253 Effect of ginger root and ginger oil on antioxidant status and meat quality of broilers.
G. F. Zhang, 1Z. B. Yang*, 1W. Yang, 2W. R. Yang, 3S. Z. Jiang, 1Shandong Agricultural University, Tai-an, Shandong, China; 2Agriculture and Agri-Food Canada, Leithbridge Research Centre, Leithbridge, AB, Canada.
M254 Utilization of mexican sunflower (Tithonia diversifolia, Hemsley A gray) leaf meal on the average production cost and returns of broiler chicks.
A. H. Ekeocha*,1, A. Akinfemi1, O. A. Adju1, and O. A. Adebiyi1, 1Department of Animal Science University of Ibadan, Ibadan, Oyo State, Nigeria, 1Faculty of Agriculture, Nasarawa State University, Shada - Lafia Campus, Nasarawa State, Nigeria, 3Department of Animal Production and Health, Federal University of Technology, Akure, Ondo State, Nigeria, 3Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria.

M255 Dietary supplementation of medicinal plants and organic acid on serum lipid profile in Ross broilers.
H. Ziaie*,1, A. Zeinali2, G. H. Hadarbadi1, M. A. Karimi Torshizi4, M. Bashtani3, and H. Farhangfar3, 1Agriculture and Natural Resources Research Center, Birjand, South Khorasan, Iran, 2Ferdowsi University, Mashhad, Iran, 3Birjand University, Birjand, Khorasan, Iran, 4Tarbiat Modasses University, Tehran, Iran.

M256 Changes of internal egg quality during cold storage when hens fed diets containing cottonseed meal treated with sodium bentonite.
A. Gilani, H. Kermanshahi, A. Golian*, and A. Tahmasbi, Ferdowsi University of Mashhad, Mashhad, Iran.

M257 Sensory characteristics of table eggs from laying hens fed diets containing hemp oil or hemp seed.
E. Goldberg*, D. Ryland, N. Gakhar, J. D. House, and M. Aliani, University of Manitoba, Winnipeg, MB, Canada.

M258 Effect of guar meal as a source of protein on laying hens performance.
P. Soleimani, A. Golian*, H. Kermanshahi, and M. Sedghi, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

M259 Effect of dietary supplementation of licorice extract on egg quality and performance of hens.
M. Sedghi, A. Golian*, and P. Soleimani, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

M260 Effects of fermented garlic powder supplementation on production performance, egg quality and blood characteristics of laying hens.

M261 Effects of marine algae (Spirulina platensis) on egg yolk color and laying hens performance.
N. Zahroojian, H. Moravej*, and M. Shivazd, University of Tehran, Karaj, Tehran, Iran.

M262 Use of salvage pet food in diets of weaned pigs.
J. P. Holt and S. J. Gasca*, Illinois State University, Normal.

M263 Effect of meat powder supplementation on growth performance, nutrient digestibility and blood characteristics of growing pigs.

M264 Effects of fermented garlic powder on growth performance and blood profiles of weanling pigs.

M265 Evaluation of algae meal from Nannochloropsis oculata as a protein source for non-ruminant animals.
B. A. Howe**, 1L. N. Roman-Muniz1, B. D. Willson2, and S. L. Archibeque1, 1Department of Animal Sciences, Colorado State University, Fort Collins; 2Department of Mechanical Engineering, Colorado State University, Fort Collins.

M266 The effect of supplementation with ginger on dietary oxidation stability.
X. Zhao and Z. B. Yang*, Shandong Agricultural University, Tai-an, Shandong, China.

M267 Effects of dietary wild–ginseng adventitious root meal on egg quality, egg production, and fatty acid content of yolk in egg produced by laying hens.

M268 Effect of a mixture of turmeric and capsicum oleoresins and of a garlic botanical on broiler chickens performance and intestinal histology.
D. Bravo*, T. G. Petrolli1, L. F. T. Albino2, and H. S. Rostagno2, 1Pancosma, Geneva, Switzerland, 2Federal University of Vícosa, Department of Animal Science, Vícosa, Brazil.

M269 Effects of dietary medicinal plants (artemisia, ancahtopanax, and garlic) on productive parameters in pigs.
J. H. Jung*, H. D. Jang1, T. X. Zhou2, S. H. Oh2, R. C. Noble1, and I. H. Kim2, 1Department of Animal Resource and Science, Dankook University, Cheonan, Chungnam, Korea, 2Department of Animal Science, North Carolina A&T State University, Greensboro.

M270 Effects of cassava on production performance and relative organ weight in Korean native broilers.
**Physiology and Endocrinology**

**Nutritional Effects on Reproduction and Development**

**M271**
**Effects of cassava on production performance and egg quality in laying hens.**

**M272**
**Inclusion of shrimp heads meal (Litopenaeus spp.) and red crab meal (Pleuroncodes planipes) in rations for laying hens, and its effect on the egg physical and sensorial quality, at different time and temperature of storage.**

**M273**
**The effect of medicinal plants and plant extracted oils on broiler duodenum morphology and immunological profile.**
L. Stef, G. Dumitrescu, D. Drinceanu, D. Mot, C. Julean, R. Tetleau, and M. Hume, 1AR, FFSRU, College Station, Texas, USA, 2Department of Animal Resource and Science, Dankook University, Cheonan, Chungnam, Korea

**M274**
**Effects of dietary polyphenol-rich grape products on gut morphology and intestinal microflora in broiler chicks.**
A. Viveros*, S. Chamorro, M. Pizarro, W. Siqueira, C. Centeno, I. Aria, and A. Brenes, Facultad de Veterinaria, UCM, Madrid, Spain, Instituto del Frio-Ictan, CSIC, Madrid, Spain, Faculdade de Veterinaria, Universidade Estadual do Ceara, Fortaleza, Brazil.

**M275**
**Effects of hemp oil on the expression of FADS1, FADS2, and ELOVL5 in laying hens.**
M. Jing*, N. Gakhar, E. Goldberg, and J. D. House, University of Manitoba, Winnipeg, Canada.

**M276**
**Dietary supplementation effects of oregano essential oils on intestinal digest microbial community in broilers under high altitude conditions.**
L. Betancour**, V. Phandanouvong, F. Rodriguez, C. Ariza-Nieto, M. Hume, D. Nisbet, and G. Afanador-Téllez, 1Universidad de La Salle, Bogotá, Colombia, 2Universidad Nacional de Colombia, Bogotá, Colombia, 3CORPOICA, Bogotá, Colombia, 4USDA, ARS, FFSRU, College Station, Texas, USA.

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**POSTERS**

**MONDAY**
M284 **Blood urea nitrogen and nonesterified fatty acid concentrations in the umbilical blood of fetal pigs at day 90 and 110 of gestation.**
T. A. Wilmoth*, C. O. Lemley, and M. E. Wilson, *West Virginia University, Morgantown.*

M285 **Effect of dry period lengths on follicular dynamics in early lactation Holstein cows.**
A. Soleimani1,2*, A. Heravi Moussavi3, M. Danesh4, G. Goliyan5, and S. Safa6, 1Islamic Azad University-Kashmar Branch, Kashmar, Khorasan Razavi, Iran, 2Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

M286 **The application of Target bovine CL progesterone test kit for early pregnancy diagnosis in ewes.**

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**Physiology and Endocrinology**

**Pregnancy**

M284 **Blood urea nitrogen and nonesterified fatty acid concentrations in the umbilical blood of fetal pigs at day 90 and 110 of gestation.**
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**Physiology and Endocrinology**

**Reproductive Endocrinology**

M287 **Endocrine events during the periestrus period and the effect of various PMSG on estrus synchronization in shall ewes.**
T. Saberifar, H. Kohram*, and E. Dirandeh, *University of Tehran, Karaj, Tehran, Iran.*

M288 **Reproductive endocrine profile in ewes with different thickness of dorsal fat added with bypass fat.**

M289 **Effects of human chorionic gonadotropin on serum progesterone concentrations, embryonic survival and lambing rates in ewes.**
L. M. Lankford*, D. T. Yates2, R. A. Halalsheh1, P. L. Black1, D. M. Halford4, and T. T. Ross1, 1New Mexico State University, Las Cruces, 2University of Arizona, Tucson.

M290 **Administration of genistein does not alter anterior pituitary concentrations of LH and IGF-I in ovariectomized gilts.**
C. Paulson*, A. Taylor, and J. Clapper, *South Dakota State University, Brookings.*

M291 **Changes in plasma concentrations of growth hormone and luteinizing hormone in ewes following central and peripheral treatment with kisspeptin.**
B. K. Whitlock*, J. A. Daniel2, B. P. Steele3, and J. L. Sartin4, 1Department of Large Animal Clinical Sciences, College of Veterinary Medicine, The University of Tennessee, Knoxville, 2Department of Animal Science, Berry College, Mt. Berry, GA, 3Department of Anatomy, Physiology and Pharmacology, College of Veterinary Medicine, Auburn University, Auburn, AL, 4Agricultural Experiment Station, Auburn University, Auburn, AL.

M292 **Temporal changes during the periparturient period on metabolic and endocrine parameters of spring-calving beef cows in grazing conditions.**
A. L. Astessiano*, R. Pérez-Clariget1, G. Quintans2, P. Soca3, and M. Carriquiry4, 1School of Agronomy, Udelar, Uruguay, 2Instituto Nacional de Investigación Agropecuaria, Treinta y Tres, Uruguay.

M293 **Metabolic measurements in the sow and relationship to post-weaning reproductive performance.**
L. A. Rempel*, J. L. Vallet, and D. J. Nonneman, *USDAS, ARS, USMARC, Clay Center, NE.*

M294 **Lipoic acid decreases progesterone clearance rates in ovariectomized ewes.**
R. S. Mottet*, C. O. Lemley2, E. L. Berg3, E. P. Berg3, and K. A. Vonnahme1, 1Department of Animal Science, Berry College, Mt. Berry, GA, 2Department of Anatomy, Physiology and Pharmacology, College of Veterinary Medicine, Auburn University, Auburn, AL, 3Agricultural Experiment Station, Auburn University, Auburn, AL.

M295 **Zearalenone increases reproductive tract development, but not skeletal muscle signaling in prepubertal gilts.**

M296 **Quantitative bioluminescence imaging of porcine antral follicles in vitro.**
S. Jung* and S. T. Willard, *Mississippi State University, Mississippi State.*

M297 **Feed restriction and pre-synchronization on progesterone concentration and LH peak in ewes on a synchronization program.**
Progesterone and insulin concentration on ewes with different body condition fed bypass fat in a superovulatory program.


Physiology and Endocrinology
Reproductive Management

Effect of prepartum somatotropin on milk production, metabolism, and reproduction in primiparous Holstein dairy cows.


Effect of dietary energy on ovarian development and fertility in postpuberal beef heifers.


The pH decreases in the vaginal portion of the cervix in mares near ovulation.

J. J. Parrish*, University of Wisconsin, Madison.

Main endocrine-metabolic differences between 1st and 2nd lactation of the dairy cows around calving.


Effect of thermal preconditioning during the prebreeder period on breeder turkey hens’ reproductive performance.


Production, Management and the Environment

Microbiology

In vitro investigation of anti-Escherichia coli O157:H7 effects of free fatty acids under acidic conditions.

J. Yang*12, X. Hou1, P. S. Mir2, and T. A. McAllister2, 1Inner Mongolia Agricultural University, Hohhot, China, 2Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada.

A more specific and sensitive detection method for avian influenza H5N1 using antibodies against N1 subtype and red blood cell amplification in an impedance biosensor.

J. Lum*1, R. Wang1, D. Abi-Ghanem2, B. Hargis1, L. Berghman2, S. Tung1, and Y. Li1, 1University of Arkansas, Fayetteville, 2Texas A&M University, College Station.

Survival of Escherichia coli O157:H7 incubated with corn- or wheat-based dried distillers grains with solubles in ruminal or fecal inoculum.

H. E. Yang12, W. Z. Yang1, J. J. McKinnon1, T. W. Alexander1, Y. L. Li1, and T. A. McAllister*, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada, 2University of Saskatchewan, Saskatoon, SK, Canada.

The effect of fungus myceliated grain supplement in different feeding phases on coccidiosis and production performance of broilers.


Production, Management and the Environment
Poultry

Tibial dyschondroplasia in four crosses of male commercial broilers and its relationship to gait score.

P. Y. Hester*, P. N. Talaty1, and M. N. Katanba2, 1Purdue University, W. Lafayette, IN, 2Cobb-Vantress, Inc., Monicello, KY.

Impact of egg storage on blastodermal cell viability and embryonic metabolism in broiler breeders.

J. A. Hamidu*, Z. Uddin1, G. M. Fasenko2, and D. R. Barreda1, 1University of Alberta, Edmonton, Alberta, Canada, 2University of New Mexico, Albuquerque.
M310 Influence of hen’s age and phenotypic correlation between external and internal traits of eggs.
O. T. F. Abanikannda* and A. O. Leigh, Lagos State University, Ojo - Lagos, Nigeria.

M311 Effects of heat stress on egg production and quality in two strains of layers.
L. A. Mack*, J. N. Felver-Gant¹, R. L. Dennis², and H. W. Cheng³, ¹Purdue University, West Lafayette, IN, ²LBRU, USDA-ARS, West Lafayette, IN.

M312 Effect of litter type and wetness on foot pad dermatitis in broiler chickens.
O. Cengiz*, J. B. Hess³, and S. F. Bilgili³, ¹Adnan Menderes University, Aydin, Turkey, ²Auburn University, Auburn, AL.

M313 Eggshell quality of Japanese quail (Coturnix japonica) after long-term selection for egg production.
M. M. Fathi*, A. E. El-Dlebshany², and M. Bahie El-Deen², ¹Al-Qassim University, Buridah, Al-Qassim, Saudi Arabia, ²Alexandria University, El-Shatby, Alexandria, Egypt.

M314 Effects of ambient temperature on body weight, cloacal temperature and blood traits in Pekin ducks.
J. F. Huang*, C. H. Su¹, C. C. Lin², J. H. Lin¹, and S. R. Lee¹, ¹Ilan Branch, Livestock Research Institute, Ilan, Taiwan, ²National Ilan University, Ilan, Taiwan.

M315 The study on correlation between the liver enzyme activity and dioxin contents in the eggs of laying Brown Tsaiya ducks.
C. C. Lin*, T. H. Ueng², Y. H. Lin¹, J. F. Huang³, and S. R. Lee³, ¹Ilan Branch, Livestock Research Institute, Ilan, Taiwan, ²National Ilan University, Ilan, Taiwan, ³National Taiwan University, Taipei, Taiwan.

M316 Safety of industrial hemp as feed ingredient in the diets of laying hens and its impact on their performance.
N. Gakhar*, E. Goldberg, and J. D. House, University of Manitoba, Winnipeg, MB, Canada.

M317 Duckweed as a feed ingredient in laying hen diet and its effect on egg production and composition.

M318 Blood lipid concentration and performance parameters of broilers fed tomato pomace and turmeric powder under heat stress conditions.
S. J. Hosseini-Vashan², A. Golian*, A. Yaghobfar², H. Lotfolahian², and P. Esmaeilinasab³, ¹Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, ²Animal Science Research Institute, Karaj, Tehran, Iran, ³Birjand University, Birjand, Khorasan Jonobi, Iran.

M319 Reduction of Clostridium perfringens colonization in turkey poults by feeding Primalac.
S. Rahimi*, J. L. Grimes*, S. Kathariou², and R. Siletzky², ¹Tarbiat Modares University, Tehran, Iran, ²North Carolina State University, Raleigh.

M320 Influence of Bacillus subtilis PB6 (CloSTAT) on the performance of Hyline W-98 layers from 68-102 weeks of age.
M. Elliot¹, R. Myers², A. Lamptey², and A. G. Yersin*, ¹A&E Nutrition Services, LLC, Lititz, PA, ²Kemin AgriFoods, Des Moines, Iowa.

M321 Do dietary protein:energy ratios modify growth and frame size of young broiler breeder females?
E. Mba*, R. A. Renema, A. Pishnamazi, and M. J. Zuidhof, University of Alberta, Edmonton, AB, Canada.

D. Cardoso-Jiménez¹, A. Z. M. Salem¹, R. Rojo¹, S. R. Rebollar¹, and A. Perez-Cháves¹, ¹Universidad Autónoma del Estado de México, Centro Universitario UAEM-Temascaltepec, Estado de México, México, ²University of Alexandria, Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt.

M323 Effects of dietary energy and broiler breeder hen energetic efficiency on egg production and fertility.
T. G. V. Moraes*, M. J. Zuidhof, A. Pishnamazi, and R. A. Renema, University of Alberta, Edmonton, Alberta, Canada.

M324 Growth performance of Pearl Grey guinea fowl subjected to varying floor densities from hatch to fourteen weeks of age.
S. Nahashon*, J. Tyus, and D. Wright, Tennessee State University, Nashville.
Production, Management and the Environment

Small Ruminant

M325 Feedlot performance and carcass traits of hairsheep lambs treated with a β-adrenergic agonist during summer. J. V. Velázquez-Morales, F. D. Álvez-Valenzuela, N. G. Torrelera-Olvera, J. Rodríguez-García, U. Macías-Cruz, A. Correa-Calderón, and L. Avendaño-Reyes*, Instituto de Ciencias Agrícolas, Universidad Autónoma de Baja California, Ejido Nuevo León, Valle de Mexicali, Baja California, Mexico.

M326 Genetic factors affecting survival rate and litter size of Pelibuey ewes under two times of weaning in northern Mexico. U. Macías-Cruz1, F. D. Álvez-Valenzuela1, A. Correa-Calderón1, L. Molina-Ramírez2, and L. Avendaño-Reyes*,1 Instituto de Ciencias Agrícolas, Universidad Autónoma de Baja California, Ejido Nuevo León, Valle de Mexicali, Baja California, Mexico, 2Centro de Bachillerato Tecnológico Agropecuario No. 41, Poblado Benito Juárez, Valle de Mexicali, Baja California, Mexico.


M328 Constant long artificial days increase milk production in Alpine goats in northern Mexico. R. Rodríguez-Martínez1, C. A. Meza-Herrera2, M. A. De Santiago-Miramontes1, M. Mellado3, and F. G. Véliz1, Universidad Autónoma Agraria Antonio Narro Torreón, Coahuila, Mexico, 2Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México, 3Universidad Autónoma Agraria Antonio Narro, Buenavista, Saltillo, Coahuila.


M331 Breaking resistance of lamb ears according to ear tag insertion position and sheep breed. G. Caja*, H. Xuriguera1, M. A. Rojas-Olivares1, S. González-Marín, A. A. K. Salama1, S. Carné, and J. J. Ghirardi1, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, 2Universitat de Barcelona, Barcelona, Spain.

Production, Management and the Environment

Swine

M332 Animal weight gain in a pastured hog production system. S. Pietrosemoli1,2, J. C. Guevara2, J. Cardona3, W. Maradiaga3, A. Lobo3, and J. T. Green1,2, Animal Science Dept., North Carolina State University, Raleigh, 1Alternative Swine Research and Extension Project, Raleigh, NC, Universidad Nacional de Agricultura, Cataramas, Olancho, Honduras, 2Crop Science Dept., North Carolina State University, Raleigh.

M333 Analysis of the effect of complexed trace minerals on the prevalence of lameness and severity of claw lesions in stall-housed sows. S. S. Anil1,2, L. Anil1, J. Deen1, Sam K. Baidoo2, M. E. Wilson2, and C. Rapp2, Veterinary Population Medicine, University of Minnesota, St Paul, 2Southern Research and Outreach Center, University of Minnesota, Waseca, Zinpro Corporation, Eden Prairie, MN, 3Zinpro Performance Minerals, Boxmeer, the Netherlands.

M334 Comparison of the production performance of group-housed sows receiving complexed trace minerals. S. S. Anil1,2, L. Anil1, J. Deen1, S. K. Baidoo2, M. E. Wilson2, and T. L. Ward1, Veterinary Population Medicine, University of Minnesota, St Paul, 2Southern Research and Outreach Center, University of Minnesota, Waseca, Zinpro Corporation, Eden Prairie, MN.

M335 Risk factors associated with frequency of abortion in swine farms. N. M. Rainho1, M. Aparicio1, M. A. de Andrés1, J. Morales1, R. Pallás, V. Rodríguez-Estévez1, and C. Piñeiro1, PigCHAMP Pro Europa, Segovia, Spain, 2Kubus, SA, Madrid, Spain, 3Universidad de Córdoba, Spain.


M337 Weight gain of Duroc pigs managed in a Sudangrass (Sorghum bicolor) pasture. S. Pietrosemoli1,2, J. C. Guevara2, A. Lobo1, J. Cardona3, W. Maradiaga4, and J. T. Green1,2, Animal Science Department, North Carolina State University, Raleigh, 2Alternative Swine Research and Extension Project, Raleigh, NC, 3Universidad Nacional de Agricultura, Cataramas, Olancho, Honduras, 4Crop Science Department, North Carolina State University, Raleigh.

M338 Heat challenge effect on peripheral blood mononuclear cells viability: Comparison of a tropical and a temperate pig breed. J. C. Bambou, R. Grondin, J. L. Gourdine, and D. Renaudeau*, Institut National de la Recherche Agronomique, UR143, Petit Bourg, French West Indies, France.
Manipulation of rumen fermentation and ecology of swamp buffalo by coconut oil and garlic powder supplementation.
P. Kongmun1,2, M. Wanapat3, and Z. Yu4, 1Khon Kaen University, Khon Kaen, Thailand, 2The Ohio State University.

Adding whole hops to high concentrate diets enhances in vitro ruminal fermentation.
N. Narvaez*, Y. Wang, Z. Xu, and T. McAllister, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Effects of hops on in vitro ruminal fermentation of high forage diets.
N. Narvaez*, Y. Wang, Z. Xu, and T. McAllister, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Microencapsulation strategies to protect plant extracts against heat process of manufacture diets.
P. W. Cardozo*1, D. Ribera1, A. Viso1, L. Mengel2, and M. Coenen3, 1Research and Development Department, Carotech Technologies S. A, Tarragona, Spain, 2KoVet, Coordination Staff for Veterinary Clinical Studies, Faculty of Veterinary Medicine, University of Leipzig, Leipzig, Germany, 3Institute Animal Nutrition, Nutrition Diseases and Dietetics, Faculty of Veterinary Medicine, University of Leipzig, Leipzig, Germany.

Encapsulated combination of cinnamaldehyde and garlic oil as rumen modifiers in early-lactating dairy cows.
X. Guozhong1, X. Junxiang2, and D. Yingying3, 1Institute of Shanghai Dairy Science, Shanghai, China, 2Research and Development Department, Tarragona, Spain.

Effect of chestnut tannins on rumen activity of dairy sheep grazing on pasture.
A. Nudda1, G. Batattone1, R. Boe1, R. Rubattu1, A. H. D. Francesconi2, M. Decandia2, and G. Pulina1, 1Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Italy, 2Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.

Effect of the inclusion of treated apple waste on in vitro ruminal fermentation of alfalfa hay.

Effects of hops on rumen fermentation, growth, carcass traits, and shedding of Escherichia coli by feedlot cattle.
Y. Wang*, A. V. Chaves12, F. L. Rigby3, M. L. He4, and T. A. McAllister1, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada, 2The University of Sydney, Sydney, NSW, Australia, 3Yakima, WA.

Effect of phlorotannins from brown seaweed on ruminal bacteria.
Y. Wang*, L. J. Yanke, Z. Xu, and T. A. McAllister, Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada.

Additives (sodium monensin, salinomycin, and virginiamycin) for Nellore bulls feedlot fed high concentrate finishing rations.

In vitro effect of peppermint (Mentha piperita) essential oil and nonfiber carbohydrates on gas production parameters of alfalfa hay.
M. Danesh Mesgaran*, E. Jani1, A. Vakili1, A. Solaimany2, and H. Jahani-Azizabadi1, 1Dept. Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran, 2Islamic Azad University, Kashmar, Iran.

Effect of fennel (Foeniculum vulgare) essential oil on in vitro gas production parameters of alfalfa hay supplemented with sucrose or starch.
M. Danesh Mesgaran*, E. Jani1, A. Vakili1, H. Jahani-Azizabadi1, and A. Solaimany2, 1Dept. Animal Science, Ferdowsi University of Mashhad, P O Box 91775-1163, Mashhad, Iran, 2Islamic Azad University, Kashmar, Iran.

Effect of individual and mixed natural tree extracts on in vitro ruminal fermentation profiles in sheep.
F. S. Jiménez-Peralta1, A. Z. M. Salem12, H. Ammar2, M. Ronquio2, and P. B. Albarrán3, 1Autónoma del Estado de México, Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México, 2Ecole Supérieure d’Agriculture de Mognane, Zaghouan, 1121 Mograne, Tunisia, 3Universidad Autónoma del Estado de México, Facultad de veterinaria, Toluca, México, 4Alexandria University, Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt.

Medium-term oral administration of extracts impacts on in vitro rumen fermentative activity of some tree leaves in sheep.
A. Z. M. Salem12, F. S. Jiménez-Peralta1, H. Ammar2, R. R. Rojo1, L. M. Camacho3, and D. Cardoso-Jiménez4, 1Universidad Autónoma del Estado de México, Estado de México, Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México, 2Ecole Supérieure d’Agriculture de Mognane, Zaghouan, 1121 Mograne, Tunisia, 3Universidad Autónoma de Guerrero, Facultad de veterinaria, México, 4University of Alexandria, Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt.

Effect of cumin essential oil on in vitro gas production parameters of alfalfa hay, barley grain, and sugar beet pulp.
M. Sadjian, M. Danesh*, A. R. Vakili, H. Jahani, and J. Amini, Ferdowsi University of Mashhad, Mashhad, Iran.
M354 Influence of two browse extracts-rich secondary compounds and their mixture on lamb feed intake and growth performance.
A. Z. M. Salem1,4, H. P. Mejía1, H. Ammar2, M. Ronquío1, J. L. Tinoco2, R. Rojo1, and A. M. García1, 1Universidad Autónoma del Estado de México, Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México, 2Ecole Supérieure d’Agriculture de Mognane, Zaghouan, 1121 Mognane, Tunisia, 3Universidad Autónoma del Estado de México, Departamento de Nutrición Animal, Facultad de Veterinaria, Toluca, Mexico, 4University of Alexandria, Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt.

M355 Effect of polyclonal antibody preparation on ruminal microbial diversity population in cattle fed three different energetic sources.
W. Otero1, C. Marino2, M. Stradiotto3, C. Barreto3, V. Pellizari3, M. Arrigoni3, and P. Rodrigues1, 1University of Sao Paulo, FMVZ, Pirassununga, Brazil, 2University of Sao Paulo State, FMVZ, Botucatu, Brazil, 3University of Sao Paulo, ICBB, Sao Paulo, Brazil, 4University of Sao Paulo, FZEA, Pirassununga, Brazil.

M356 Effect of polyclonal antibody preparation on ruminal protozoa population in cattle fed three different energetic sources.
W. Otero1, C. Marino2, M. Stradiotto3, C. Barreto3, V. Pellizari3, M. Arrigoni3, and P. Rodrigues1, 1University of Sao Paulo, FMVZ, Pirassununga, Brazil, 2University of Sao Paulo State, FMVZ, Botucatu, Brazil, 3University of Sao Paulo, ICB, Sao Paulo, Brazil, 4University of Sao Paulo, FZEA, Pirassununga, Brazil.

M357 Effects of ethanol extracts of two specific mixtures of herbs and spices on in vitro rumen microbial fermentation.
N. Narvaez1, Y. Wang2, T. A. McAllister3, and C. Benchark4, 1Department of Animal and Range Sciences, University of Montana, Missoula Montana, USA, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, Alberta, 3Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, Quebec.

M358 Assessment of the effects of two herbs and spices mixtures and their ethanol extracts on in vitro rumen microbial fermentation.
N. Narvaez*, Y. Wang1, T. A. McAllister1, and C. Benchark1, 1Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada, 2Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

M359 Use of pine sawdust (Pinus patula) as a fiber source in lamb finishing rations.
E. C. Guerra-Medina1, O. D. Montañez-Valdez2*, M. A. Cobos-Peralta2, and M. Pérez-Sato2, 1Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Atliatlán, Jalisco, México, 2Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, México, 3Colegio de Postgraduados, Montecillo, Toluca, Mexico, 4Benemérita Universidad Autónoma de Puebla, Puebla, Puebla, México.

M360 Effect of an inoculum and additive on in situ nutrients digestibility of sugar cane silage.
J. A. Reyes-Gutiérrez1,2, O. D. Montañez-Valdez*, R. Rodríguez-Macias3, M. A. Ruiz-López1, E. Salcedo-Pérez2, and M. R. Rodríguez-Ramírez2, 1Centro Universitario del Sur de la Universidad Guadalajara, Ciudad Guzmán, Jalisco, México, 2Centro Universitario de Ciencias Biológicas y Agropecuarias de la Universidad de Guadalajara, Las Agujas, Jalisco, México, 3Instituto Nacional de Investigaciones Agrícolas y Pecuarias, Tecomán, Colima, México.

M361 The effects of cinnamaldehyde and garlic extract on feed intake and nutrient digestibility by lambs.
T. M. Norvell1*, B. M. Nichols, T. J. McDonald, M. M. Harbac, and J. A. Paterson, Department of Animal and Range Sciences, Montana State University, Bozeman.

M362 Interaction of rumen pH, cinnamaldehyde, and eugenol mixture and capsicum oleoresin on in vitro fermentation pattern and methane production.
D. Bravo1, S. Calsamiglia2, N. D. Pyatt3, and P. H. Doane1, 1Pancosma, Geneva, Switzerland, 2Universitat Autonoma de Barcelona, Spain, 3ADM Research, Decatur, IL.

M363 Influence of condensed tannin supplementation on intake, ruminal and total digestibility, rate of digestion, and urinary excretion of urea and total nitrogen of beef steers fed high concentrate diet.
R. Mezzomo1, P. V. R. Paulino1, S. C. Valadares Filho1, J. P. I. S. Monnerat1, G. S. Viana1, M. G. Machado1, J. C. M. Lima1, T. S. Martins1, P. Lencioni3, and D. Grandini1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Silva Team, Buenos Aires, Argentina, 3Nutron, Ipira, SP, Brazil.

M364 Effect of Copaiba (Copaifera spp.) oils on in vitro rumen fermentation of coastcross hay.
R. C. Araujo1, A. V. Pires1, A. L. Abdalla2, M. R. S. R. Pecanha2, and A. S. Morsy1, 1ESALQ, Universidade de São Paulo, Piracicaba, SP, Brazil, 2CENA, Universidade de São Paulo, Piracicaba, SP, Brazil.

M365 Effects of garlic oil on methane production, microbial growth and diet fermentation in Rusitec fermenters.
M. D. Carro1,2, M. L. Tejido1,2, C. Saro1,2, and M. J. Ranilla1,2, 1Dep. Producción Animal, Universidad de León, León, Spain, 2Instituto de Ganadería de Montaña (CSIC-ULE), Finca Marzanas, León, Spain.

M366 Effect of Copaiba (Copaifera spp.) oils on in vitro rumen fermentation of a high-concentrate diet.
R. C. Araujo1, A. V. Pires1, A. L. Abdalla2, L. A. Castilho2, and R. C. Lucas2, 1ESALQ, Universidade de São Paulo, Piracicaba, SP, Brazil, 2CENA, Universidade de São Paulo, Piracicaba, SP, Brazil.

M367 Effects of supplemental poultry fat on calves grazing bermudagrass pasture.
J. G. Powell*, T. J. Wistuba, and E. B. Kegley, University of Arkansas, Fayetteville.
M368  **Studying the effect of different direct fed microbials on rumen fermentation in vitro.**

M369  **Effect of a commercial microbial inoculant (Promote) on corn silage and animal performance.**
C. J. Fruge*, F. M. LeMieux, W. A. Storer, and T. H. Shields, McNeese State University, Lake Charles, LA.

M370  **Effects of Fibrozyme on in vitro ruminal digestion and fermentation of a corn and wet distillers-based finishing beef diet with and without monensin.**

M371  **Influence of condensed tannin supplementation on protein efficiency, microbial protein yield, nitrogen balance and ruminal fermentation characteristics in beef steers fed high concentrate diet.**
R. Mezzomo*1, P. V. R. Paulino2, M. S. Duarte1, L. S. Moura1, L. H. P. Silva1, E. San Vito1, L. D. A. Rufino1, C. Cabral2, D. Grandini3, and S. C. Valadares Filho1, 1Università Federal de Viçosa, Viçosa, MG, Brazil, 2Silva Team, Buenos Aires, Argentina, 3Nutram, Itapira, SP, Brazil.

M372  **Effects of supplementing an exogenous proteolytic enzyme on growth performance in growing beef steers.**
J. M. Vera1, C. T. Noviandi*1, Arief2, J. -S. Eun1, and D. R. ZoBell1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Faculty of Animal Science, Andalas University, Padang, West Sumatra, Indonesia.

M373  **Effects of zinc and chlortetracycline supplements on growth performance, blood metabolites, carcass characteristics, and claw health in young Holstein bulls.**
H. Fagari-Nobijari1, H. Amanlou1, M. Dehghan-Banadaky*2, and M. H. Shahiri3, 1University of Zanjan, Zanjan, Iran, 2University of Tehran, Karaj, Tehran, Iran.

M374  **The use of copper and chlortetracycline supplements for improving of growth performance, carcass characteristics, and claw health in young Holstein bulls.**
H. Fagari-Nobijari1, H. Amanlou1, M. Dehghan-Banadaky*2, and A. Shabani3, 1University of Zanjan, Zanjan, Iran, 2University of Tehran, Karaj, Tehran, Iran, 3Tabriz Islamic Azad University, Tabriz, Iran.

M375  **Chlortetracycline supplementation affected carcass characteristics and claw health in young Holstein bulls.**
H. Fagari-Nobijari1, M. Dehghan-Banadaky*2, S. H. Hosseini-Sabeghi3, H. Amanlou1, and A. Shabani3, 1University of Zanjan, Zanjan, Iran, 2University of Tehran, Karaj, Tehran, Iran, 3Ghaemshahr Islamic Azad University, Ghaemshahr, Iran, 4Tabriz Islamic Azad University, Tabriz, Iran.

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**Ruminant Nutrition**

**Dairy: Forages, Fiber, Grazing**

M376  **Effect of chestnut tannins supplement on milk production traits of dairy sheep on pasture.**
A. Nudda*1, G. Battacone2, A. Fenu1, M. Decandia1, M. Sitzia1, M. Acciaro2, and G. Pulina1, 1Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Italy, 2Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.

M377  **The estimation of rumen fungi growth on maize stubble treated with steam and sodium hydroxide by using of quantitative competitive polymerase chain reaction.**
M. Chaji* and T. Mohammadabadi, Department of Animal Science, Ramin (Khuzestan) Agricultural and Natural Resources University, Ahwaz (Molassani), Khuzestan, Iran.

M378  **The in vitro fermentation of sesame straw processed with alkali by rumen isolated bacteria.**
T. Mohammadabadi* and M. Chaji, Department of Animal Science, Ramin (Khuzestan) Agricultural and Natural Resources University, Ahwaz (Molassani), Khuzestan, Iran.

M379  **Synergism between cellulolytic and non-cellulolytic rumen bacteria on different fibrous substrates: Study in semi-defined cultures.**
J. Chiquette* and K. Lauzon, Agriculture Canada, Sherbrooke, Quebec, Canada.

M380  **Effects of chemical treatments on in situ ruminal degradation of canola straw in Holstein cows.**
M. Ghiasvand, M. Dehghan-Banadaky*, and K. Rezayazdi, Department of Animal Sci., Campus of Agriculture, University of Tehran, Karaj, Tehran, Iran.

M381  **Effect of rice bran extracts on fermentation, protein, dry matter, and organic matter digestibility in rumen in vitro.**
D. Srirhana* and S. Kondo1, 1Department of Agricultural Technology, Faculty of Science & Technology, Thammasat University, Pathumtani, Thailand, 2Faculty of Medicine, Thammasat University, Pathumtani, Thailand.
M382  The effect of sewage irrigation on mineral composition and in-vitro digestibility of forage sorghum.
E. Yosef*,1, J. Miron1, E. Zukermann2, M. Nikbakhch1, and D. Ben-Ghedalia1, 1ARO Israel, Bet-Dagan Israel, 2Extension Service-Ministry of agriculture, Bet-Dagan, Israel.

M383  Kinetics of degradation assessment and prediction of the fraction of indigestible neutral detergent fiber by-products.
J. G. L. Regadas Filho1, E. S. Pereira*,2, P. G. Pimentel1, T. S. Oliveira1, M. R. G. F. Costa1, and I. S. G Maia1, 1Universidade Federal de Viçosa, MG, Brazil, 2Universidade Federal do Ceará, Fortaleza, Brazil.

M384  Plant bioactive screening of vegetation browsed/grazed by goats on Mexican semi-arid rangelands.
H. M. C. Cucchillo*,1, D. C. Puga1, G. A. Navarro1, and F. R. Perez-Gil1, 1Departamento de Nutrición Animal, INCMNSZ, Mexico, Distrito Federal, México, 2Facultad de Ciencias, UNAM, México, Distrito Federal, México.

M385  The effects of high pressure steam treatment on some chemical and physical characteristics of sugarcane pith.
M. Chaji1,2, A. A. Naserian2, R. Valizadeh1, and T. Mohammadabadi1, 1Ramin Agricultural and Natural Resources University, Ahvaz, Khuzestan, Iran, 2Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

M386  Effects of chemical treatment on the digestibility of corn stover in diets with modified distillers grains with solubles.
J. L. Anderson*,1, J. R. Russell1, D. D. Loy1, N. A. Pyatt2, M. J. Cecava2, and P. H. Doane3, 1Iowa State University, Ames, 2Archer Daniels Midland, Decatur, IL.

M387  Partial replacement of corn silage and alfalfa silage with Italian ryegrass silage in diets of high producing dairy cows.
J. T. Woolever* and D. K. Combs, University of Wisconsin-Madison.

M388  Effect of a live yeast, Saccharomyces cerevisiae I-1077 on in situ ruminal degradation of alfalfa hay and fiber-associated microbes.
F. Chaucheyras Durand1,2, A. Amelbonne1,2, N. D. Walker*,1, P. Mosoni2, and E. Forano2, 1Lallemand Animal Nutrition, Blagnac, France, INRA, Saint-Genes Champangelle, France.

M389  Evaluating the effect of an active dry yeast on fibre digestion in vitro and in situ.
N. D. Walker* and M. E. Quintino Cintora, Lallemand Animal Nutrition, Montreal, QC, Canada.

M390  Influence of Rumensin200 and tallow on the rumen parameters and fiber digestion in dairy cows.

M391  Nutrient demand interacts with orchardgrass maturity to affect dry matter intake and yields of milk and milk fat.
K. L. Kammes* and M. S. Allen, Michigan State University, East Lansing.

M392  High total nonstructural carbohydrates timely enhanced performance of mid-lactation dairy cows.
A. F. Brito*,1, G. F. Tremblay2, A. Bertrand3, Y. Castonguay2, G. Bélanger2, R. Michaud3, and R. Berthiaume4, 1University of New Hampshire, Durham, 2Université Laval, Québec, QC, Canada, 3Agriculture and Agri-Food Canada, Québec, QC, Canada, 4Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

M393  Modification of the Penn State Particle Separator with 3. 18- or 4. 76-mm perforated steel sieves to measure physically effective fiber.
K. W. Cotanch*, J. D. Darrah, C. S. Ballard, and R. J. Grant, William H. Miner Agricultural Research Institute, Chazy, NY.

M394  Effect of the level of forage and monensin on trans-18:1 isomers and CLA in milk.
R. Mohammed*,1, J. J. Kennelly2, and J. K. G. Kramer1, 1University of Alberta, Edmonton, Alberta, Canada, 2Guelph Food Research Centre, Guelph, Ontario, Canada.

M395  Comparison between the Penn State Particle Separator and the Z-Box to estimate the pNDF content of dairy cow rations.
A. S. Atzoni*, P. Carta, and A. Cannas, Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Sardinia, Italy.

M396  Effects of methionine analogues on rumen fibrillar activities and fibrillar microorganisms.
E. Devillard*,1, C. Martin2, D. Morgavi2, E. Forano2, and P. Mosoni2, 1Adisseo SAS, 03600 Commeny, France, 2INRA de Theix, 63122 St Genes Champangelle, France.

M397  Effect of soybean hulls levels on ruminal parameters of dairy cows grazing elephant grass.
J. C. Martinez*,1, T. V. Voltoni1, A. V. Pirez2, and F. A. P. Santos2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil, 3University of California, Davis, 4Embrapa Semi-árido, Petrolina, Pernambuco, Brazil.

M398  Effects of crude protein levels in the supplementation of dairy cows grazing elephant grass on milk yield and composition.
M. A. C. Danes*, F. A. P. Santos, L. J. Chagas, J. R. R. Dorea, and A. M. Pedroso, University of São Paulo, Piracicaba, Brazil.

M399  Effect of soybean hulls levels on performance of dairy cows grazing elephant grass.
J. C. Martinez*,1, T. V. Voltoni1, and F. A. P. Santos2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo State University, Piracicaba, São Paulo, Brazil, 3University of California, Davis, 4Embrapa Semi-árido, Petrolina, Pernambuco, Brazil.
M400 Evaluation of starch digestibility and physico-chemical properties of Monsanto corn hybrids.
D. Ngoyamo-Majee*1, P. Feng3, J. Hinen1, G. Hartnell1, B. Kutzner1, M. Brandt1, and M. Stephens1, 1Monsanto Company, St. Louis, MO, 2Monsanto Company, Ankeny, IA.

M401 Growth performance of Bluchi female lambs fed by diets containing different levels of date palm leaves.
R. Valizade, A. Salahi*, and M. Mahmodi, Ferdowsi University, Mashhad, Iran.

M402 Effect of date palm leaves substitution with wheat straw on health and rumen parameter of Saanen dairy goats.
A. Salahi*, R. Valizade, A. Naserian, and A. Tahmasbi, Ferdowsi University, Mashhad, Iran.

M403 Milk production and composition of Saanen dairy goat fed by ration containing date palm leaves.
A. Salahi*, R. Valizade, A. Naserian, and A. Tahmasbi, Ferdowsi University, Mashhad, Iran.

M404 Effects of an alfalfa feeding strategy in the first week postpartum on feed intake and ketogenic status in transition cows.
M. Larsen* and N. B. Kristensen, Faculty of Agricultural Science, Aarhus University, Tjele, Denmark.

M405 Milk production efficiency increases with addition of an exogenous fibrolytic enzyme to a total mixed ration.
L. Holtshausen1*, Y. -H. Chung1, H. Gerardo-Cuervo1, M. Oba1, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2University of Alberta, Edmonton, Canada.

M406 Effect of different sources of pectin feedstuffs on chewing activities in early lactating Holstein cows.
M. Kordi*, A. Naserian, R. Valizade, and A. Tahmasbi, Ferdowsi University, Mashhad, Iran.

M407 Effect of different sources of pectin feedstuffs on blood metabolites in early lactating Holstein cows.
M. Kordi*, A. Naserian, R. Valizade, and A. Tahmasbi, Ferdowsi University, Mashhad, Iran.

M408 Effects of forage family (alfalfa vs. orchardgrass) on apparent ruminal synthesis of niacin and vitamin B6 in lactating dairy cows.
M. Seck*1, A. J. A. Voelker Linton2, M. S. Allen2, P. Y. Chouinard3, and C. L. Girard1, 1Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2Department of Animal Science, Michigan State University, East Lansing, 3Département de sciences animales, Université Laval, Québec, Quebec, Canada.

M409 Effect of the volatile fraction from silage and forage:concentrate ratio on ruminal degradation of fresh chopped or ensiled sugarcane.
J. L. P. Daniel*1, L. G. Nussio1, R. C. Amaral1, S. G. Toledo Filho1, J. R. Lima1, E. Cabezas1, and O. C. M. Queiroz2, 1University of Sao Paulo, Luiz de Queiroz College of Agriculture, Piracicaba, SP, Brazil, 2University of Florida, Gainesville.

M410 Performance of lactating crossbreed cows on tropical pasture fed by supplements with soybean meal and Optigen or urea.
D. C. Abreu*2, R. P. Lana1, A. S. Oliveira1, F. A. Barbosa1, F. L. Andrade1, P. T. Silva1, and F. A. C. Neto1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Universidade de Brasília, Brasilia, DF, Brazil, 3Colorado State University, Fort Collins.

M411 Modeling degradation characteristics and nutrient availability of anthocyanin accumulating Le-alfalfa and alfalfa selected for a low initial rate of degradation in dairy cows.
A. Jonker*1,2, M. Gruber1, Y. Wang1, and P. Yu1, 1Department of Animal and Poultry Science, College of Agriculture and Bioreources, University of Saskatchewan, Saskatoon, SK, Canada, 2Saskatoon Research Centre, Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, 3Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

M412 Influence of reconstituted and silage sorghum grain on site and extent digestion in finishing cattle.
U. A. González1, M. González1, A. Plascencia1, and L. Corona*1, 1Universidad Autónoma del Estado de México, Toluca, Estado de México, México, 2Universidad Autónoma de Baja California, Mexicali, BC, México, 3Universidad Nacional Autónoma de México, Cd. Universitaria, DF, México.

M413 Effect of germinated and ensiling sorghum grain on digestion and ruminal fermentation by feedlot cattle.
F. Rodríguez2, S. E. Buntinx3, M. E. Ortega1, and L. Corona*1, 1Universidad Nacional Autónoma de México, Cd. Universitaria, DF, México, 2Colegio de Postgraduados, Montecillo, Edo. de México, México.

M414 Performance of beef heifers finished at pasture in tropical conditions and supplemented with sunflower crushed seeds, in dry season.

M415 Ingestive behavior of grazing Nellore steers supplemented with increased levels of energetic concentrate.

M416 The effect of rumen protozoa of water buffalo and cow on fiber digestion in vitro.
S. Jabbari*, M. Eslami, M. Chaji, T. Mohammadabadi, and M. Bojarpour, Department of Animal Science, Ramin (Khuzestan) Agriculture and Natural Resources University, Ahwaz (Molassani), Khuzestan, Iran.
The degradation of alfalfa treated with enzyme and or sodium hydroxide by rumen anaerobic fungi.
T. Mohammadabadi* and M. Chaji, Department of Animal Science, Ramin (Khuzestan) Agriculture and Natural Resources University, Ahwaz (Molassani), Khuzestan, Iran.

Exchanging tropical fiber sources on intake and ingestive behavior of feedlot rations in beef cattle.

Effect of levels of fiber and corn grain processing in diets for finishing Zebu cattle.

Influence of daily ingestion of alfalfa treated with quebracho tannins on in vitro fermentative activity of some browse species.
H. Ammar1,2, S. López2, A. Z. M. Salem*3,4, and J. S. González2, 1Ecole Supérieure d’Agriculture de Mougine, Dep. Production Agricole, 1121-Zaghouna, Túnisia, 2Instituto de Ganadería de Montaña (CSIC-Universidad de León), León, Spain, 3Universidad Autónoma del Estado de México, Centro Universitario UAEM-Temascaltepec, Estadio de México, México, 4Alexandria University, Department of Animal Production, Faculty of Agriculture (El-Shathy), Egypt.

Productive characteristics and chemical composition of elephant grass (Pennisetum purpureum Schum, cv. Mineiro) submitted to chemical and organic fertilization.
T. S. Oliveira**, J. C. Pereira, R. A. M. Vieira, J. G. L. Regadas Filho, and E. F. Aguiar, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Universidade Federal do Vale do Jequitinhonha e Mucuri, Diamantina, Minas Gerais, Brazil, 3Universidade Estadual de Montes Claros, Janaúba, Minas Gerais, Brazil, 4Universidade Estadual do Norte Fluminense Darcy Ribeiro, Campo dos Goytacazes, Rio de Janeiro, Brazil.

Effects of condensed tannins supplementation in a lactating dairy TMR diet on ruminal fermentation in continuous culture, maintained at high and low pH.
C. M. Oschaak*, C. M. Williams, J.-S. Eun, and A. J. Young, Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan.

Milk fatty acid composition of grazing dairy cows supplemented with soy and fish oils.

Does the in situ ruminal degradation of feeds vary with the finishing ration fed to beef cattle?
Y. L. Li**,2 and W. Z. Yang1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.

Performance of grazing dairy cows supplemented with soy and fish oils.
G. M. Martínez2, G. A. Gagliostro*2, and D. A. Garciaarena2, 1INTA EEA Salta, Salta, Argentina, 2INTA EEA Balcarce, Balcarce, Buenos Aires, Argentina.

Effect of production system on metabolic and endocrine responses of grass fed cows.
L. D. Kaufmann1, A. Münger1, H. A. van Dorland2, R. M. Bruckmaier1, and F. Dohme*, 1Agroscope Liebefeld-Posieux, Research Station ALP, Postieux, Switzerland, 2University of Bern Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland.

Production of dairy cows fed varying levels of total mixed ration and pasture.

Effect of different pectin rich by products on feed intake, milk production, and composition and ruminal pH of lactating dairy cows.
M. Kordi*, A. Naserian, R. Valizade, and A. Tahmasbi, Ferdowsi University, Mashhad, Iran.

Modification of the Z-Box system for assessing particle distribution of forages and total mixed rations.
K. W. Cotanch*, C. S. Ballard1, J. W. Darrah1, L. M. Klaiber1, R. J. Grant3, and K. Yagi2, 1W. H. Miner Agricultural Research Institute, Chazy, NY, 2Zen-Noh National Federation of Agricultural Co-operative Associations, Tokyo, Japan.

Zinc and heat treatments reduce ruminal protein degradation of grass leaf protein.
Ruminant Nutrition
Methods, Models, etc.

M431 Prediction of residual feed intake in beef heifers by infrared thermography.
J. J. Colyn*, A. L. Schaefer1, J. A. Basarab1, E. K. Okine1, T. Liu1, K. L. Robertson2, and S. L. Scott3, 1Agriculture and Agrifood Canada, Lacombe Research Centre, Lacombe, AB, Canada, 2Alberta Agriculture, Lacombe, AB, Canada, 3Department AFNS, University of Alberta, Edmonton, AB, Canada.

M432 Predicting ME and metabolizable protein (MP) balances of Santa Gertrudis cows under grazing conditions using a nutrition model.
A. D. Aguiar*1,4, L. O. Tedeschi1, K. McCuistion2, D. S. DeLaaney3, and S. Moore1, 1Texas A&M University, College Station, 2Texas A&M University-Kingsville, Kingsville, 3King Ranch, Kingsville, TX, 4University of Florida, Gainesville.

M433 Estimating rumen microbial crude protein in vitro using purine analysis or real-time PCR.
E. Castillo-Lopez*, P. J. Kononoff, and J. L. Miner, University of Nebraska-Lincoln, Lincoln.

M434 An in vitro gas production technique to evaluate the effect of microwave irradiation on fermentation potential of cottonseed hulls using medium of ruminal fungal isolation.

M435 The effect of microwave irradiation on gas production parameters of cottonseed hulls using medium containing ruminal bacterial isolation.

M436 The influence of extrusion of low-glucosinolate full-fat rapeseed and whole pea on site and extent of protein digestion in dairy cows.
C. Bayourthe* and F. Enjalbert, UMR 1289 INRA/INPT/ENVT TANDEM, 31326 Castanet-Tolosan, France.

M437 In situ ruminal degradability of dry matter and crude protein of soybean meal treated with formaldehyde and extrusion.
A. A. Naserian* and H. Gholladeh, Ferdowsi University of Mashhad, Mashhad, Iran.

M438 Disappearance of total carotenoids in the rumen and intestine of steers measured using a mobile nylon bag technique.

M439 The relationship between intestinal digestibility of crude protein and dry matters and the protein fractions with ruminant feedstuffs.

M440 Withdrawn by author

M441 Enzymatic activity of microorganisms attached to solid residues of Festulolium, fermentation variables and in vitro kinetics of gas production.
I. Almaraz-Buendia1, S. S. Gonzalez-Munoz*, O. Loera2, L. A. Miranda-Romero1, M. A. Cobos-Peralta1, M. Meneses-Mayo1, B. Alarcon-Zuñiga1, and R. Bárzona-Gama1, 1Colegio de Postgraduateos, Montecillo, Edo. de México, México, 2Universidad Autónoma Metropolitana-Iztapalapa, México D. F., México, 3Universidad Autónoma Chapingo, Chapingo, Edo. de México, México.

M442 Use of in vitro starch and neutral detergent fiber degradation rates to predict carbohydrate availability.
M. A. Brooks*, N. F. Johnson, R. M. Harvey, and M. S. Kerley, University of Missouri, Columbia.

M443 Effect of lysozyme-adapted Lactobacillus acidophilus on fermentation in an artificial rumen system (Rusitec).
M. L. He1,2, T. A. McAllister*1, and L. M. Rode1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2AB Sage Biosciences Inc., Edmonton, AB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada.

M444 Development of a PCR assay for the detection of Zymomonas mobilis in distillers grains.
M. A. Rasmussen* and F. H. Benahmed, U. S. Food and Drug Administration, Center for Veterinary Medicine, Office of Research, Laurel, MD.

M445 Intake prediction using n-alkanes in beef cattle fed a mixture of switchgrass and alfalfa hay.

M446 A comparison of methods to evaluate in vitro intestinal digestibility.
D. A. Ross*, M. M. McCulloch, and M. E. Van Amburgh, Cornell University, Ithaca, NY.

M447 The role of ADIN in determining nutrient availability in new co-products from bio-ethanol processing.
W. G. Nuez-Ortiz* and P. Yu, Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada.
Small Ruminant Sheep Production 1

M453 Milk yield and composition from dairy ewes fed two sources of lipid supplements associated or not with conjugated linoleic acid (CLA).
M. Baldin1, R. Dresch1, J. Souza1, E. C. Sandri1, F. Batistel1, E. Ticiani1, A. Panzera1, L. O. Tedeschi1, M. A. S. Gama2, D. Fernandes2, and D. E. Oliveira**1, 1Santa Catarina State University, Chapecó, Brazil, 2Milk Research Center, Sao Paulo, Brazil. 

M454 New management technique in early lactation can improve profitability in dairy sheep farms.
S. P. G. Rassu, C. Carzedda, A. Mazzetti, C. Dimauro, A. Mazza, and G. Pulina*, Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Italy.

M455 Assessment of milk yield and milk composition in ewes fed diets with canola, sunflower, or castor oil.

M456 Effect of different vegetable oils fed to lactating ewes on milk and cheese fatty acid profile.
R. Bodaji1, P. Gómez-Cortés2, A. R. Mantecón1, M. Juarez1, M. A. De la Fuente2, and T. Manso**1, 1Instituto de Ganadería de Montaña (CSIC-ULE), León, Spain, 2Instituto del Frío (CSIC), Madrid, Spain, 3E. T. S. Ingenierías Agrarias (Universidad de Valladolid), Palencia, Spain.

M457 Milk performance of ewes fed fish oil and soybean oil.

M458 Evaluation of inbreeding depression effect on birth weight of Baluchi sheep breed of Iran.
G. Motaghinia*1, H. Farhangfar1, M. Bashtani1, A. Shadparvar2, H. Sarae1, H. Janati1, J. Modarresi1, Birjand, Iran, 2Gilan University, Rasht, Iran, 3Baluchi Sheep Breeding Station, Mashhad, Iran, 4Agricultural Jihad Organisation, Birjand, Iran.

M459 Cubicle use and maternal bonding in sheep: tests of an alternative lambing management strategy.
N. L. Pettifor* and M. L. Thonney, Cornell University, Ithaca, NY.

M460 Selective genotyping using genome-wide association studies (GWAS) that are associated with fiber diameter in Merino sheep.

M461 An alternative wool harvesting system for wool sheep flocks.
T. Wuliji**1, T. Watts2, A. Qi3, and T. Filbin3, 1University of Nevada, Reno, 2Heiniger Australia Pty, Perth, Western Australia, Australia, 3Rafter 7 Ranch, Yerington, NV.

M462 Comparison of two instruments for measuring fiber characteristics of wool.
F. A. Pfeiffer*, C. J. Lupton, and D. F. Waldron, Texas AgriLife Research, San Angelo.

M463 Comparison of Rambouillet sheep with Australian Merino F1 crosses.
C. J. Lupton**1, R. A. Paquier1, W. S. Ramsey2, M. W. Salisbury3, L. G. W. Ponder3, and T. D. Willingham1, 1Texas AgriLife Research, San Angelo, 2Texas A&M University, College Station, 3Angelo State University, San Angelo, TX.
Effects of substituting distillers dried grains for cottonseed meal and milo on wool and carcass characteristics in lamb finishing diets.

Nutrient intake in Santa Inês sheep fed different levels of metabolizable energy in the ration.
R. M. Fontenele*, E. S. Pereira, P. G. Pimentel, M. S. de Souza Carneiro, A. B. S. Villarroel, and J. G. L. Regadas Filho, Federal University Ceará, Fortaleza, Ceará, Brazil.

Body composition and net energy requirements for growth of Santa Inês lambs.
J. G. L. Regadas Filho¹, E. S. Pereira¹, P. V. R. Paulino*¹, A. B. S. Villarroel¹, P. G. Pimentel¹, R. M. Fontenele¹, and I. S. G. Maia¹, ¹Universidade Federal do Ceará, Fortaleza, Brazil, ²Universidade Federal de Viçosa, MG, Brazil.

Body composition and net protein requirements for Santa Inês lambs.
J. G. L. Regadas Filho², E. S. Pereira¹, P. V. R. Paulino*², A. B. S. Villarroel¹, P. G. Pimentel¹, R. M. Fontenele¹, M. R. F. Costa¹, and M. S. Duarte², ¹Universidade Federal do Ceará, Fortaleza, Brazil, ²Universidade Federal de Viçosa, MG, Brazil.

Effects of dietary copper level on serum cholesterol and nonesterified fatty acids in lambs.
S. Hasanlou*, A. Zali, M. Ganjkhanlou, and M. Dehghan, Tehran University, Tehran, Iran.

Effects of dietary copper level on growth, performance, and carcass characteristics in lambs.
S. Hasanlou*, A. Zali, M. Ganjkhanlou, and M. Dehghan, Tehran University, Tehran, Iran.

Effect of zilpaterol and ractopamine feeding program on growth performance and carcass characteristics of finishing lambs.
M. A. Lopez-Carlos*¹, ², R. G. Ramirez², J. I. Aguilera-Soto¹, C. F. Arechiga¹, F. Mendez-Llorente¹, H. Rodriguez¹, and M. Rincon¹, ¹University Autonoma de Zacatecas, Zacatecas, Mexico, ²University Autonoma de Nuevo Leon, Nuevo Leon, Mexico.

Use of zeranol and reimplantation on performance of finishing hair lambs.

Fatty acid profile and lipid oxidation of meat from Sarda lambs managed in different feeding systems.
S. P. G. Rassu, C. Carzedda, R. Boe, M. G. Manca, and A. Nudda*, Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Italy.

Deciding whether light lambs should be weaned or left with the dam until slaughter age.
M. Terré¹, A. Nudda², and A. Bach*¹, ²Institut de Recerca i Tecnologia Agroalimentàries, Barcelona, Spain, ³University of Sassari, Sassari, Italy, ⁴Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain.

Lamb finalization allowing free-choice intake of roughage and concentrate.
P. Martinez-Hernandez*, C. Sanchez-DelReal, E. Cortes-Diaz, E. Maldonado-Siman, and R. Lazo-Soto, Animal Science Department, University of Chapingo, Texcoco, Mexico, Mexico.
### SYMPOSIA AND ORAL SESSIONS

**Graduate Student Paper Competition**  
**ADSA Southern Section**  
Chair: Patrick French, The Old Mill-Troy  
**303**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td><strong>Biohydrogenation intermediates of $^{13}$C labeled docosahexanoic acid in ruminal batch cultures.</strong></td>
<td>C. M. Klein* and T. C. Jenkins, Clemson University, Clemson, SC.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td><strong>Cows genetically more susceptible to mastitis have altered neutrophil migration patterns.</strong></td>
<td>A. A. Elliott*, S. Minkin, J. Biggerstaff, J. Dunlap, and G. M. Pighetti, University of Tennessee.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td><strong>Effects of different levels of cottonseed hulls on rumen development and growth in dairy calves.</strong></td>
<td>R. M. Doescher*, C. C. Williams, C. F. Hutchison, B. F. Jenny, and A. H. Dolejsiova, Louisiana State University AgCenter, Baton Rouge.</td>
</tr>
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**Graduate Student Paper Competition**  
**ADSA-ASAS Northeast Section**  
Chair: Kristen E. Govoni, University of Connecticut  
**405**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td><strong>Effects of herbs and essential oils on in vitro batch culture ruminal fermentation.</strong></td>
<td>J. A. Tekippe*, A. N. Hristov, K. S. Heyler, V. D. Zheiljazkov, J. Ferreira, and G. A. Varga, Pennsylvania State University, University Park, Mississippi State University, NMREC, Verona, USDA-ARS, Beaver, WV.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td><strong>Withdrawn by author</strong></td>
<td></td>
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<tr>
<td>10:00 AM</td>
<td><strong>Use of environmental protection best management practices by Maryland horse farm operators.</strong></td>
<td>N. M. Fiorellino*, K. M. Wilson, and A. O. Burk, University of Maryland, College Park.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td><strong>Sources of variation and importance of the quantification of the in vitro NDF digestibility for estimating rates of NDF digestion.</strong></td>
<td>E. Raffrenato* and M. E. Van Amburgh, Cornell University, Ithaca, NY.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td><strong>Effect of capsicum oil on feeding behavior and milk production in lactating dairy cattle.</strong></td>
<td>L. R. Tager* and K. M. Krause, West Virginia University, Morgantown.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td><strong>Break</strong></td>
<td></td>
</tr>
<tr>
<td>10:45 AM</td>
<td><strong>Digestive fate of free ferulic acid in lactating dairy cows.</strong></td>
<td>M. A. Soberon*, D. J. R. Cherney, and D. A. Ross, Cornell University, Ithaca, NY.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td><strong>The effect of form of trace mineral supplementation on lactation, neutrophil function, and vaccination response in Holstein cows.</strong></td>
<td>L. M. Nemec*, J. D. Richards, C. Atwell, D. E. Diaz, and T. F. Gressley, University of Delaware, Newark, Novus International Inc., St. Charles, MO.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td><strong>The effects of length of storage on the composition and nutritive value of corn silage.</strong></td>
<td>M. C. Der Bedrosian*, L. Kung, and K. E. Nestor, University of Delaware, Newark, Mycogen Seeds, Indianapolis, IN.</td>
</tr>
</tbody>
</table>
Alpharma Beef Cattle Nutrition Symposium
“Parameterizing” Health and Performance Expectations of Feedlot Cattle
Chair: Richard Zinn, University of California-Davis
Sponsor: Alpharma Animal Health
Korbel Ballroom 3a

9:30 AM 49  
Practical relationships between morbidity and growth performance.  
V. R. Bremer1, G. E. Erickson2*, T. J. Klopfenstein3, D. R. Smith4, K. J. Hanford5, R. E. Peterson5, L. O. Burciaga-Robles6, D. B. Faulkner3, and C. R. Krehbiel7, 1University of Nebraska, Lincoln, 2University of Illinois, Urbana, 3Oklahoma State University, Stillwater.

10:20 AM 50  
Predictability of feedlot cattle growth performance.  

11:10 AM 51  
Applying detection controls in assessing variance in feedlot cattle performance.  
R. A. Zinn*, University of California, Davis.

Animal Behavior and Well-Being Symposium
Animal Welfare Assurance: Science and Application
Chair: Trevor DeVries, University of Guelph
Sponsors: AAALAC, EAAP
403/404

9:30 AM  
Opening remarks  
T. DeVries, University of Guelph, Guelph, ON, Canada.

9:40 AM 52  
Resource-based versus animal-based criteria in on-farm evaluation of welfare.  
A. Butterworth*, University of Bristol, Clinical Veterinary Science, Langford, N Somerset, UK.

10:25 AM 53  
Developing animal welfare standards: translating experimental studies to the farm.  
J. Rushen3, E. Vasseur2, and A. M. de Passillé1, 1Agriculture and Agri-Food Canada, Agassiz, BC, Canada, 2University of British Columbia, Vancouver, BC, Canada.

11:10 AM 54  
Integration of science, regulation, and training in animal welfare auditing programs.  
J. C. Swanson*, Michigan State University, East Lansing.

Animal Health-Johne’s Disease (JDIP)
Basic Biology/Immunology/Vaccine Development
Chair: Kenneth E. Olson, KEO Consulting
503/504

9:30 AM  
Introduction  
K. E. Olson.

9:45 AM 55  
A novel approach to evaluate the cost-benefit of use of Johne’s disease vaccine while considering effects on the bovine tuberculosis eradication program.  
F. J. Zagmutt*, L. A. Espejo2, H. Groenendaal3, J. R. Lima2, E. Patton3, I. A. Gardner4, and S. Wells5, 1Vose Consulting, Boulder, CO, 2College of Veterinary Medicine, University of Minnesota, St. Paul, 3Division of Animal Health, Wisconsin DATCP, Madison, 4School of Veterinary Medicine, University of California, Davis.

10:00 AM 56  

10:15 AM 57  
Unrestricted transmission of highly pathogenic Indian Bison type of Mycobacterium avium ssp. paratuberculosis in India.  
Myobacterium avium ssp. paratuberculosis produces endospores.
E. A. Lamont1*, J. P. Bannantine2, A. Armien3, D. S. Ariyakumar4, and S. Sreevatsan5,6,7, 1Veterinary Population Medicine, University of Minnesota, St. Paul, 2Department of Biomedical Sciences, University of Minnesota, St. Paul, 3Veterinary Diagnostic Lab, University of Minnesota, St. Paul, 4National Animal Disease Center, USDA-Agricultural Research Service, Ames, IA.

Transcriptional analysis of MAP genes contributing to invasion and persistence in ileal mucosa of cattle.
S. Khare2, K. Drake2, and L. G. Adams3, 1Department of Veterinary Pathobiology, Texas A&M University, College Station, 2Seralogix Inc., Austin, TX.

The transcriptome of Mycobacterium avium ssp. paratuberculosis during infection.
C.-W. Wei and A. M. Talaat*, University of Wisconsin-Madison, Madison.

The response of auxotrophic MAP leuD mutant under environment stresses.

A gene specific to Mycobacterium avium ssp. paratuberculosis, but only at the transcription-translation level.
J. P. Bannantine2, R. E. Briggs1, E. A. Lamont2, J. R. Stabel1, and S. Sreevatsan2, 1National Animal Disease Center, Ames, IA, 2University of Minnesota, St. Paul.

Binding affinity of Mycobacterium avium ssp. paratuberculosis 85 complex to 40 kDa domain of fibronectin.
C. J. Kuo*, J. Bannantine1, V. Kapur3, and Y. F. Chang1, 1Cornell University, Ithaca, NY, 2NADC, Ames, IA, 3Pennsylvania State University, University Park.

MAP induces calcium-dependent phagosome acidification to enlist IL-1β processing and macrophage recruitment.
E. A. Lamont1*, S. M. O’Grady1, T. Eckstein1, and S. Sreevatsan2,3, 1Veterinary Population Medicine, University of Minnesota, St. Paul, 2Department of Veterinary Biomedical Sciences, University of Minnesota, St. Paul, 3Department of Animal Sciences, University of Minnesota, St. Paul, 4Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins.

Macrophages infected with Mycobacterium avium ssp. paratuberculosis are highly resistant to apoptosis, while uninfected culture mates are highly apoptotic.
E. Kabara* and P. M. Coussens, Michigan State University, East Lansing.

Breeding and Genetics
Feed Intake and Utilization
Chair: Kent Weigel, University of Wisconsin
Korbel Ballroom 4def

Genetic correlations of gross feed efficiency with yield, body weight, body condition score, and energy balance in dairy cattle.
C. D. Dechow1*, J. Vallimont1, M. D. Dekleva1, J. M. Daubert1, and J. W. Blüm2,3, 1Pennsylvania State University, University Park, 2University of Bern, Switzerland.

Genetic characterization of feed intake and utilization in performance tested beef bulls.
D. H. Crews Jr.*4, C. T. Pendley1, G. E. Carstens2, and E. D. M. Mendes1, 1Colorado State University, Fort Collins, 2Texas A&M University, College Station.

Analysis of published genetic parameter estimates for feed utilization traits in beef cattle.

Heritability and genetic correlations of residual feed intake between Angus and Simmental bulls and resulting steer relatives.
W. C. Rutherford*, L. A. Kriese-Anderson, and G. S. Hecht, Auburn University, Auburn, AL.

A region on BTA6 is associated with feed intake and gain in beef cattle.
A. K. Sexten1,2, L. A. Kuehn1, T. P. L. Smith1, H. C. Freetry1, W. M. Smelling1, and A. K. Lindholm-Perry1, 1USDA, ARS, US Meat Animal Research Center, Clay Center, NE, 2Oklahoma State University, Stillwater.

A neural network approach for association between a low-density whole genome SNP marker panel and residual feed intake and dry matter intake.
H. Wang1, X. Liu2, B. Woodward3, S. Bauck2, and R. Rekaya1, 1University of Georgia, Athens, 2Merial Limited, Duluth, GA.
Effects of divergent selection for serum insulin-like growth factor-I concentration on mature weight and growth curves in Angus cattle.
Q. Qin* and M. E. Davis, The Ohio State University, Columbus.

Bayesian estimation of a genetic covariance matrix with different degrees of belief via a generalized inverted Wishart distribution.

A simulation approach for analyzing genomic data using a package of specific FORTRAN 90 functions.
P. Faux*1,2 and N. Gengler1,3, 1University of Liège - Gembloux Agro-Bio Tech, Gembloux, Belgium, 2National Research Fund, Luxembourg, Luxembourg, 3National Fund for Scientific Research, Brussels, Belgium.

ASAS-EAAP Global Issues Symposium
Contemporary and Emerging Issues and International Animal Agriculture Joint Symposium: Global Livestock Production to 2050: Challenges and Opportunities
Chair: Frank Mitloehner, University of California-Davis
Sponsors: ASAS, EAAP, Elanco Animal Health
Korbel Ballroom 3b

Introduction

Perspectives for livestock production in developing countries—Changes in production systems needed to meet projected demand.
R. D. Sainz*, G. B. Martha Jr. 1,2, and L. G. Barioni3, 1University of California, Davis, 2Embrapa Cerrados/Embrapa Strategic Studies and Training, Brasilia-DF, Brazil, 3Fellow, National Research Council, Brazil, 4Embrapa Agricultural Informatics, Campinas-SP, Brazil.

A European perspective on the challenges for livestock farming to achieve a sustainable contribution to food security and a reduced impact on the environment.
P. Herpin*, R. Duighuisen1, J. Oldham3, P. Vriesekoop2, and J. Williams1, 1INRA, France, 2Wageningen UR, the Netherlands, 3Scottish Agricultural College, Scotland.

Sustainability of livestock production globally.
H. Steinfeld*, UN Food and Agriculture Organization, Rome, Italy.

Extension Education 1
Chair: Glenn Selk, Oklahoma State University
507

Multi-state Beef Reproduction Task Force provides science-based recommendations for the application of reproductive technologies.
S. K. Johnson*, R. N. Funston1, J. B. Hall2, D. J. Kesler3, J. W. Lauderdale4, G. C. Lamb5, D. J. Patterson6, G. A. Perry6, and D. R. Strohbehn7, 1Kansas State University, 2University of Nebraska, 3University of Idaho, 4University of Illinois, 5Michigan State University, 6University of Florida, 7University of Missouri, 8South Dakota State University, 9Iowa State University.


Transferring reproductive technologies to the field: Fixed-time AI and high accuracy sires.
D. J. Patterson*, D. A. Mallory, J. L. Parcell, S. E. Poock, and M. F. Smith, University of Missouri, Columbia.

Evaluation of attitudes, knowledge gained and anticipated behaviors of extension clientele completing food defense training conducted regionally in Missouri.
Documenting a 60-year trend in improved efficiency for the United States swine industry.

10:45 AM

Break

A survey of the economic, environmental, public policy and production issues facing animal agriculture in Louisiana.
T. A. Lavergne*, S. M. DeRouen, and G. M. Hay, Louisiana State University AgCenter, Baton Rouge.

The value of poultry litter to crop producers in south Georgia.
C. S. Dunkley* and D. L. Cunningham, University of Georgia, Athens.

Testing foam depopulation equipment in the field.

Assessing the potential economic value of an automated temperature monitoring system using stochastic simulation.
J. M. Bewley*1,2 and M. M. Schutz2, 1University of Kentucky, Lexington, 2Purdue University, West Lafayette, IN.

Missouri Goat Camp: Collaborative effort to enhance successful goat production projects by Missouri youth.
E. L. Walker*1,2, B. Fay2, H. Swartz3, and C. Clifford-Rathert3, 1Missouri State University, Springfield, 2University of Missouri, Greenfield, 3Lincoln University, Jefferson City, MO.

Food Safety Symposium
Potential Impact of Reduced Antibiotic Use and the Roles of Prebiotics, Probiotics, and other Alternatives in Antibiotic-Free Broiler Production
Chair: Michael Hume, USDA-ARS, SPARC, FFSRU
401/402

9:30 AM

Probiotics and direct-fed microbials: Practical applications and real-world needs.
J. T. Barton*, The Poultry Federation Lab.

9:45 AM

Preference for diverse pastures by sheep in response to intraruminal administrations of tannins, saponins, and alkaloids.
J. J. Villalba*1, F. D. Provenza1, A. K. Clemensen1, R. Larsen3, and J. Juhnke3, 1Utah State University, Logan, 2University of California, Templeton.

10:00 AM

Probiotics: Current limitations and future potential in commercial poultry.
B. M. Hargis*1, G. Tellez1, R. E. Wolfenden1, S. Shivaramaiah1, A. D. Wolfenden1, S. E. Higgins2, and T. E. Porter2, 1University of Arkansas, Fayetteville, 2University of Maryland, College Park.

10:30 AM

Alternatives to antibiotic treatment for necrotic enteritis.
C. L. Hofacre*1, M. Lee1, and G. Mathis2, 1The University of Georgia, Athens, 2Southern Poultry Research, Athens, GA.

11:00 AM

Historic perspective: Prebiotics, probiotics, and other alternatives to antibiotics.
M. E. Hume*, USDA, ARS, Food and Feed Safety Research Unit, College Station, TX.

11:30 AM

Experiences with drug-free broiler production.
J. Smith, Fieldale Farms, Baldwin, GA.

12:00 PM

Application and consequences of bacteriocins to control Campylobacter in poultry production.
N. Stern, USDA, ARS, SAA, Poultry Microbiological Safety Research Unit, Athens, GA.

Forages and Pastures
Grazing and Forage Management
Chair: John Arthington, University of Florida Range Cattle Research and Education Center
304

9:30 AM

Effects of microclimate and pasture characteristics on temporal/spatial distribution of beef cows in Midwestern pastures.
D. A. Bear*, J. R. Russell, and D. G. Morrical, Iowa State University, Ames.

9:45 AM

Preference for diverse pastures by sheep in response to intraruminal administrations of tannins, saponins, and alkaloids.
J. J. Villalba*1, F. D. Provenza1, A. K. Clemensen1, R. Larsen3, and J. Juhnke3, 1Utah State University, Logan, 2University of California, Templeton.
10:00 AM  | 94  | Grazing behavior of cattle and sheep grazing alone or together on grass swards differing in plant species diversity.  
|  |  | H. M. Cuchillo* and J. Isselstein, Georg-August University of Goettingen, Institute of Grassland Science, Goettingen, Germany.

10:15 AM  | 95  | Evaluation of dairy heifer performance and pasture composition when co-grazing heifers and goats.  
|  |  | T. S. Dennis*, L. J. Unruh-Snyder, M. K. Neary, J. E. Tower, and T. D. Nennich, Purdue University, West Lafayette, IN.

10:30 AM  | 96  | Effects of aluminum from water-treatment-residual applications to pastures on mineral status of cattle and forage mineral concentrations.  

10:45 AM  | 97  | Effect of maturity and nitrogen fertilization on bahiagrass production and nutritive value.  
|  |  | N. M. Kenney*, J. E. Sawyer, R. O. Dittmar III, and T. A. Wickersham, Texas A&M University, College Station.

11:00 AM  | 98  | Break

11:15 AM  | 99  | Effect of mineral supplementation on the performance by stocker cattle grazing winter-wheat pasture.  
|  |  | S. A. Gunter*1 and G. F. Combs2, 1USDA-ARS, Southern Plains Range Research Station, Woodward, OK, 2USDA-ARS, Grand Forks Human Nutrition Research Center, Grand Forks, ND.

11:30 AM  | 100 | Effect of corn hybrid on the amount of residue available for grazing relative to grain yield.  

11:45 AM  | 101 | Replacing synthetic N with clovers or alfalfa in bermudagrass pastures for growing calves.  

12:00 PM  | 102 | Effects of winter swath grazing barley and millet on background and feedlot performance and rumen metabolism of beef calves.  
|  |  | R. Kumar*, H. A. Lardner, and J. J. McKinnon, University of Saskatchewan, Saskatoon, Canada, Western Beef Development Centre, Humboldt, Saskatchewan, Canada.

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**Graduate Student Symposium**  
Transitions: Preparing for Your Future  
Chair: Allison Meyer, North Dakota State University  
Sponsors: ASAS, ADSA, Lucta, West Central  
Korbel Ballroom 4abc

9:30 AM  |  | The importance of leadership in industry careers.  
|  |  | J. Simmons, Elanco.

9:55 AM  |  | Non-traditional career pathways for animal science students.  
|  |  | S. P. Poulos, The Coca-Cola Company, Atlanta, GA.

10:20 AM  |  | Panel discussion

10:35 AM  |  | Student opportunities in ASAS.  
|  |  | H. M. White, Purdue University, West Lafayette, IN.

10:40 AM  | 102 | Surviving the transition from thesis to published manuscript: An editor’s perspective of the review process.  
|  |  | J. L. Sarlin*, Auburn University, Auburn, AL.

11:05 AM  | 103 | Taking the reins: Transitioning from PhD student to associate professor.  
|  |  | K. A. Vonnahme*, Department of Animal Sciences, Fargo, ND.

11:30 AM  | 104 | Animal scientists of the future—Embrace change, challenges, and opportunities.  
|  |  | M. E. Benson*, Washington State University, Pullman.

11:55 AM  |  | Panel discussion
### Growth and Development

**Regulatory Mechanisms in Growth and Development**

**Chairs**: Nick Gabler, Iowa State University; Sally Johnson, University of Florida

**Korbel Ballroom 1ab**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>The effect of feeding frequency on circulating thyroid hormones in turkey chicken. A. Towhidi*, A. Yahyabeig, and E. Dirandeh, University of Tehran, Karaj, Tehran, Iran.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>The role of syndecan-4 cytoplasmic domain in turkey skeletal muscle growth and development. Y. Song*, D. C. McFarland, and S. G. Velleman, Ohio Agricultural Research and Development Center, The Ohio State University, Wooster. 1Department of Animal and Range Sciences, South Dakota State University, Brookings.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Comparative phylogenetic analysis of gut microbiota of broilers fed with and without antibiotics. P. Singh*, A. Karimi, P. W. Waldroup, and Y. M. Kwon, University of Arkansas, Fayetteville. 1University of Kurdistan, Sanadaj, Kurdistan, Iran.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Effects of nutrient balance and implant status on IGF-1 and PUN concentrations of feedlot calves. T. Lee, L. K. Mamedova, S. Guillossou, B. J. Bradford, C. D. Reinhardt, and D. U. Thomson, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Growth hormone and insulin-like growth factor I have different effects on bovine myoblasts and myotubes in culture. X. Ge* and H. Jiang, Virginia Polytechnic Institute and State University, Blacksburg.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Mitochondrial complex I protein is correlated to residual feed intake in beef cattle. M. H. Ramos and M. S. Kerley, University of Missouri, Columbia.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Bone tissue-specific over-expression of growth differentiation factor 11 propeptide transgene causes homeotic transformation of the seventh cervical vertebra into a thoracic vertebra in mice. Z. Li, M. Kawassumi, B. Zhao, S. Moisyadi, and J. Yang, University of Hawaii at Manoa, Honolulu.</td>
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</table>

### Horse Species 1

**Chair**: Betsy Greene, University of Vermont

**Korbel Ballroom 1e**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>Soaking hay in water to reduce soluble carbohydrate concentrations prior to horse feeding. K. Martinson* and C. Sheaffer, University of Minnesota, St. Paul. 1USDA-ARS, St. Paul, MN.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Fasting length and hay type on metabolic parameters in the horse. A. M. Bruce and E. L. Wagner, Auburn University, Auburn, AL.</td>
</tr>
</tbody>
</table>
10:00 AM 119  Effects of endophyte-infested fescue seed consumption on post exercise recovery of horses in humid climates.  

10:15 AM 120  Digestibility of oats in horses using the substitution approach.  
A. D. Woodward*, A. Willyard, A. Buckley, J. Liesman, C. F. M. de Lange, and N. L. Trotter, Michigan State University, East Lansing, University of Guelph, Ontario, Canada.

10:30 AM  Break

10:45 AM 121  Effect of dietary energy manipulation on mares and their foals: Performance and hormones of mares in late gestation.  
K. N. Winsco, I. A. Coverdale, and C. J. Hammer, Department of Animal Science, Texas A&M University, College Station.

11:00 AM 122  Evaluation of the capacity for maternal transfer and foal synthesis of long-chain polyunsaturated fatty acids.  

11:15 AM 123  Profiling the change in fecal microbial populations of mares and foals over time.  
J. E. Earing, A. C. Durig, G. L. Gellin, M. D. Flythe, and L. M. Lawrence, University of Kentucky, Lexington.

11:30 AM 124  Stallion spermatozoal parameters of motility and conception rates on a large commercial ranch.  

11:45 AM  Break

12:00 PM 125  Weight estimation in miniature horses and Shetland ponies.  
A. M. Bruce*, E. L. Wagner, and P. J. Tyler, Auburn University, Auburn, AL.

E. L. Wagner* and P. J. Tyler, Auburn University, Auburn, AL.

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National ADSA Dairy Foods Oral  
Dairy Foods Oral Student Competition  
Chair: Kasipathy Kailasapathy, University of Western Sydney  
501/502

9:30 AM 127  The effect of sodium gluconate on pH, lactose, lactic and, and water-soluble Ca changes during Cheddar cheese ripening.  
C. Phadungath and L. E. Metzger, Midwest Dairy Foods Research Center, University of Minnesota, St Paul.

9:45 AM 128  The impact of starter culture and annatto on the flavor and functionality of whey protein concentrate.  
R. E. Campbell*, R. E. Miracle, and M. A. Drake, North Carolina State University, Raleigh.

10:00 AM 129  Exopolysaccharides modify the functional properties of whey protein concentrate.  
G. Deep and A. Hassan, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

10:15 AM 130  Evaluation of the effects of cheese milk fat content on the lipid composition and flavor of liquid whey and whey protein concentrate.  
A. E. Croissant*, L. Dean, and M. A. Drake, North Carolina State University, Raleigh.

10:30 AM 131  Growth and production of volatile compounds by Lactobacillus casei in Cheddar cheese extract under Cheddar cheese ripening condition.  

P. Kethireddipalli, A. R. Hill, and D. G. Dalglish, University of Guelph, Guelph, ON, Canada.
Starter cultures and cattle feed manipulation enhance conjugated linoleic acid levels in Cheddar cheese. 

Transcriptional stress responses to hydrogen peroxide in Bifidobacterium longum. 
T. S. Oberg*, J. L. Steele, S. C. Ingham, and J. R. Broadbent, 1Utah State University, Logan, 2University of Wisconsin, Madison.

Positive influence of milk on the expression of some stress-induced genes in Bifidobacterium longum. 
W. Dominguez* and D. J. O'Sullivan, University of Minnesota.

Impact of color of low fat Cheddar cheese on consumer preference. 
R. Wadhwani*, D. J. McMahon, and C. Maughan, Utah State University, Logan.

Nonruminant Nutrition 
Amino Acids 1
Chair: Ryan Dilger, University of Illinois
Sponsor: Novus International Inc.
Korbel Ballroom 2c

Dietary supplementation of L-glutamine and L-glutamate to newly hatched broiler chickens. 
Y. Zhao*, P. R. Ferket, G. Wu, K. Nakagawa, and S. W. Kim, 1North Carolina State University, Raleigh, 2Texas A&M University, College Station, 3Ajinomoto Co. Inc., Tokyo, Japan.

The digestible lysine requirement of Cobb 500 × Hubbard M99 male broilers from 35 to 49 days. 
M. D. Dimova*, R. B. Shirley, J. L. Usry, P. B. Tilman, M. E. Freeman, and A. J. Davis, 1University of Georgia, Athens, 2Ajinomoto Heartland, LLC, Chicago, IL.

The effect of dietary pea and amino acid levels on the performance of broiler chickens. 
S. M. Ebsim*, T. D. Warkentin, and H. L. Classen, 1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Crop Development Centre, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

Effect of a mono component protease on true amino acid digestibility of full fat soy for broiler chickens using different methods. 

Ileal digestibility of the amino acids of soybean meals of different origin in broilers. 

Nutrient density and balanced amino acids to ME ratio are drivers of growth, feed efficiency and carcass yield in broiler chickens. 
L. F. Romero* and V. Ravindran, 1Danisco Animal Nutrition, Marlborough, UK, 2Massey University, Palmerston North, New Zealand.

Digestible lysine requirements of Cobb × Cobb 700 male broilers from twenty-eight to forty-two days of age. 
W. A. Dozier, A. Corzo, M. T. Kidd, and P. B. Tillman, 1Auburn University, Auburn, AL, 2Mississippi State University, Mississippi State, 3Ajinomoto Heartland LLC, Chicago, IL.

Maximizing the use of supplemental amino acids in diets for 7- kilogram pigs. 

Well-fed piglets prefer amino acids that elicit umami taste. 
G. Tedo*, E. Roura, M. Reina, J. L. Ruiz-de la Torre, and X. Manteca, 1Lucta SA, Barcelona, Spain, 2Celltec-University of Barcelona, Barcelona, Spain, 3Autonomous University of Barcelona, Barcelona, Spain.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>146</td>
<td>Effect of fat source and levels, with lysophospholipids, on broiler performance, fatty acid digestibility and apparent metabolizable energy content in feed.</td>
<td>B. K. Zhang*, H. T. Li, Y. M. Guo, D. Q. Zhao, China Agricultural University, Beijing, China, Kemin Industries Co. Ltd, Zhuhai, China.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>148</td>
<td>Whole body retention of highly unsaturated n-3 fatty acids (HUFA) and apparent conversion from 18:3n-3 are independent of body weight in pigs fed flaxseed diets.</td>
<td>H. R. Martínez Ramírez, J. K. G. Kramer, and C. F. M. de Lange, Centre for Nutritional Modeling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, Agriculture and Agri-Food Canada, Guelph, ON, Canada.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>149</td>
<td>Effect of dietary conjugated linoleic acid on markers of intramuscular adipocytes in pork.</td>
<td>K. M. Barnes*, N. Winslow, A. Shelton, and M. J. Azain, West Virginia University, Morgantown, University of Georgia, Athens.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>150</td>
<td>Effects of dietary polyunsaturation level and genistein supplementation on performance and meat quality in quails reared under heat stress.</td>
<td>N. Sahin* and C. Orhan, Firat University Faculty of Veterinary Medicine Department of Animal Nutrition, Elazig, Turkey.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>151</td>
<td>Evaluating the efficacy of OptiCal under varying levels of dietary fat inclusion.</td>
<td>J. D. Hamburg*, A. B. Batal, and S. D. Frankenbach, University of Georgia, Athens, JBS United Inc., Indianapolis, IN.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:15 AM</td>
<td>152</td>
<td>Fat digestibility in enzymatically treated soybean meal without and with choice white grease and vegetable oil.</td>
<td>K. P. Goebel* and H. H. Stein, University of Illinois, Urbana.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>155</td>
<td>The interaction of dietary fatty acids on the egg yolk fatty acid composition.</td>
<td>R. Poureslami*, K. Raes, and E. Delezie, G. Huyghebaert, A. B. Batal, and S. De Smet, University of Georgia, Athens, University College West-Flanders, Kortrijk, Belgium, Institute for Agricultural and Fisheries Research, Melle, Belgium, Ghent University, Melle, Belgium.</td>
</tr>
</tbody>
</table>
Nonruminant Nutrition Symposium
Nutrigenomics
Chair: Scott Radcliffe, Purdue University
Korbel Ballroom 1cd

9:30 AM
Introduction

9:35 AM   157
Practical uses of nutrigenomics and gene expression patterns to develop and evaluate nutritional strategies.

10:10 AM   158
Early life nutritional conditioning with dietary phosphorus.
C. M. Ashwell* and R. Angel, 1Department of Poultry Science, North Carolina State University, Raleigh,
2Department of Animal and Avian Sciences, University of Maryland, College Park.

10:45 AM
Break

11:00 AM   159
Using nutrigenomics to elucidate interrelationships in trace mineral metabolism.
S. L. Hansen*, J. W. Spears, and R. S. Fry, 1Iowa State University, Ames, 2North Carolina State University, Raleigh.

11:35 AM   160
A functional genomics view of selenium in energy metabolism, obesity, and diabetes.
X. G. Lei*, Cornell University, Ithaca, NY.

12:10 PM
Discussion

Physiology and Endocrinology
Dairy Cow Synchronization and Fertility
Chair: Paul Fricke, University of Wisconsin-Madison
505/506

9:30 AM   161
Alternative protocols to presynchronize estrous cycles in dairy cattle before a timed AI program.
J. S. Stevenson*, Kansas State University, Manhattan.

9:45 AM   162
Effects of presynchronizations with GnRH/PGF2α vs. progesterone before Ovsynch in noncyclic dairy cows.
G. Yilmazbas-Mecitoglu*, A. Keskin1, A. Gumen1, E. Karakaya2, R. Darici3, and H. Okut3, 1University of Uludag, Bursa, Turkey, 2Tarfas Co., Bursa, Turkey, 3University of Yuzuncu Yil, Van, Turkey.

10:00 AM   163
Comparison of estrus and ovulation synchronisation protocols: Effects on ovarian follicular dynamics, corpus luteum growth, and circulating steroid concentrations in lactating dairy cows.
M. M. Herlihy*, M. A. Crowe1, M. G. Diskin3, and S. T. Butler1, 1Teagasc Moorepark DPRC, Cork, Ireland, 2Teagasc Athenry APRC, Galway, Ireland.

10:15 AM   164
Effects of reducing interval from GnRH to PGF2α in Ovsynch protocol on pregnancy rate in cyclic lactating dairy cows.
A. Gumen*, G. Yilmazbas-Mecitoglu1, A. Keskin1, E. Karakaya2, Y. Celik2, and H. Okut3, 1University of Uludag, Bursa, Turkey, 2TARFAS Co., Bursa, Turkey, 3University of Yuzuncu Yil, Van, Turkey.

10:30 AM   165
Presynchronization with hCG 7 d before initiation of Resynch improves fertility similar to a Double-Ovsynch Resynch protocol in lactating dairy cows.

10:45 AM   166
Comparison of responses to Ovsynch for Holstein-Friesian and Swedish-Red cows.
A. Keskin*, G. Yilmazbas-Mecitoglu1, A. Gumen1, E. Karakaya2, Y. Celik2, and H. Okut3, 1University of Uludag, Gorûkle, Bursa, Turkey, 2TARFAS Co, Karacabey, Bursa, Turkey, 3University of Yuzuncu Yil, Van, Turkey, 4University of Wisconsin-Madison, Madison.

11:00 AM   167
Manipulation of protein feed levels during Ovsynch TAI and early embryonic development to improve fertility in lactating dairy cows.
M. B. Gordon* and R. Rajamahendran, University of British Columbia, Vancouver, BC, Canada.

11:15 AM   168
Reproductive tract differences in repeat-breeder cows.
11:30 AM  169  The effect of supplementation with conjugated linoleic acid on the reproductive performance of lactating dairy cows.  
I. A. Hutchinson*1,2, P. Lonergan2, A. C. O. Evans2, R. J. Dewhurst1, and S. T. Butler1, 1Teagasc, Moorepark DPRC, Cork, Ireland, 2University College Dublin, Dublin, Ireland, *Teagasc, Grange, Meath, Ireland.

11:45 AM  170  The impact on pregnancy rates in dairy cattle artificially inseminated with semen prepared by number of progressively motile sperm.  
L. Rabinovitch*, U. Shalit1, M. Deutsch1, Y. Zeron1, and P. Chenoweth1, 1Medical Electronic Systems, Caesarea, Israel, 2Sion A. I. Company, Shikimim, Israel, 3Charles Sturt University, Wagga Wagga, New South Wales, Australia.

12:00 PM  171  Effect of flunixin meglumine on prostaglandin metabolites and progesterone in lactating dairy cows.  
A. Ahmadzadeh*, S. Read1, K. G. Carmahan1, and J. C. Dalton1, 1University of Idaho, Moscow, 2University of Idaho, Calwell R&E.

12:15 PM  172  Development of a mechanistic metabolic model of regulation of reproductive processes in dairy cattle.  
P. Celi2, I. Lean2, H. Raadsma2, A. Rabiee2, and J. P. McNamara*, 1Washington State University, Pullman, 2University of Sydney, Camden, NSW, Australia.

Production, Management and the Environment  
Poultry 1  
Chair: Sacit F. Bilgili, Auburn University  
Korbel Ballroom 1f

9:30 AM  173  Effect of dietary supplementation of mannan-oligosaccharides and Lactobacillus-based probiotics on indigenous intestinal bacterial ecology and intestinal microarchitecture of broilers reared under heat stress.  

9:45 AM  174  Effects of turning frequency during incubation on broiler embryonic development.  
Y. M. Lin*, J. T. Brake1, S. Yahav1, and O. Elibol3, 1North Carolina State University, Department of Poultry Science, Scott Hall, Raleigh, 2Institute of Animal Science, ARO, The Volcani Center, Bet-Dagan, Israel, 3Department of Animal Science, Faculty of Agriculture, University of Ankara, Ankara, Turkey.

10:00 AM  175  Effects of arginine, vitamin E and mannanoligosaccharides after coccidiosis vaccination and challenge in broiler chickens.  
D. J. Chan-Diaz*1,2, D. Caldwell2, S. Pohl2, G. Casco2, A. Pro1, S. Fitz-Coy1, and C. A. Ruiz-Feria1, 1Texas A&M University, College Station, 2Colegio de Postgraduados, Montecillos, Mexico, *Intervet/Schering-Plough Animal Health, Millsboro, DE.

10:15 AM  176  The effect of double interspiking on fertility, stress, and hormone levels in broiler breeder males in heat-stressed environments.  
K. M. Chung*, M. O. Smith, and H. G. Kattesch, University of Tennessee, Knoxville.

10:30 AM  177  Effects of breeder feeding and trace mineral source on leg health and bone traits of broiler progeny.  
P. E. Eusebio-Balcazar*, E. O. Oviedo-Rondón1, A. Mitchell2, J. Brake1, M. J. Wineland1, V. Moraes1,3, and N. Leandro1,4, 1North Carolina State University, Raleigh, 2USDA-ARS, BARC, Beltsville, MD, 3Universidade Estadual Paulista, UNESP, Jaboticabal, SP, Brazil, 4Universidade Federal de Goiás, Goiania, GO, Brasil.

10:45 AM  178  Dietary vitamin E supplementation and shelf life of ground broiler chicken meat during refrigerated storage.  
B. Saenmahayak*, M. Singh, J. B. Hess, W. A. Dozier III, and S. F. Bilgili, Auburn University, Auburn, AL.

11:00 AM  179  Impact of feeding time and photoperiod on egg production patterns in broiler breeder females.  
D. C. Paul*, M. J. Zuidhof, A. Pishnamazi, and R. A. Renema, University of Alberta, Edmonton, Alberta, Canada.

11:15 AM  180  Dietary camelina meal for broiler chickens: Growth performance at 0, 5, and 10% inclusion rates.  

11:30 AM  181  Evaluation of a poultry house for the presence of Salmonella and fungi at different sites through the broiler production continuum.  
J. A. Byrd*, C. L. Sheffield, and T. C. Crippen, USDA-ARS-Food and Feed Safety Research Unit, College Station, TX.

11:45 AM  182  Effect of abrupt versus gradual changes to daylength on productivity of broilers.  
K. Schwean-Lardner* and H. L. Classen, University of Saskatchewan, Saskatoon, SK, Canada.
Influence of long-bright, increasing-dim, and split-dark-bright lighting programs and strain on broiler performance. R. J. Lien*, J. B. Hess, and S. F. Bilgili, Auburn University, Auburn, AL.


Production, Management and the Environment
Poultry 2
Chair: Todd J. Applegate, Purdue University
Korbel Ballroom 3c

Omega-3 PUFA and lutein enrichment: Different feeding strategies and effect on storage stability. S. Nain* and R. A. Renema, University of Alberta, Edmonton, AB, Canada.

Effect of egg storage conditions on gene expression during turkey embryonic development. J. A. Hamidu*, M. Li, G. M. Fasenko, and L. L. Guan, University of Alberta, Edmonton, Alberta, Canada, University of New Mexico, Albuquerque.

Body weight change, breast muscle, and reproductive tract development in broiler breeder hens and their effects on fertility and egg production. N. Lekrissompong*, J. T. Brake, and E. O. Oviedo-Rondon, North Carolina State University, Department of Poultry Science, Scott Hall, Raleigh.


Breeder hen age affects chick early innate immune function. M. L. Johnson* and D. R. Korver, University of Alberta, Edmonton, Canada.


Examining the sitter duck condition. K. Murdoch, K. Seward, J. Riley, D. T. Ort, and M. J. Wineland, Maple Leaf Farms, Milford, IN, North Carolina State University, Raleigh.


Modeling energy utilization of broiler breeder hens is affected by environmental temperature and dietary energy. A. Pishnamazi*, M. J. Zuidhof, R. A. Renema, and D. Paul, University of Alberta, Edmonton, Alberta, Canada.
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
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<tbody>
<tr>
<td>10:00 AM</td>
<td>Comparison of wheat or corn dried distillers grains with solubles on rumen fermentation and nutrient digestibility in feedlot heifers.</td>
<td>L. J. Walter, T. A. McAllister, W. Yang, K. Beauchemin, J. J. McKinnon</td>
<td>University of Saskatchewan, Saskatoon, SK, Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Supplementing modified wet distillers grains with solubles to long yearling steers grazing native range.</td>
<td>K. M. Rolfe, W. A. Griffin, T. J. Klopfenstein, G. E. Erickson</td>
<td>University of Nebraska, Lincoln.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Effect of feeding modified distillers grains and wet corn gluten feed compared to forage on ruminal pH, intake and digestibility when adapting cattle to finishing diets.</td>
<td>M. G. Dib, G. E. Erickson, T. J. Klopfenstein, J. O. Sarturi, R. Lindquist, K. M. Rolfe, C. D. Buckner, V. R. Bremer</td>
<td>University of Nebraska, Lincoln, Archer Daniels Midland, Columbus, NE.</td>
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<tr>
<td>11:30 AM</td>
<td>Effects of wet distillers grain and a direct-fed microbial on finishing performance and carcass characteristics of beef steers fed a sorghum-based finishing diet.</td>
<td>J. R. Jaeger, J. W. Waggoner, K. C. Olson, J. W. Bolte, S. R. Goodall</td>
<td>Western Kansas Agricultural Research Centers, Kansas State University, Hays, Kansas State University, Manhattan, Nova Microbial Technologies, Omaha, NE.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>Feeding Lactobacillus acidophilus combined with Propionibacterium freudenreichii to determine performance and carcass characteristics in feedlot heifers fed with or without wet distiller’s grains plus solubles.</td>
<td>B. K. Wilson, B. P. Holland, T. G. Nagaraja, C. R. Krehbiel</td>
<td>Oklahoma State University, Stillwater, Kansas State University, Manhattan.</td>
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<tr>
<td>12:00 PM</td>
<td>Growth performance of finishing steers fed dry or wet distillers grains plus solubles differing in sulfur content.</td>
<td>J. O. Sarturi, G. E. Erickson, T. J. Klopfenstein, J. T. Vasconcelos, W. A. Griffin, J. R. Benton</td>
<td>University of Nebraska, Lincoln.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Comparing dry, wet, or modified distillers grains plus solubles on feedlot cattle performance.</td>
<td>B. L. Nuttelman, W. A. Griffin, J. R. Benton, G. E. Erickson, T. J. Klopfenstein</td>
<td>University of Nebraska, Lincoln.</td>
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Ruminant Nutrition  
Dairy: Protein and Fat  
Chair: Alex Bach, IRTA, Spain  
Korbel Ballroom 2a

9:30 AM 209 Dietary saturated fatty acid source and parity influence lactational performance of early lactation Holstein dairy cows.  
M. Hollmann* and D. K. Beede, Michigan State University, East Lansing.

9:45 AM 210 Adaptations in the transcriptome of adipose tissue in transition dairy cattle.  
S. Rocco, G. Duncan, J. Loor, J. Vierck, and J. P. McNamara, Washington State University, Pullman, University of Illinois, Urbana.

10:00 AM 211 Use of omega-3 fatty acid rich algae and their oil as a feed supplement for dairy cattle.  

10:15 AM 212 Additive effects of propionate, trans-10, cis-12-CLA and acetate on milk fat production and composition in dairy cows.  
G. Maxin, H. Rulquin, J. L. Peyraud, and F. Glasser, INRA-Agrocampus Ouest, Rennes, France, INRA, Theix, Saint-Genes-Champanelle, France.

10:45 AM 214 Effects of dietary protein concentration and coconut oil supplementation on nitrogen utilization and production in dairy cows.  

11:15 AM 216 Effect of Protein Edge on ruminal microbial protein production and performance of lactating dairy cows.  

11:30 AM 217 Use of plasma concentrations to estimate bioavailability of methionine in rumen-protected products fed to dairy cows.  

11:45 AM 218 Evaluation of a ruminally protected lysine product to increase milk protein production and plasma lysine concentration.  

12:00 PM 219 Effect of rumen-protected lysine and methionine on lactating performance in lactating water buffalo.  
C. X. Zou, Q. F. Tang, G. S. Qin, B. Z. Yang, S. L. Li, S. J. Wei, K. Liang, L. L. Li, X. W. Liang, and Z. S. Xia, Buffalo Research Institute, Nanning, China, College of Animal Science, Guangxi University, Nanning, China.

ADSA-SAD (Student Affiliate Division) Undergraduate Competition
Dairy Foods
Chair: Sylvia Kehoe, University of Wisconsin-River Falls

11:00 AM 221 Chocolate milk as a sports recovery drink.
H. L. Weeks*, D. R. Winston, and R. E. James, Virginia Polytechnic Institute and State University, Blacksburg.

11:15 AM 222 Dairy foods and the prevention of childhood obesity.
J. E. Anderson* and C. C. Williams, Louisiana State University, Baton Rouge.

11:30 AM 223 Understanding theropy milk test.
R. A. Russell* and C. D. Thompson, University of Kentucky, Lexington.

11:45 AM 224 Conjugated linoleic acid in milk is related to the diet of lactating dairy cows.
H. L. M. Tucker* and E. L. Karcher, Department of Animal Science, Michigan State University, East Lansing.

12:00 PM 225 Using microfiltration to extend milk shelf life.
E. W. Cloninger*, Pennsylvania State University, University Park.

12:15 PM 226 Reducing milk price volatility through innovative programs at the local and global level.
W. Robinson*, Clemson University, Clemson, SC.

Teaching/Undergraduate and Graduate Education
Graduate and Undergraduate Teaching I
Chair: Mike Orth, Michigan State University

11:00 AM 227 The Missouri Pathways Partnership—Inroads in distance education.
E. L. Walker**, S. P. Webb¹, J. D. Ulmer², and A. Evert³, ¹Missouri State University, Springfield, ²Texas Tech University, Lubbock, ³Redlands Community College, El Reno, OK.

11:15 AM 228 The effect of supplemental online resources in distance education format on undergraduate animal science laboratory instruction.
J. Q. Bing*, S. E. Pratt-Phillips, and C. E. Farin, North Carolina State University, Raleigh.

11:30 AM 229 APPLAUSE—A tool for improving student presentations.
M. M. Beck* and R. Johnson, Clemson University, Clemson, SC.

11:45 AM 230 Student performance is enhanced by pedagogical shift to lecture podcasts.
J. J. Parrish* and R. L. Monson, University of Wisconsin, Madison.

ADSA Southern Section Symposium
Dairy Cattle Grazing in the Southern United States
Chair: Albert De Vries, University of Florida
Korbel Ballroom 3a

2:00 PM 231 Why dairy producers are choosing to graze (again) in southeastern United States.
M. E. Sowerby*, University of Florida, Gainesville.

2:30 PM 232 Nutritional and management strategies for lactating dairy cows housed on pasture-based systems in the southeastern United States.
C. R. Staples**, L. E. Sollenberger¹, J. H. Fike¹, B. M. Macoun¹, and R. S. Fontaneli¹, ¹University of Florida, Gainesville, ²Virginia Tech University, Blacksburg, ³Mississippi State University, Raymond, ⁴Embrasa Brasileira de Pesquisa Agropecuaria, Brazil.

3:00 PM 233 Nutrient management considerations for grazing dairies.
S. R. Hill*, Department of Animal and Dairy Science, Mississippi State University, Mississippi State.
<table>
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<tr>
<td>3:30 PM</td>
<td>Break</td>
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| 3:45 PM| Reproduction and genetic programs for seasonal pasture-based dairy production systems.  
S. P. Washburn*, North Carolina State University, Raleigh. |
| 4:15 PM| Comparisons of the economics and costs of producing milk on conventional versus grass-based "New Zealand style" dairies in Mississippi.  
C. W. Herndon*, Mississippi State University, Mississippi State. |
| 4:45 PM| ADSA Southern Section Business Meeting                                  |

**ADSA-SAD (Student Affiliate Division) Undergraduate Competition**  
**Dairy Production**  
**Chair:** Sylvia Kehoe, University of Wisconsin-River Falls  
705

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<th>Time</th>
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| 2:00 PM| Precision feeding for improved sustainability efforts.  
V. J. Eubanks*, Clemson University, Clemson, SC. |
| 2:15 PM| The benefits of anaerobic digestion as a waste management procedure on dairy farms.  
| 2:30 PM| Changing the attitude towards tail docking dairy cattle.  
B. A. Wenner* and E. L. Karcher, Department of Animal Science, Michigan State University, East Lansing. |
| 2:45 PM| Improving freestall housing to address animal welfare and cow comfort.  
| 3:00 PM| Off to a good start.  
J. C. Landry* and C. C. Williams, Louisiana State University, Baton Rouge. |
| 3:15 PM| Hemorrhagic bowel syndrome: The mysterious killer.  
B. P. Cashell*, Pennsylvania State University, University Park. |
| 3:30 PM| Compost bedded pack barns: Opportunities, challenges, and management considerations.  
C. M. Sheafer* and J. M. Bewley, University of Kentucky, Lexington. |

**ADSA-SAD (Student Affiliate Division) Undergraduate Competition**  
**Undergraduate Original Research**  
**Chair:** Sylvia Kehoe, University of Wisconsin-River Falls  
707

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<th>Time</th>
<th>Session</th>
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| 2:00 PM| The effects of metaphylaxis antibiotics on health and development of neonatal bull calves.  
K. G. DeHaan*, G. A. Holub, and M. A. Tomaszewski, Texas A&M University, College Station. |
| 2:15 PM| Effects of Purina Cornerstone 20 Ampl-Calf DX30 on calf growth.  
A. A. Blasi*, C. C. Stanley, C. R. Krehbiel, D. A. Jones, and W. Hurst, Oklahoma State University, Stillwater.  
Land O Lakes Purina Mills LLC. |
| 2:30 PM| Use of omega-3 fatty acid rich algae and their oil as a feed supplement for dairy cattle.  
D. M. Shepherd*, J. A. Stanney, B. A. Corl, M. J. de Veth, and D. R. Winston, Virginia Polytechnic Institute and State University, Blacksburg.  
Balchem Corp., New Hampton, NY. |
| 2:45 PM| Effect of rumen sampling on time budget of lactating Holstein dairy cows.  
J. Deming*, P. D. Krawczel, and S. E. Boucher, W. H. Miner Agricultural Research Institute, Chazy, NY. |
| 3:00 PM| Effect of coliform mastitis on osteoponitin expression in mammary tissues of Holstein dairy cows.  
Department of Large Animal Clinical Sciences, Michigan State University, East Lansing. |
Evaluation of dairy cattle lying behavior in commercial freestall barns.  
C. Gravatte*, C. Coombs, and J. Bewley, University of Kentucky, Lexington.

Associations of DNA marker profiles for dry matter intake and efficiency with DNA marker profiles for fat-corrected milk yield and body weight.  
D. E. Brown**, C. D. Dechow†, J. M. Daubert‡, W. Liu§, and S. Bauck∥, †Pennsylvania State University, University Park,  
‡IGENITY Livestock Production Unit, Duluth, GA.

Evaluating the effectiveness of “cow-side” tests to identify animals with a dominant follicle at the time of insemination in a TAI protocol.  
T. L. Crouch* and J. L. Fain, Clemson University, Clemson, SC.

Effects of temperature on X chromosome carrying compared to Y chromosome carrying bovine sperm cells: Preliminary results.  
L. A. Krueger*, J. L. Herring†, and R. Wilborn‡, †Alabama A&M University, Normal,  
‡Auburn University, Auburn, AL.

Corn grain and liquid feed as non-fiber carbohydrate sources in diets for lactating dairy cows: Digestibility trial.  
E. M. Eilenfeld*, M. L. Eastridge, and J. L. Firkins, The Ohio State University, Columbus.

Animal Behavior and Well-Being  
Poultry 1: Ducks, Layers, and Turkeys  
Chair: Anna Johnston, Iowa State University

Who did it and why: Floor laying by Pekin ducks.  
M. M. Makagon* and J. A. Mench, University of California, Davis.

Nest choices of Pekin ducks.  
M. M. Makagon*, C. B. Tucker, and J. A. Mench, University of California, Davis.

The effect of human induced stressors on the vocalizations of commercial brown and white egg laying hens.  
E. Otu-Nyarko*, J. An†, P. M. Scheifiele‡, D. B. Miller†, M. T. Johnson†, and M. J. Darre†, †University of Connecticut,  
‡University of Cincinnati, OH, †Marquette University, Milwaukee, WI.

Influence of environmental management methods on the expression of glucocorticoid receptors in the laying hen’s ovary.  
D. V. Arbona*, L. A. Bola, and J. B. Hoffman, North Carolina State University, Raleigh.

The influence of cage housing system and laying hen strain on bone quality pre and post slaughter.  
A. McMillan†, K. Juurlink‡, B. Rathgeber‡, and M. Jendral*‡, †Nova Scotia Agricultural College, Truro, Nova Scotia,  
‡Agriculture Agri-Food Canada, Truro, Nova Scotia, Canada.

Break

Astroturf as a dustbathing substrate for laying hens.  
G. Alvino*, G. Archer, and J. Mench, University of California, Davis.

The behaviour of laying hens in commercial aviary systems.  
M. Perez de Villareal*‡ and I. Estevez‡, †Neiker-Tecnalia, Vitoria-Gasteiz, Spain,  
‡IKERBASQUE, Bilbao, Spain.

On-farm survey of beak characteristics in White Leghorns as a result of hot blade or infrared beak trimming.  
T. Gabrush‡, C. Carruthers*†, K. Schwean-Lardner§, T. Knezacek†, C. Bennett‡, and H. L. Classen‡, †University of Saskatchewan, Saskatoon, SK Canada,  
‡Manitoba Agriculture, Food & Rural Initiatives, Winnipeg, MB Canada.

Effects of different infrared beak treatment protocols on chicken welfare and physiology.  
R. L. Dennis* and H. W. Cheng, LBRU, USDA-ARS, West Lafayette, IN.

Brain and skull lesions in turkeys resulting from non-penetrating captive bolt, cervical dislocation, cervical crushing, and blunt trauma.  
Animal Health

Immunity, Probiotics and Health Status
Chair: Tanya Gressley, University of Delaware
Sponsors: Elanco Animal Health, Pfizer Animal Health

2:00 PM 263
An experiment in transmission of Mycoplasma bovis in sand bedding to naive dairy calves.
D. J. Wilson*, A. Justice-Allen1, T. J. Baldwin1, R. T. Skirpstunas2, K. B. Cavender2, and G. Goodell1, the Dairy Authority, Greeley, CO.

2:15 PM 264
Effect of supplementing fatty acids to prepartum Holstein cows on transfer of passive immunity to calves.

2:30 PM 265
Effect of a yeast autolysate combined with probiotics on performance and gut health of broilers.
A. Ganner*, S. Masching2, N. Reisinger1, G. Schatzmayr1, and T. Applegate3, 1Biomin Research Center, Tulln, Austria, 2Biomin Holding GmbH, Herzogenburg, Austria, 3Purdue University, West Lafayette, IN.

2:45 PM 266
Effect of NuPro supplementation on intestinal Clostridium perfringens levels in broiler chickens.
R. Thanissery*, J. L. McReynolds2, D. E. Conner1, K. S. Macklin1, P. A. Curtiss1, and Y. O. Fasina1, 1Auburn University, Auburn, AL, 2SPARC-USDA-ARS, College Station, TX.

3:00 PM 267
A modified in vitro larvae migration inhibition assay using rumen fluid to evaluate H. contortus viability.
T. R. Whitney*, D. R. Klein2, A. E. Lee1, C. B. Scott1, and T. M. Craig3, 1Texas AgriLife Research, San Angelo, 2Texas A&M Univ., College Station, 3Texas A&M Univ., College Station.

3:15 PM 268
Effect of feeding nitarsone medicated ration on the acquisition and development of nematode parasites in the chicken.
F. D. Clark*, C. A. Tucker1, J. Reynolds1, T. A. Yazwinski1, S. Clark2, V. Smith2, and K. Dobson2, 1University of Arkansas, Fayetteville, 2Alpharma, Inc, Bridgewater, NJ.

3:30 PM 269
Effect of a Lactobacillus probiotic and nitrate in feed on Salmonella colonization in broiler chicks.

3:45 PM 270
Effect of food additives on intestinal microflora in caeca of broilers challenged with Eimeria species analyzed using 16S rDNA pyrosequencing.
A. Nalian*, M. Manoharan1, J. Bray2, S. Dowd3, and A. Martynova-Van Kley2, 1Stephen F. Austin State University, Nacogdoches, TX, 2Research and Testing Laboratory, Lubbock, TX.

4:00 PM 271
Genetic line and dietary immunomodulator effects on expression of CXCL12 in chicken heterophils responding to Salmonella enteritidis.

4:15 PM 272
Nitric oxide synthesis by chicken macrophages results in coordinated changes in the mRNA abundance of multiple arginine transporters.
M. Moulds* and B. D. Humphrey, California Polytechnic State University, San Luis Obispo.

4:30 PM 273
Dietary cinnamaldehyde enhances intestinal protective immunity against Eimeria acervulina, E. maxima, and E. tenella in broiler chickens.
S.-H. Lee*, H. Lillehoj1, S.-A. Jang1, K.-W. Lee1, M.-S. Park1, and D. Bravo1, 1Animal and Natural Resources Institute, Agricultural Research Service-US Department of Agriculture, Beltsville, MD, 2Panicosa S. A., Grand Sacoconnex, Geneva, Switzerland.

4:45 PM 274
Immune system stimulation and sulfur amino acid intake alter the pathways of glutathione metabolism at transcriptional level in pigs.
A. Rakhshandeh*, A. Holliss2, N. A. Karrow3, and C. F. M. de Lange1, 1University of Guelph, Department of Animal and Poultry Science, 2University of Guelph, Advance Analysis Centre, Guelph, Ontario, Canada.

S. S. Aly*, B. L. Mangold*, R. H. Whitlock¹, R. W. Sweeney¹, R. J. Anderson⁴, J. Jiang⁴, Y. H. Shukken⁶, E. P. Hovingh⁷, D. R. Wolfgang⁸, J. S. Van Kessel⁹, J. S. Korns⁹, J. E. Lombard⁹, J. M. Smith¹⁰, and I. A. Gardner¹, ¹Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis, ²California Department of Food and Agriculture, Animal Health Branch, Sacramento, ³John’s Research Laboratory, New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, Kennett Square, ⁴Antel BioSystems, Inc, Lansing, MI, ⁵Department of Statistics, University of California, Davis, ⁶California Animal Health and Food Safety Laboratory, Tulare Branch, Tulare.

Correlation between culture and quantitative real-time PCR results for *Mycobacterium avium* subspecies *paratuberculosis* in pooled fecal and environmental samples.

S. S. Aly*, B. L. Mangold*, R. H. Whitlock¹, R. W. Sweeney¹, R. J. Anderson⁴, J. Jiang⁴, Y. H. Shukken⁶, E. P. Hovingh⁷, D. R. Wolfgang⁸, J. S. Van Kessel⁹, J. S. Korns⁹, J. E. Lombard⁹, J. M. Smith¹⁰, and I. A. Gardner¹, ¹Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis, ²California Department of Food and Agriculture, Animal Health Branch, Sacramento, ³John’s Research Laboratory, New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, Kennett Square, ⁴Antel BioSystems, Inc, Lansing, MI, ⁵Department of Statistics, University of California, Davis, ⁶California Animal Health and Food Safety Laboratory, Tulare Branch, Tulare.

Fecal culture and direct PCR in determining *Mycobacterium avium* ssp. *paratuberculosis* infectivity.

C. C. Wu*, J. E. Williams², T. L. Lin¹, and G. R. G. Monifi³, ¹Purdue University, West Lafayette, IN, ²University of Florida, Gainesville, ³Infectious Diseases Incorporated, Bellevue, NE.

Estimation of test parameters for fecal culture and serum ELISA for detection of *Mycobacterium avium* ssp. *paratuberculosis* fecal shedding.

L. A. Espejo*, F. J. Zagmutt¹, H. Groenendaal¹, and S. J. Wells¹, ¹University of Minnesota, St. Paul, ²Vose Consulting, Boulder, CO.

Effect of delaying exposure to Johnne’s disease until adulthood on development of new infections in adult dairy cows.


Importance of latent infected animals in MAP infection dynamics in dairy herds.

Y. H. Schukken*, A. K. Pradhan¹, R. M. Mitchell¹, Z. Lu¹, R. Smith¹, Y. T. Grohn¹, R. H. Whitlock², E. Hovingh², J. Smith³, J. A. VanKessel¹, J. Korns¹, and D. Wolfgang¹, ¹Cornell University, Ithaca, NY, ²University of Pennsylvania, Kennett Square, ³Pennsylvania State University, State College, ⁴University of Vermont, Burlington, ⁵ARS-USDA, Beltsville, MD.


Estimating the efficacy of imperfect paratuberculosis vaccines in dairy cattle from longitudinal field data with Markov chain Monte Carlo models.


Molecular epidemiology of *Mycobacterium avium* ssp. *paratuberculosis* in three dairy herds in the northeastern United States. 

A. K. Pradhan*, R. M. Mitchell¹, A. J. Kramer², J. Dieguez³, R. H. Whitlock¹, J. M. Smith⁴, E. Hovingh⁵, J. S. Van Kessel¹, J. S. Korns¹, and Y. H. Schukken¹, ¹Cornell University, Ithaca, NY, ²Utrecht University, Utrecht, the Netherlands, ³University of Santiago de Compostela, Santiago de Compostela, Spain, ⁴University of Pennsylvania, Kennett Square, ⁵University of Vermont, Burlington, ⁶Pennsylvania State University, University Park, ⁷Environmental Microbial and Food Safety Laboratory, ANRI, USDA-ARS, Beltsville, MD.

Field evaluation of TG marker IS1311 PCR-REA for rapid differentiation of Indian Bison type *Mycobacterium avium* subspecies *paratuberculosis*.


Rising incidence of *Mycobacterium avium* ssp. *paratuberculosis* in the North Indian population of animal keepers suspected for IBD/CD.

S. V. Singh*, A. Shishodiya, A. Panwar, B. Singh, and A. Kumar, Central Institute for Research on Goats, Makhdoom, Farah, Mathura (UP), India.
Herd-level prevalence of Johne’s disease on dairy farms in Utah and the surrounding intermountain west.
D. J. Wilson*, K. A. Rood¹, and J. D. Trujillo², Utah State University, Logan, Iowa State University, Ames.

Breeding & Genetics and Physiology & Endocrinology Joint Symposium
Bridging the Gap Between Physiology and Genomics
Chair: Milt Thomas, New Mexico State University
Korbel Ballroom 4def

Spanning research from QTL to functional unit of a gene.
J. M. Reecy*, Iowa State University, Ames.

Advancing toward functional genomics.
H. L. Neibergs*, Washington State University, Pullman.

Genomic analysis of data from physiological studies.
D. J. Garrick*, Iowa State University, Ames.

Genomic information for physiologists.
M. G. Thomas*, K. L. DeAtley, S. O. Peters, G. A. Silver, and A. M. Clayshulte, New Mexico State University, Las Cruces.

Companion Animals Symposium
Microbes and Health
Chair: Kelly S. Swanson, University of Illinois
Sponsors: Hill’s Science Diet, P&G
Korbel Ballroom 1e

Introduction: Microbes and health.
K. S. Swanson*, University of Illinois, Urbana.

Bacterial influences on mammalian gut development.
R. K. Buddington*, University of Memphis, Memphis, TN.

Microbes and gastrointestinal health of dogs and cats.
J. S. Suchodolski*, GI Laboratory, Texas A&M University, College Station.

The oral microflora and periodontal health in dogs.

Using “humanized” mice to study the effect of diet on the human gut microbiome.
P. Turnbaugh*, Harvard University, Cambridge, MA.

Dairy Foods Symposium
Microbiology and Flavor of Cheese: Impact of Lower Salt-in-Moisture Content of Low Fat and Reduced Sodium Cheeses
Chair: Don McMahon, Utah State University
Sponsor: Dairy Management Inc.
Korbel Ballroom 2a

Introduction.
D. J. McMahon, Utah State University, Logan.

How model cheese composition, texture, and structure influence aroma and salt mobility, release, and perception?
2:40 PM 297 Flavor development in low fat cheese.
M. A. Drake*, Southeast Dairy Foods Research Center, North Carolina State University, Raleigh.

3:10 PM Break

3:25 PM 298 Influence of salt-in-moisture on starter and nonstarter lactic acid bacteria.
J. L. Steele* and J. R. Broadbent1, 2University of Wisconsin-Madison, Madison, 3Utah State University, Logan.

3:55 PM 299 Cheesemaking processes and strategies for manufacture of low fat and reduced sodium cheeses.
T. P. Guinee* and K. N. Kilcawley, Moorepark Food Research Centre, Teagasc, Fermoy, Co. Cork, Ireland.

4:25 PM 300 The effect of intrinsic and extrinsic factors on the fate of pathogens in specialty and lower fat/reduced sodium cheese.

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Dairy Foods Processing
Chair: Rafael Jimenez-Flores, California Polytechnic State University
501/502

2:00 PM 301 Temperature and vacuum conditions for removal of added carbon dioxide from milk.
D. M. Barbano* and J. H. Hotchkiss, Cornell University, Ithaca, NY.

2:15 PM 302 Processing factors that influence casein (CN) and serum protein (SP) separation by microfiltration (MF).
E. E. Hurt* and D. M. Barbano, Cornell University, Ithaca, NY.

2:30 PM 303 Multistage process with ceramic graded permeability (GP) microfiltration (MF) membranes to produce high casein content micellar casein concentrate (MCC) with low lactose.
J. Zulewska*2, M. W. Newbold1, and D. M. Barbano1, 1Cornell University, Ithaca, NY, 2University of Warmia and Mazury, Olsztyn, Poland.

2:45 PM 304 Functional modification of whey protein concentrate by microfiltration.
H. Somni* and V. V. Mistry, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

3:00 PM 305 Ultrafiltration of milk at high temperature.
M. Lewis*, A. Grandison, N. On-Nom, and D. Wang, University of Reading, Reading, Berkshire, UK.

K. M. Miranda12 and L. M. Fonseca*1, 1Federal University of Minas Gerais, Belo Horizonte, MG, Brazil, 2Fundação Centro Tecnológico de Minas Gerais, Belo Horizonte, MG, Brazil.

3:30 PM 307 Investigation on coagulant properties of Calotropis procera and stabilization of its proteolytic enzymes.
G. Belvedere1, F. La Terra1, M. Manenti1, S. Lortal1, J. C. Codjia1, S. Doko1, and G. Licitra12, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2UMR Science et Technologie du Lait et de L’Oeuf, Rennes Cedex, France, 3University of Abomey-Calavi, Benin, 4University of Parakou, Benin, 5DACPA, Catania University, Catania, Italy.

3:45 PM 308 Pioneer Speaker: Quality of raw and pasteurized milk.
C. H. White*12, 1Mississippi State University, Mississippi State, 2Randolph Associates, Inc., Birmingham, AL.

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Growth and Development Symposium
Intestinal Development and Growth
Chairs: Sylvia Poulos, Coca Cola Company; Erin Connor, USDA ARS
Korbel Ballroom 1ab

2:00 PM Introduction

2:10 PM 309 Strategies to alter intestinal development, health and function of poultry to improve growth performance.
T. J. Applegate*, Purdue University, W Lafayette, IN.
2:35 PM 310  Nutritional support of intestinal health: insights from a piglet model.

3:00 PM 311  Integral role of the gut in growth signal transduction between the environment and host.
D. G. Burri*n, USDA Children’s Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.

3:25 PM  Break

3:40 PM 312  Nutrient transporters in support of ruminant growth and development: Novel and updated findings.
J. C. Matthews*, University of Kentucky, Lexington.

4:05 PM 313  Out of the black box and back to the future: New frontiers and challenges for rumen microbiology to advance animal growth and development.
M. Morrison*1,2, 1CSIRO, St. Lucia, Queensland, Australia, 2The Ohio State University, Columbus.

4:30 PM 314  The human intestinal microbiome—Applications to animal agriculture.
D. N. Frank*, University of Colorado, Boulder.

4:55 PM  Concluding remarks

Lactation Biology Symposium
Novel Mechanisms Regulating Milk Secretion and Mammary Involution
Chairs: Wendie Cohick, Rutgers University; Darryl Hadsell, Baylor College of Medicine

2:00 PM
Introduction.
Wendie Cohick, Rutgers University, New Brunswick, NJ.

2:05 PM 315  High fat diet suppresses de novo fatty acid synthesis in mammary epithelial cells independent of SREBP regulated gene expression.
S. M. Anderson*, M. C. Rudolph, E. A. Wellberg, and M. C. Neville, University of Colorado School of Medicine, Aurora.

2:45 PM 316  Serotonin: A homeostatic regulator of bovine lactation.
N. Horserman*, University of Cincinnati, Cincinnati, OH.

3:25 PM 317  Stanniocalcin-1 and local control of mammary involution.
P. Lacasse*, AAFC-Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

4:05 PM 318  The role of Ca²⁺-ATPases in milk secretion and involution.
T. A. Reinhardt*, National Animal Disease Center, ARS/USDA, Ames, IA.

Meat Science and Muscle Biology
Fresh Meat Quality and Muscle Biology
Chair: Kasey Carlin, North Dakota State University

2:00 PM 319  Effect of vitamins E and C on collagen turnover by bovine intramuscular fibroblasts.
A. C. Archile*1,2, I. B. Mandell, S. P. Miller, M. C. Cha, and P. P. Purslow1, 1University of Guelph, Ontario, Canada, 2University of Zulia, Maracaibo, Venezuela.

2:15 PM 320  Fatty acid composition of Jersey beef was affected by finishing diet and tissue type.

2:30 PM 321  Effects of frame size and animal age on beef carcass quality and tenderness.
S. K. Duckett*, J. P. S. Neel1, R. M. Lewis1, W. Swecker3, M. L. Wahlberg1, J. P. Fontenot3, and W. Clapham2, 1Clemson University, Clemson, SC, 2USDA-ARS, Beaver, WV, 3Virginia Tech University, Blacksburg.
Effect of skeletal separation and moisture enhancement on eating quality of cull cow beef.
P. Streiter*, C. Campbell, and I. Mandell, University of Guelph, Guelph, Ontario, Canada.
3:00 PM 323

Accuracy of real-time ultrasound for body composition traits for evaluating carcass traits in medium wool crossbred lambs.
1, Texas A&M University-Commerce, Commerce, 2Texas A&M University, College Station, 3Iowa State University, Ames.
3:15 PM 324

Farming systems changes fatty acids profile and lipid oxidation in meat of Sarda-breed suckling lambs.
A. Nudda*, G. Battacone, M. G. Manca, R. Boe, A. Fenu, G. Spanu, and G. Pulina, Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Italy.
3:30 PM 325

Comparisons of different muscles metabolic enzymes and muscle fiber types in Jinhua and Landrace pigs.
3:45 PM 326

Effects of cage versus floor litter environments on blood parameters and meat quality in broilers.
J. Yuan*, C. H. Huang, B. Wang, S. H. Zhou, and Y. Guo, State Key Laboratory of Animal Nutrition, China Agricultural University, Beijing, China.
4:00 PM 327

Effect of dietary selenium yeast (Sel-Plex) and vitamin E supplementation to broilers on meat quality characteristics of raw and marinated breast fillets.
1, Alltech-University of Kentucky Nutrition Research Alliance, Lexington, 2Department of Animal and Food Sciences, University of Kentucky, Lexington.
4:15 PM 328

Effect of three different postmortem electrical stimulation methods on quality of early-deboned broiler breast meat.
H. Zhuang*, E. M. Savage, and K. C. Lawrence, USDA-ARS, Athens, GA.
4:30 PM 329

Optimization of the time of marination for early deboned broiler breast fillets.
4:45 PM 330

Consumer acceptance of visual appearance of broiler breast meat with varying degrees of white striping.
V. A. Kuttappan*, J. F. Meullenet, and C. M. Owens, University of Arkansas, Fayetteville.

Nonruminant Nutrition
Enzymes 1
Chair: Brooke Humphrey, Cal Poly
Sponsor: Novus International Inc.
301/302

Efficacy of a thermally processed exogenous enzyme cocktail on broiler performance.
K. R. Beaman*, K. G. S. Lilly, L. K. Shires, S. A. Loop, and J. S. Moritz, West Virginia University, Morgantown.
2:00 PM 331

Growth performance and nutrient utilization of broiler chickens fed diets supplemented with phytase alone or in combination with citric acid and multi-carbohydrase enzyme.
T. A. Woyengo*, B. A. Slominski, and R. O. Jones.
1Department of Animal Science, University of Manitoba, Winnipeg, Canada, 2Canadian Bio-Systems Inc., Calgary, Canada.
2:15 PM 332

Intestinal histology and amino acid digestibility of broilers fed increasing dietary phytic acid during a live coccidiosis vaccination.
1Virginia Tech, Blacksburg, 2AB Vista, Wiltshire, Marlborough, UK.
2:30 PM 333

Effects of NSP-enzymes on in vitro digestibility and intestinal microbiota activity in broilers fed two different wheat cultivars.
B. Bouza, C. Clavaud, P. A. Geraert, and E. Devillard*.
Adisseo SAS, 03600 Commeny, France.
2:45 PM 334

Assessment of phytase in broilers undergoing a coccidiosis challenge.
Auburn University, Auburn, AL.
3:00 PM 335

Dietary supplementation of Peniophora lycii phytase improves mineral bioavailability in broiler chickens.
1Department of Animal Nutrition, College of Veterinary and Animal Sciences, Kerala Agricultural University, Mannuthy, Kerala, India, 2Centre for Advanced Studies in Poultry Science, College of Veterinary and Animal Sciences, Kerala Agricultural University, Mannuthy, Kerala, India.
3:15 PM 336
Mineral excretion and bone mineral content as affected by phytase and feed additives in broilers.

Use of the precision-fed rooster assay and a chick AME trial to determine the best method for enzyme efficacy.
J. Brandon* and A. B. Batal, The University of Georgia, Athens.

The effects of the addition of phytase and an enzyme cocktail to high and low nutrient density diets with DDGS or MBM in laying hens during phase II.
D. Hahn*, 1 S. Scheideler1, E. E. M. Pierson1, and C. L. Novak1, 1University of Nebraska-Lincoln, Lincoln, 2Danisco Animal Nutrition, St. Louis, MO, 3Land O’Lakes Purina Feed, LLC, Kansas City, MO.

Justifying phytochemical feed additive matrix values in conjunction with exogenous feed enzymes.
L. K. Shires*, S. A. Loop, C. K. Gehring, K. R. Beaman, and J. S. Moritz, West Virginia University, Morgantown.

The effect of phytase and energy enzyme inclusion on growth and bone ash in low phosphorus diets.
J. R. Coppedge*, 1 J. Klein1, K. Jessen1, A. Jordan1, B. Brown1, F. Ruch1, and J. T. Lee1, 1Texas A&M University, College Station, 2Enzyvia LLC, Sheridan, IN.

Nonruminant Nutrition
Health 1
Chair: Paul Ebner, Purdue University
Korbel Ballroom 3c

Transforming coccidiosis mediated lesion score effects into estimates of performance and caloric costs in the form of ADG, FCR, malabsorption and effective caloric value throughout the broiler growth curve to 48 days of age.
R. G. Teeter*, 1 A. Beker1, C. Brown1, C. Broussard2, F. Fitz-Coy2, J. Radu2, and L. Newman2, 1Animal Nutrition and Health, 2Enzyvia LLC, Sheridan, IN.

Mintrex-Zn improves tibia Zn deposition and antioxidant status of broilers under stress with coccidiosis challenge.
S. D. Bun* and Y. M. Guo, China Agricultural University, Beijing, China.

Effects of type and level of dietary fiber on digestive traits and nutrients digestibility in broilers.
E. Jiménez-Moreno*, 1 J. M. González-Alvarado1, S. Chamorro1, C. Romero1, R. Lázaro1, and G. G. Mateos1, 1Universidad Politécnica de Madrid, Madrid, Spain, 2University of Tlaxcala, México, 3Consejo Superior de Investigaciones Científicas, Madrid, Spain.

The effects of 1. 2 ppm T-2 toxin on performance, lesions, and general health of male broilers and the efficacy of an organoaluminosilicate (mycotoxin binder).

Strategies to reduce preharvest Salmonella in organic broilers.

Cecal microbial populations of young chicks fed several prebiotic-type compounds as determined by DGGE and quantitative PCR.
C. M. Jacobs*, P. L. Utterback, and C. M. Parsons, University of Illinois, Urbana.

Turkey response to the inclusion of a Saccharomyces cerevisiae fermentation product, Original XPC, in antibiotic free diets following a coccidiosis vaccination.
D. M. Paiva*, 1 C. L. Wall1, R. Lehman2, J. R. Sottosanti1, C. F. Honaker1, D. T. Moore2, and A. P. McElroy1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Diamond V Mills, Inc., Cedar Rapids, IA.

Effect of diet on equine gut microbiota.
K. Daly*, C. J. Proudman1, H. J. Flint2, and S. P. Shirazi-Beechey3, 1University of Liverpool, Liverpool, UK, 2Rowett Institute of Nutrition and Health, Aberdeen, UK.

Spatial alternative splicing of mucin 2 (Muc2) mRNA in chicken intestine.
Z. Jiang*, C. Troche, A. C. Lossie, and T. J. Applegate, Purdue University, West Lafayette, IN.
Differences in carbohydrate composition of barley varieties influence Salmonella transmission among pen mate weaned piglets.
J. Bindelle1, R. Pieper2, J. K. Marshall3, G. Malik*, B. R. Rossnagel4, P. Leterme4, and A. G. Van Kessel4, 1University of Liege, Gembloux Agro-Bio Tech, Liege, Wallonia, Belgium, 2Freie Universitat, Berlin, Germany, 3University of Saskatchewan, Saskatoon, SK, Canada, 4Prairie Swine Centre Inc., Saskatoon, SK, Canada.

Histomorphology and small intestinal sodium-dependent glucose transporter 1 gene expression in piglets fed phytic acid and phytase-supplemented diets.
T. A. Woyengo*, J. C. Rodriguez-Lecompte1, O. Adeola2, and C. M. Nyachoti3, 1University of Manitoba, Winnipeg, Manitoba, Canada, 2Purdue University, West Lafayette, IN.

Effects of essential oils on Clostridium perfringens infections in broilers.
T. Steiner*, F. van Immerseel2, and R. Ducatelle2, 1Biomin Holding GmbH, Herzogenburg, Austria, 2Department of Pathology, Bacteriology and Avian Diseases, Ghent University, Merelbeke, Belgium.

Nonruminant Nutrition Symposium
Rethinking Equine Nutrition
Chair: Scott Radcliffe, Purdue University
Sponsors: Alltech, EAAP
Korbel Ballroom 1cd

Defining amino acid requirements in horses: Application of the indicator amino acid oxidation technique.
K. L. Urschel*, R. J. Geor3, and P. A. Harris3, 1University of Kentucky, Lexington, 2Michigan State University, East Lansing, 3Waltham Centre for Pet Nutrition, Melton Mowbray, United Kingdom.

Current knowledge on the relative role of the equine small and large intestine in amino acid absorption.
N. L. Trotter* and A. D. Woodward, Michigan State University, East Lansing.

Importance of volatile fatty acid metabolism for horses.
J. K. Suagee*, B. A. Corl, and R. J. Geor, Virginia Polytechnic Institute and State University, Blacksburg.

Glucose sensing and regulation of equine intestinal glucose transport.
S. Shirazi-Beechey*, D. Arora, J. Dyer, and K. Daly, University of Liverpool, Liverpool, UK.

Physiology and Endocrinology
Poultry Physiology
Chair: Shelly Druyan, Agricultural Research Organization, Volcani Center, Israel

Blue-and-gold macaw (Ara ararauna) postmortem semen collection.
J. M. Silva1, S. K. Cunha1, C. D. Corcini1, A. S. Varela Junior1, A. P. N. Albano1, A. L. S. Valente1, and D. C. Bongalhardo**, 1Universidade Federal de Pelotas, Pelotas, RS, Brazil, 2Universidade Federal de Rio Grande, Rio Grande, RS, Brazil.

To move or not to move? Gait analysis of the modern broiler and its implications.
H. Paxton*, M. A. Daley, S. A. Corr, and J. R. Hutchinson, Royal Veterinary College, Hatfield, Hertfordshire, UK.

Effects of commercial in ovo injection of carbohydrates on broiler embryogenesis.

The effect of egg weight loss on embryonic development in Chinese painted quail (Coturnix chinensis) exhibiting parthenogenesis.
J. B. Wells, H. M. Parker*, A. S. Kiess, and C. D. McDaniel, Mississippi State University, Mississippi State.
3:00 PM 362 Relationships of Ross × 708 broiler post-hatch development to embryonic temperature, incubation length, and eggshell water vapor conductance.
R. Pulikanti, E. D. Peebles*, W. Zhai, A. Bello, C. N. Obi, and A. O. Sokale, Mississippi State University, Mississippi State.

3:15 PM 363 NADH Oxidase generated superoxide reduces nitric oxide availability in lungs of hypoxic broilers chickens.
J. Bautista-Ortega*, E. A. Ellis, and C. A. Ruiz-Feria, Texas A&M University, College Station.

3:30 PM 364 Genistein effects on fatty liver syndrome induced by estrogen.
L. M. Stevenson*, S. S. Oates, J. B. Hess, and W. D. Berry, Auburn University, Auburn, AL.

3:45 PM 365 Gene expression of thyroid hormone regulating elements in reproductively photosensitive and photorefractory turkey hens.
S. W. Kang*, S. Kosonsiriluk, and M. E. El Halawani, University of Minnesota, St. Paul.

4:00 PM 366 Identification of a nonclassical glucocorticoid responsive region of the growth hormone gene during chick embryonic development.
K. A. Heuck-Knubel* and T. E. Porter, Department of Animal & Avian Sciences University of Maryland, College Park.

4:15 PM 367 Detection and expression of the glucocorticoid receptor in the laying hen’s oviduct.
L. A. Bola*, D. V. Arbona, and J. B. Hoffman, North Carolina State University, Raleigh.

4:30 PM 368 Detection and expression of glucocorticoid receptors in the germinal disc (GD) and non-germinal disc (NGD) regions of the laying hen’s hierarchical ovarian follicles.

4:45 PM 369 Molecular cloning and characterization of chicken and zebrafish prostaglandin receptors.
A. H. Y. Kwok*, Y. Wang, and F. C. Leung, The University of Hong Kong.

5:00 PM 370 Effect of seminal plasma progesterone on sperm hole penetration in White Leghorns.
E. M. Anderson* and K. J. Navara, University of Georgia, Athens.

Processing and Products
Chair: Aaron S. Kiess, Mississippi State University

2:00 PM 371 Salmonella recovery following air chilling for matched neck-skin and whole carcass sampling methodologies.
R. J. Buhr*, N. A. Cox, J. A. Cason, L. L. Rigsby, and D. V. Bourassa, USDA-ARS Russell Research Center, Athens, GA.

2:15 PM 372 Effect of ultrasonication and phosphate level during marination on numbers of Salmonella and Escherichia coli on broiler breast meat.
D. P. Smith*, Poultry Science Dept., North Carolina State University, Raleigh.

2:30 PM 373 The enrichment of breast and thigh meat in broilers for DHA using supplemental DHA.

2:45 PM 374 Effect of feeding hatchery waste meal processed by different techniques on egg quality and productive performance of laying hens.
A. Mahmud*, S. Saima, M. A. Jabbar1, A. W. Sahoota1, Z. Ali2, and M. Z. U. Khan1, 1University of Veterinary & Animal Sciences, Lahore, Pakistan, 2Big Feeds (Pvt) Ltd., Lahore, Pakistan.

3:00 PM 375 Effect of feeding flaxseed and two types of antioxidants on quality parameters of omega-3 enriched eggs during storage.
Z. Hayat*1,2, G. Cherian1, T. N. Pasha2, F. M. Khattak2, and M. A. Jabbar2, 1University College of Agriculture, University of Sargodha, Sargodha-40100, Pakistan, 2University of Veterinary and Animal Sciences, Lahore-54000, Pakistan, 3Department of Animal Sciences, Oregon State University, Corvallis.

3:15 PM 376 Quality of shell eggs stored under modified atmosphere packaging.
T. Yalamanchili*, C. Z. Alvarado, L. D. Thompson, and C. J. Brooks, Texas Tech University, Lubbock.

3:30 PM 377 Evaluation of fatty acids and proteins in eggs from cage and range laying hens.
L. K. Kerth*, P. A. Curtis1, K. R. William2, C. R. Kerth1, and K. E. Anderson3, 1Auburn University, Auburn, AL, 2Tuskegee University, Tuskegee, AL, 3North Carolina State University, Raleigh.
Ruminant Nutrition
Beef: Additives
Chair: John Wagner, Colorado State University
Korbel Ballroom 2b

2:00 PM 378  Intermittent feeding strategies of ractopamine hydrochloride on growth performance and carcass characteristics of feedlot steers.
M. G. Dib*, G. E. Erickson1, T. J. Klopfenstein1, J. R. Benton1, W. A. Griffin1, J. J. Sindt1, and W. T. Choat2, 1University of Nebraska, Lincoln, 2Elanco Animal Health, Greenfield, IN.

2:15 PM 379  Effectiveness of ractopamine when fed as a top dress in beef steers.

2:30 PM 380  Effects of prepartum rumen-protected choline supplementation on performance of beef cows and calves.
L. A. Pacheco*, J. R. Jaeger1, L. R. Hibbard1, M. J. Macek1, N. A. Sproul1, G. J. Eckerle1, E. A. Bailey1, J. W. Bolte1, and K. C. Olson1, 1University of Nebraska, Lincoln, 2Elanco Animal Health, Greenfield, IN.

2:45 PM 381  Evaluation of ractopamine fed in a top dress feed on growth and standard carcass characteristics of crossbred cattle.
A. L. Schroeder*, T. H. TerHune2, M. Edmonds1, R. P. Lemenager1, S. L. Lake1, F. K. McKeith3, and J. J. Wagner6, 1Elanco Animal Health, Greenfield, IN, 2HMS Veterinary Development, Tulare, CA, 3Johnson Research, Parma, ID, 4Purdue University, West Lafayette, 5University of Illinois, Urbana, 6SECRC-Colorado State University, Lamar.

3:00 PM 382  Ractopamine hydrochloride did not affect growth or fermentation of ruminal bacteria in pure culture.
C. E. Walker*, J. M. Heidenreich, and J. S. Drouillard, Kansas State University, Manhattan.

3:15 PM 383  Accelerated step-up regimen with 44 mg/kg Monensin.
C. E. Walker*, G. L. Parsons, K. A. Miller, L. K. Thompson, J. J. Higgins, and J. S. Drouillard, Kansas State University, Manhattan.

3:30 PM 384  Effects of Zilmax on blood metabolites in finishing cattle.
C. L. Van Bibber*, G. L. Parsons, K. A. Miller, L. K. Thompson, and J. S. Drouillard, Kansas State University, Manhattan.

3:45 PM 385  Intake and digestion of cotton co-product and distillers grain blocks fed as a cattle hay replacement.
G. M. Hill and D. J. Renney, University of Georgia, Tifton.

4:00 PM 386  Late gestation supplementation of beef cows: Effects on cow and calf performance.
D. W. Bohnert*, R. Mills1, L. A. Stalker1, A. Nyman1, and S. J. Falck1, 1Oregon State University, Burns, 2ARS-USDA, Burns, OR, 3University of Nebraska, North Platte.

4:15 PM 387  Effect of forage energy intake and supplementation on gene expression of adipose tissue in growing beef cattle.
P. A. Lancaster*, E. D. Sharman, G. W. Horn, C. R. Krehbiel, and U. DeSilva, Oklahoma Agricultural Experiment Station, Stillwater.

4:30 PM 388  Angus and Simmental calves exhibit differential trace mineral metabolism.
S. L. Hansen*, E. L. Richter, and M. E. Drewnowski, Iowa State University, Ames.

4:45 PM 389  Effects of polyunsaturated fatty acid (PUFA) supplementation on performance and acute-phase response of transported beef steers.
R. F. Cooke*, A. B. Scarpa1, F. M. Nery1, F. N. T. Cooke1, P. Moriel2, B. W. Hess2, R. R. Mills3, and D. W. Bohnert1, 1Oregon State University, Burns, 2University of Wyoming, Laramie, 3Oregon State University, Pendleton.
Ruminant Nutrition
Dairy: Calves
Chair: Allen Young, Utah State University
Sponsor: West Central
Korbel Ballroom 3b

2:00 PM 390  Effect of feeding polyphenols from pomegranate extract on health, growth, nutrient digestion, and immunocompetence of calves.
M. C. Perdomo*1, R. A. Oliveira1, C. D. Narciso1, R. S. Bisinotto1, M. A. Ballou2, M. Drehner3, and J. E. P. Santos4,
1University of Florida, Gainesville, 2Texas Tech University, Lubbock, 3POM Wondersull, Los Angeles, CA.

2:15 PM 391  Effect of high-protein milk replacer followed by high-protein starter on transcript profiles in ruminal tissue of Holstein bull calves.

2:30 PM 392  Field evaluation of the effects of free-access feeding of acidified milk replacer on the growth performance of dairy replacement heifers and veal calves.
C. G. Todd*1, K. E. Leslie1, S. T. Milliman2, T. J. DeVries3, N. G. Anderson4, and J. M. Sargeant1,
1Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 2Vetpet Diagnostic and Production Animal Sciences, Iowa State University, Ames, 3Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada, 4Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, Ontario, Canada.

2:45 PM 393  Comparison of raw colostrum, colostrum replacer, and pasteurized colostrum on IgG, growth, and health of dairy calves.
C. L. Wilson* and L. E. Davis Rincker, Eastern Kentucky University, Richmond.

3:00 PM 394  Effect of the ingredients on acid binding capacity and pH of calves starter ration.
Y. Tu*, Q. Y. Diao1, S. S. Feng1, Y. Zhou1, and Q. Yun1, Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China, 2Beijing University of Agriculture, Beijing, China.

Y. Tu*, Y. Zhou, Q. Yun, Y. Q. Fu, and Q. Y. Diao, Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China.

3:30 PM 396  Simulated straw bedding intake and effect of high and low cereal grain starters on rumen development of neonatal Holstein calves.
W. B. Fokkink*1, T. M. Hill1, H. G. Bateman II1, J. M. Aldrich1, R. L. Schlotterbeck1, and A. F. Kertz2,
1Nurture Calf Research, Proviimi North America, Lewisburg, OH, 2ANDHIL, LLC, St. Louis, MO.

3:45 PM 397  Growth and health of calves pre- and post-weaning fed milk replacers with differing levels of neomycin sulfate and oxytetracycline.
N. B. Litherland*1, B. Ziegler2, D. Schimek2, D. Carlson1, D. Ziegler1, M. L. Raeth-Knight1, G. G. Golombeski2, H. Chester-Jones4, and J. G. Linn1,
1University of Minnesota, St Paul, 2Hubbard Feeds Inc., Mankato, MN, 3Milk Products Inc., Chilton, WI, 4University of Minnesota Southern Research and Outreach Center, Waseca.

4:00 PM 398  Meta-analysis for designing an empirical model to predict growth of neonatal Holstein calves through eight weeks of age.
H. G. Bateman II*1, T. M. Hill1, J. M. Aldrich1, R. L. Schlotterbeck1, and J. L. Firkins2,
1Nurture Research Center, Proviimi North America, Lewisburg, OH, 2The Ohio State University, Columbus.

4:15 PM 399  Effect of different fiber sources on performance and feed intake of Holstein calves.
L. Castells*1, A. Bach1,2, and M. Terré1, Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain.

4:30 PM 400  Effect of housing and management on dairy calves less than two month of age.

4:45 PM 401  The effect of oral supplementation of selenium on passive transfer of immunoglobulins in dairy calves.
B. Nelson*1, S. M. Godden2, B. W. McBride1, T. F. Duffield1, and K. E. Leslie1,
1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Department of Veterinary Population Medicine, University of Minnesota, St. Paul.
Small Ruminant  
Sheep and Goat Production 1  
Chair: K. M. Andries, Kentucky State University  
403/404

2:00 PM  402  Effects of endophyte-infected fescue seed on physiological parameters of mature female meat goats.  
A. R. Boyer*, T. L. Mays¹, G. W. Webb¹, M. A. Brown¹, and E. L. Walker¹, ¹Missouri State University, Springfield, ²USDA Grazinglands Research Center, El Reno, OK.

2:15 PM  403  The effects of protein supplement on leptin concentrations in lambs and meat goat kids grazing bermudagrass pastures in central Oklahoma.  
E. L. Walker*, S. A. Nusz², D. H. Keisler³, and M. A. Brown⁴, ¹Missouri State University, Springfield, ²Redlands Community College, El Reno, OK, ³University of Missouri, Columbia, ⁴USDA Grazinglands Research Center, El Reno, OK.

2:30 PM  404  Factors affecting birth, 60-day, and weaning body weights of commercial meat goat kids born in two different seasons.  
K. Andries* and E. Sherrow, Kentucky State University, Frankfort.

2:45 PM  405  Relationship between body measurements and milk yield and a method to predict the milk production of Saanen goats.  
S. Dikmen*, A. Orman, H. Üstüner, and M. M. Ogan, University of Uludag, Bursa, Turkey.

3:00 PM  406  Effects of prepubertal growth rate of dairy ewe lambs on their subsequent lamb and milk production.  
D. L. Thomas* and Y. M. Berger, University of Wisconsin-Madison.

3:15 PM  407  Milk production and lamb growth of hair sheep weaned at 63 or 90 d of age in an accelerated lambing system in the tropics.  
R. W. Godfrey* and K. Facison, University of the Virgin Islands, St Croix.

3:30 PM  408  Economic impacts of ram mating behavior.  

OTHER EVENTS

Presentation by Dr. Roger Beachy, NIFA  
403/404  
5:00 – 6:00 PM
Tuesday, July 13

POSTER PRESENTATIONS
Animal Behavior and Well-Being
Swine and Poultry

T1  Recognition of maternal amniotic fluid by pre-weaning piglets.

T2  The effect of colostrum supplementation on piglets' body temperature recovery and lactation performance.

T3  Comparison of pig restraint and sampling methods on blood lactate concentration.

T4  The effect of alleyway width on gestating sow welfare in a free-access stall system.
L. A. Mack*, M. F. Elischer*, S. D. Eicher^, A. K. Johnson^, D. C. Lay Jr., B. T. Richert^, and E. A. Pajor^, 1Purdue University, West Lafayette, IN, 2LBRU, USDA-ARS, West Lafayette, IN, 3Iowa State University, Ames, 4University of Calgary, Calgary, AB, Canada.

T5  A comparison of two farrowing environments on piglet performance.
A. R. Hanson*, P. M. Walker, and J. P. Holt, Illinois State University, Normal.

T6  Behavior of Duroc pigs on sudangrass (Sorghum bicolor) pastures.
S. Pietrosemoli*^, J. C. Guevara^, A. Lobo^, J. Cardona^, W. Maradiaga^, and J. T. Green^, 1Animal Science Department, North Carolina State University, Raleigh, 2Alternative Swine Research and Extension Project, Raleigh, NC, 3Universidad Nacional de Agricultura, Catacamas, Olancho, Honduras, 4Crop Science Department, North Carolina State University, Raleigh.

T7  Effects of postnatal serotonin agonism on fear response and memory.
R. L. Dennis* and H. W. Cheng, Livestock Behavior Research Unit, USDA-ARS, West Lafayette, IN.

T8  Influence of increasing-dim and bright, and split-dark-bright lighting on broiler mobility and stress.
R. J. Lien*, J. B. Hess, and S. F. Bilgili, Auburn University, Auburn, AL.

T9  The use of lidocaine as an analgesic to study immediate pain associated with hot blade beak trimming in 1- and 10-day-old White Leghorn chicks.
M. Cho*, K. Schwean-Lardner*, A. Livingston^, and H. L. Classen^, 1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Department of Veterinary Biomedical Sciences, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

T10  Comparison of an enriched and barren environment on welfare related fear behaviors of commercial laying hens.
C. J. Davis*, H. Taira, M. M. Beck, and P. A. Skewes, Clemson University, Clemson, SC.

T11  The behavior of Japanese quail fed diets supplemented with passionflower.

T12  Strain differences among six varieties of fowl in two fear tests.
G. S. Archer* and J. A. Mench, University of California, Davis.

T13  Behavior expression of testosterone treated cockerels in response to social grouping.
S. S. Askari Rankouhi*, M. A. Karimi Torshizi, R. Vaez Torshizi, A. Niknam, and A. Maghsoudi, Tarbiat Modares University, Tehran, Iran.
Animal Health

Viruses, Infections, and Immunity

T14 Results from the Washington State bovine viral diarrhea virus voluntary control project.
J. R. Wenz*, D. A. Moore, H. L. Neibergs, and J. S. Neibergs, Washington State University, Pullman.

T15 Effects of source and level of energy on the immune competence and response to an infectious bovine rhinotracheitis virus (IBRV) challenge in cattle.
L. R. Schwertner*1, L. E. Hulbert1,2, J. A. Carroll1,2, M. L. Galvean1, and M. A. Ballou1, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Livestock Issues Research Unit, USDA–ARS, Lubbock, TX.

T16 The effects of dam parity and antibiotics on immune parameters and gastrointestinal bacterial diversity in weanling pigs.

T17 Serum IgG concentrations and performance, incidence of diseases, and risk of death in preweaned Holstein calves.
M. C. Perdomo* and J. E. P. Santos, University of Pannonia Georgikon Faculty, Keszthely, Hungary.

T18 Discovery of differentially expressed microRNAs in Porcine reproductive and respiratory syndrome (PRRS) virus infected alveolar macrophages.
J. A. Hicks, N. Trakooljul, and H. C. Liu*, North Carolina State University, Raleigh.

T20 Development of mouse monoclonal antibodies specific for chicken interleukin-18 (IL-18).
Y. H. Hong*, H. S. Lillehoj2, S. H. Lee1, M. -S. Park2, J. LaBresh3, D. Tompkins4, and C. Baldwin4, 1Department of Veterinary and Animal Sciences, Paige Laboratory, University of Massachusetts Amherst.

T21 Influence of two different doses of infectious bovine rhinotracheitis virus (IBRV) on immune and physiological parameters in steers.
S. M. Falkenberg*, T. B Schmidt1, T. Elsasser4, J. L. Sartin1, J. O. Buntyn1, and J. A. Carroll1, 1Mississippi State University, Mississippi State, 2Livestock Issues Research Unit, USDA–ARS, Lubbock, TX, 3Auburn University College of Veterinary Medicine, Auburn, AL, 4Bovine Functional Genomics, USDA–ARS, Beltsville, MD.

T22 The effect of thymol on reactive oxygen species production by bovine neutrophils.
L. M. Nemec*, C. Wu, S. Cordova, K. Davison, and T. F. Gressley, University of Delaware, Newark.

T23 Bovine hepatic and adipose retinol binding protein gene expression.

Beef Species

T24 Yeast supplementation alters the health status of receiving cattle.
J. A. Carroll*1, C. T. Collier1, L. E. Hulbert1,2, J. R. Corley2, A. G. Estefan1, D. N. Finck1, and B. J. Johnson1, 1USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 2Lesaffre Feed Additives, Milwaukee, WI, 3Texas Tech University, Dept. of Animal and Food Sciences, Lubbock.

T25 Impact of mature cow weights on farm profitability and economic weights of beef cattle traits.
F. Szabó*, K. Keller1, J. Wolf2, and M. Wolfová3, 1University of Pannonia Georgikon Faculty, Keszthely, Hungary, 2Institute of Animal Science, Uhrinéves, Prague, Czech Republic.

T26 Carcass characteristics and chemical composition of Longissimus muscle of different genetic groups finished at tropical condition.

T27 Efficacy of day 23 GnRH for CIDR-Select estrus synchronization for beef heifers bred 12 hours after estrus or by fixed-time AI.
T28 Fatty acid profile of feedlot Brangus bullocks fed with monensin or polyclonal antibodies.
R. S. Barducci*1,2, L. M. N. Sarti1, M. D. B. Arrigoni1, R. D. L. Pacheco1, D. D. Millen1, C. L. Martins1, S. R. Baldin1, F. S. Parra2, J. R. Ronchesel1, T. M. Mariani1, J. P. S. T. Bastos1, T. C. Putarv2, D. Tomazella2, and H. D. Rosa1, 1FMVZ/UNESP, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil.

T29 Shelf-life characteristics of longissimus muscle of feedlot bullocks supplemented with vitamin D and E.
R. D. L. Pacheco*2,3, S. R. Baldin1,2, F. S. Parra2, J. R. Ronchesel1, N. R. B. Conso1, M. D. B. Arrigoni1, D. D. Millen1, C. L. Martins1, R. S. Barducci1, L. M. N. Sarti1, D. Tomazella1, A. L. Campanini1, J. M. P. Silva3, A. S. C. Pereira1, D. P. D. Lanna1, 1FMVZ/UNESP, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil, 3USP, Pirassununga, São Paulo, Brazil, 4ESALQ, Piracicaba, São Paulo, Brazil.

T30 Effect of vitamin D and E supplementation on attributes of meat tenderness of feedlot bullocks.
S. R. Baldin*1,2, F. S. Parra2, J. R. Ronchesel1, N. R. B. Conso1, M. D. B. Arrigoni1, D. D. Millen1, C. L. Martins1, R. S. Barducci1, L. M. N. Sarti1, D. Tomazella1, A. L. Campanini1, F. A. S. Miquelin1, A. S. C. Pereira1, D. P. D. Lanna1, 1FMVZ/UNESP, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil, 3USP, Pirassununga, São Paulo, Brazil, 4ESALQ, Piracicaba, São Paulo, Brazil.

T31 Influence of weaning strategy on growth and immunity in beef calves.
L. B. Krebs*, A. Loyd, and E. G. Brown, Stephen F. Austin State University, Nacogdoches, TX.

T32 Effects of origin, breed, sex and season on productive performance of cattle arriving to feedlots located in Northern Mexico (Mexicali, B. C.).
L. C. Muñoz-Salas1, C. F. Arechiga*4, J. I. Aguilera-Soto1, M. A. Lopez-Carlos1, S. Mendez de Lara1, F. Mendez-Llorente1, M. Rincon1, F. J. Gutierrez2, C. A. Medina-Flores1, L. Avendaño-Reyes1, and A. Correa-Calderon1, 1Universidad Autonoma de Zacatecas, Zacatecas, Mexico, 2Universidad Autonoma de Baja California, Mexicali, BC, Mexico.

T33 Number of days to accurately measure individual feed intake in lactating females.
K. A. Gray*, B. L. Winslow, M. H. Poore, and J. P. Cassady, North Carolina State University, Raleigh.

T34 Effect of cutting time and maceration on nitrogen utilization of trefoil-grass hay by growing steers.
A. F. Brito*, C. Lafrenière2, and R. Berthiaume2, 1University of New Hampshire, Durham, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

T35 Temperature during summer transport of Canadian feeder cattle with an emphasis on low and high loading densities.
C. Goldhawk*1,2, E. Janzen1, L. Gonzalez2, T. Crowe3, J. Kastelic2, E. Pajor4, and K. Schwartzkopf-Genswein1, 1University of Calgary, Calgary, Alberta, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 3University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 4University of Manitoba, Winnipeg, Manitoba, Canada.

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Breeding and Genetics
Poultry and Small Ruminants

T36 Comparative genomics: The guinea fowl satiety center.

T37 Divergent selection for 4-week body weight in Japanese quail: Relationship between blood parameters and carcass characteristics.
H. Beiki*, A. Pakdel, and M. Moradi Shahr Babak, University of Tehran, Iran.

T38 Genetic variation in physiological responses following heat stress in laying hens.
J. N. Felver-Gant*,1, L. A. Mack1, R. L. Dennis2, and H. W. Cheng2, 1Purdue University, West Lafayette, IN, 2Livestock Behavior Research Unit, USDA-ARS, West Lafayette, IN.

T39 Genome-wide copy number variation and temporal gene expression analysis in Marek’s disease-resistant and -susceptible inbred chickens.
Y. Yu1, A. Mitra1, H. Zhang2, F. Tian1, G. Liu2, and J. Song1, 1University of Maryland, College Park, 2USDA-ARS-ADOL, East Lansing, MI, USDA-ARS, Beltsville, MD.

T40 Broiler breeders with an efficient innate immune response are more resistant to coccidial infections.
C. L. Swaggerty*1, K. J. Genovese2, H. He1, J. R. Nerren1, I. Y. Pevzner2, and M. H. Kogut1, 1United States Department of Agriculture, College Station, TX, 2Cobb-Vantress, Inc., Silao, Mexico.

T41 Expression of the peptide transporter, PepT1, in chickens from high and low weight-selected lines and their F1 and F2 crosses.
B. Zwarycz*, E. A. Wong, P. B. Seigel, and C. R. Mott, Virginia Polytechnic Institute & State University, Blacksburg.
T42 Genetic properties of feed utilization efficiency parameters.
S. E. Aggrey*, A. B. Karnuah, and N. B. Anthony, University of Georgia, Athens, University of Arkansas, Fayetteville.

T43 Analysis of ascites susceptibility using genetic markers in commercial broilers.

T44 Using quantitative PCR to investigate three candidate genes related to pulmonary hypertension in the chicken.

T45 Selection of the best model for estimation of genetic parameters for growth traits in Iranian Moghani sheep.
N. Ghavi Hossein-Zadeh* and M. Ardalan, Department of Animal Science, Faculty of Agriculture, University of Guilan, Rasht, Iran, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran.

T46 Estimates of genetic trends for body weight traits of Moghani sheep obtained by a multivariate animal model analysis.
N. Ghavi Hossein-Zadeh*, Department of Animal Science, Faculty of Agriculture, University of Guilan, Rasht, Iran.

T47 Association of polymorphisms in the FecB gene with litter size in Wadi sheep.
Y. Ren*1,2, Z. Shen1,2, M. Li3, N. Xiao1, W. Dong3, and S. Fu1, Binzhou Animal Science & Veterinary Medicine Institute, Binzhou Shandong, China, Research and Development Center of Wadi Sheep Breeding Technology, Binzhou Shandong, China, Shandong Lvd Biotechnology Co., Ltd., Binzhou Shandong, China.

T48 Inbreeding effects on different weights and population structure of Santa Inês sheep.
M. L. Santana Júnior*, V. B. Pedrosa, P. S. Oliveira, J. P. Eler, and J. B. S. Ferraz, Animal Breeding and Biotechnology Group, Department of Basic Sciences, College of Animal Science and Food Engineering, University of São Paulo, C. Postal 23, 13635-970, Pirassununga, SP, Brazil.

T49 Estimates of variances due to direct and maternal effects on birth weight in Moghani sheep.
M. Bayeri Yar*1, S. Alijani1, T. Farahvash2, and A. rafat1, University of Tabriz, Tabriz, East Azerbaijan, Iran, Islamik Azad University, Shabestar Branch, Tabriz, East Azerbaijan, Iran.

T50 Estimation of additive and nonadditive genetic parameters for growth traits of Moghani sheep.
M. Bayeri Yar*, S. Alijani, and T. Farahvash, University of Tabriz, Tabriz, East Azerbaijan, Iran, Islamik Azade University, Shabestar Branch, Tabriz, East Azerbaijan, Iran.

T51 Estimation of variance components for reproductive traits of Moghani sheep.
M. Bayeri Yar*1, S. Alijani, and T. Farahvash, University of Tabriz, Tabriz, East Azerbaijan, Iran, Islamik Azade University, Shabestar Branch, Tabriz, East Azerbaijan, Iran.

T52 Determination of intrinsic tolerance for high dietary nitrate in ewes using hepatic gene expression.

T53 Genetic parameters for growth traits in the progeny of Nubian, French Alpine Saanen, Toggenburgh, and Spanish goats mated naturally to Boer sires.
A. Pérez*, J. S. Saucedo, L. Avendaño, J. F. Ponce, and M. F. Montaño, Universidad Autónoma de Baja California, México, Instituto de Ciencias Agrícolas, Mexicali, Baja California, México.

Companion Animals

Companion Animal Biology

T54 Student organization sponsored dog training classes provide experiential learning opportunity for students and community participants.
L. K. Karr-Lilienthal* and J. S. Morstad, University of Nebraska - Lincoln, Union College, Lincoln, NE, Prairie Skies Inc., Lincoln, NE.

T55 Tail deflection as a measure of emotional state in canines.
C. L. Terrill*, T. H. Friend, and J. E. Sawyer, Texas A&M University, College Station.

T56 Galactoglucomannan oligosaccharide (GGMO) supplementation affects nutrient digestibility, fermentation end-product production, and large bowel microbiota of the dog.
T. A. Faber*, A. C. Hopkins1, L. S. Middelbos1, N. P. Price3, and G. C. Fahey Jr., University of Illinois, Urbana, Temple-Inland, Diboll, TX, National Center for Agricultural Utilization Research, USDA, Peoria, IL.

T57 Evaluation of cellulose and beet pulp as dietary fibers for use in raw meat-based diets fed to captive exotic felids.
K. R. Kerr*, C. Morris2, S. Burke2, and K. S. Swanson3, Division of Nutritional Sciences, University of Illinois, Urbana, Henry Doorly Zoo, Omaha, NE, Department of Animal Sciences, University of Illinois, Urbana.
The influence of fish versus mammalian and avian protein sources on satiety hormone response in dogs.
B. M. Vester Boler*1, T. A. Faber1, L. L. Bauer1, K. S. Swanson1, S. Smiley2, P. J. Bechtel1,2, and G. C. Fahey Jr.1, 1University of Illinois, Urbana, 1University of Alaska, Fairbanks, 1USDA/ARS, Fairbanks, AK.

Dietary magnesium alters urinary histamine excretion in domestic felines.
S. K. Martin*1, C. E. Conway1, M. R. C. de Godoy1, D. L. Harmon1, E. S. Vanzant1, S. Zicker1, R. M. Yamka2, and K. R. McLeod1, 1University of Kentucky, Lexington, 1Hill’s Pet Nutrition, Inc., Topeka, KS.

Dietary effects of dietary cation anion balance on histamine metabolism and urine acidity in domestic felines.
S. K. Martin*1, C. E. Conway1, M. R. C. de Godoy1, D. L. Harmon1, E. S. Vanzant1, S. Zicker1, R. M. Yamka2, and K. R. McLeod1, 1University of Kentucky, Lexington, 1Hill’s Pet Nutrition, Inc., Topeka, KS.

Dietary effects of dietary cation anion balance on histamine metabolism and urine acidity in domestic felines.
S. K. Martin*1, C. E. Conway1, M. R. C. de Godoy1, D. L. Harmon1, E. S. Vanzant1, S. Zicker1, R. M. Yamka2, and K. R. McLeod1, 1University of Kentucky, Lexington, 1Hill’s Pet Nutrition, Inc., Topeka, KS.

The effects of graded arginine levels on nitrogen metabolism in the lean adult dog.
C. E. Conway*,1 M. R. C. de Godoy1, S. K. Martin1, K. R. McLeod2, N. Z. Frantz2, R. M. Yamka2, and D. L. Harmon1, 1University of Kentucky, Lexington, 1Hill’s Pet Nutrition, Inc., Topeka, KS.

The effects of carob (Ceratonia siliqua) on some reproductive parameters of male New Zealand White rabbits.
A. Ata, M. S. Gulay*, O. Yildiz-Gulay, and S. Gungor, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey.

The effects of carob (Ceratonia siliqua) on some hematological parameters and organs of male New Zealand White rabbits.
M. S. Gulay*,1 O. Yildiz-Gulay1, A. Ata1, A. Balic2, and A. Demirtas1, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey, 1Sakarya Toyota Hospital, Sakarya, Turkey.

The effects of feeding Pinus pinea seeds on some blood values in male New Zealand White rabbits.
O. Yildiz-Gulay*,1 M. S. Gulay*,1 A. Ata1, A. Balic2, and A. Demirtas1, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey, 1Sakarya Toyota Hospital, Sakarya, Turkey.

Spermatological parameters of male New Zealand White rabbits supplemented with Pinus pinea seeds.
A. Ata, M. S. Gulay*, O. Yildiz-Gulay, S. Avki, and S. Gungor, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey.

Dairy Foods
Cheese

An x-ray system to assess Ragusano PDO quality.
G. Impoco1, C. Pasta1, G. Portelli1, G. Marino1, M. Caccamo*1, S. Carpino1, and G. Licitra1,2, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 1D. A. C. P. A., University of Catania, Catania, Italy.

Effects of rapid visco analyzer on the functional properties of imitation mozzarella cheese.
S. He1,2, X. Li1,2, Y. Ma1, C. Yao1, and B. Wu1,2, 1Key Laboratory of Dairy Science, Northeast Agricultural University, Ministry of Education, Harbin, Heilongjiang, China, 2College of Food Science, Northeast Agricultural University, Harbin, Heilongjiang, China, 3School of Food Science and Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, china.

A sensor technology for monitoring and controlling syneresis in the cheese vat.
T. G. Ferreira*,1 M. Castillo1,2, F. A. Payne1, C. O’Donnell1, and D. O’Callaghan4, 1University of Kentucky, Lexington, 2Universitat Autònoma de Barcelona, Spain, 3University College Dublin, Ireland, 4Moorepark Food Research Center, Teagasc, Fermoy, Co, Cork, Ireland.

Method to quantify retention of lipid soluble substances in a cheese curd model system.
M. Tippett* and S. Martini, Utah State University, Logan.

Effect of storage at ambient temperature on calcium lactate crystallization in Cheddar cheese.
F. Su, P. Rajbandari, and P. Kindstedt*, University of Vermont, Burlington.

Effect of addition of calcium chloride and sodium chloride on aflatoxin M1 content during Egyptian Domiati cheese processing.
M. M. Motawee*,1 K. Genedy1, and T. A. Nassib2, 1National Organization For Drug Control and Research, Egypt, Giza, Cairo, Egypt, 2Faculty of Agriculture, Mansoura University, Mansoura, Egypt.

Effect of milk fat content on goat cheese proteolysis elaborated with the traditional method.

Impact of salt substitutes on the sensory characteristics of reduced sodium process cheese.
Comparison of identified flavor compounds, texture and sensory properties in regular cream cheese and cream cheese made from whole milk powder.

Identification of neutral volatile compounds, texture and sensory properties in cholesterol-removed cream cheese.
S. S. Jeon*, S. J. Lee, and H. S. Kwak, Sejong University, Seoul, South Korea.

Changes of Ragusano cheese aroma due to different levels of pasture intake.
S. Carpino*1, T. Rapisarda1, I. Schadt1, C. Pasta1, G. Belvedere1, and G. Licitra1,2, 1CoRiLaC, Regione Siciliana, Ragusa, Italy, 1DACPA, Catania University, Catania, Italy.

Enzyme accelerated ripening of Turkish Mihalic hard cheese: Proteolysis and lipolysis.
T. Ozcan* and E. Kural, Uludag University, Department of Food Engineering, Bursa, Turkey.

Seasonal variation in milk composition affects textural properties of low-moisture part-skim Mozzarella cheese.
V. Jai*, U. Lund, and N. Farkye, California Polytechnic State University, San Luis Obispo.

A study of bioactive peptides in US Cheddar cheeses of different ages.

Effect of curd milling on the characteristics of Queso Fresco during storage.
D. L. Van Hekken*1, M. H. Tunick1, N. Y. Farkye2, J. B. Luchanski1, S. Mukhopadhyay1, and P. M. Tomasula1, 1USDA, Agricultural Research Service, Wyndmoor, PA, 2California Polytechnic State University, San Luis Obispo.

Pigments from nonthermal browning formed in Gouda and Parmesan cheeses.
A. Lopez-Hernandez*1, L. E. Rodriguez-Saona2, M. M. Giusti1, M. E. Johnson1, D. A. Sommer3, and S. A. Rankin1, 1University of Wisconsin-Madison, Madison, 2The Ohio State University, Columbus, 3Wisconsin Center for Dairy Research, Madison.

Whey ricotta: A scientific reevaluation.
J. W. -M. Heick*, R. Jimenez-Flores, and H. Khalil, California Polytechnic State University, San Luis Obispo.

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Evaluation of the addition of urea to refrigerated raw milk on the crude protein, milk fat, lactose, and total solids contents determined by mid-infrared spectrometry.

Cheese whey compositional analysis using infrared spectroscopy.
F. A. Pinto1, L. A. Clementino1, D. L. S. Oliveira1, L. R. Abreu1, L. M. Fonseca*1,3, R. Rodrigues1,3, M. O. Leite1,3, and M. M. O. P. Cerqueira1,3, 1Federal University of Minas Gerais/Escola de Veterinária/DTIPOA, Belo Horizonte, MG, Brazil, 2Universidade Federal de Lavras/DCA, Lavras, MG, Brazil, 3Laboratory for Milk Quality Analysis, Belo Horizonte, MG, Brazil.

Comparison of Mojonnier and Gerber methods for analyzing the fat content of fermented milk beverages.

Quantitative analysis of the distribution of fat globules in milk.
G. Impoco1, N. Fucà2, and G. Licitra1,2, 1CoRiLaC, Regione Siciliana, Ragusa, Italy, 2DACPA, University of Catania, Catania, Italy.

Evaluation of Sprint Rapid Protein Analyzer for total protein analysis of Cheddar cheese.

Determination of true proteins in dairy products: A comparative study between Kjeldahl and Sprint-Protein Analyzer.
D. Zhao*, V. Jai, and N. Y. Farkye, California Polytechnic State University, San Luis Obispo.

Application of FTIR spectra for early detection of spore contamination in fluid milk.
J. C. Huber-Rockow* and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.
Dairy Foods
Foods and Products

T90 Oxidation stability of milk rich in α-linolenic acid produced through duodenum infusion of high-linolenic perilla fatty acid into dairy cows.

T91 Activity and viability of lactic acid bacteria in yogurts fortified with predigested nongerminated or germinated whole soy powder.
U. Nsofor*1,2 and Z. Ustunol1, 1Michigan State University, East Lansing, 2Food and Drug Administration, College Park, MD.

T92 Sensory attributes of yogurt fortified with predigested, nongerminated or germinated whole soy powder.
U. Nsofor*1,2 and Z. Ustunol1, 1Michigan State University, East Lansing, 2Food and Drug Administration, College Park, MD.

T93 Effect of lactose content on the post-acidiﬁcation of yogurt.
V. Sikand*, P. S. Tong, and S. Roy, California Polytechnic State University, San Luis Obispo.

T94 Effect of a satiety ingredient on the properties of resulting yogurts during storage.
D. Olson*1, K. Aryana1,2, D. Alexander3, and T. Emmick1, 1Louisiana State University Agricultural Center, Baton Rouge, 2Louisiana State University, Baton Rouge, 3Kemin Health, Des Moines, IA.

T95 Chemical and sensory characteristics of set-type yoghurts made from sheep, goat, and their mixed milks during refrigerated storage.
A. C. Gürsoy-Balcı1, Z. Güler1, and Y. W. Park*1, 1Mustafa Kemal University, Antakya, Hatay, Turkey, 2Fort Valley State University, Fort Valley, GA.

T96 Oxidative stability of yogurt from bovine and caprine milks enriched with different levels of n-3 fatty acids.
D. Elders*, A. Mora-Gutierrez, R. Attaie, and G. L. Goodie, Prairie View A&M University, Prairie View, TX.

T97 Evaluation of nonessential and heavy minerals in three species milks, Torba yoghurts and whey.
H. Sanal1, Z. Guler1, and Y. W. Park*1, 1Mustafa Kemal University, Antakya, Hatay, Turkey, 2Fort Valley State University, Fort Valley, Georgia.

T98 Impact of acidulant addition on yogurt fermentation times and physiochemical properties.
T. A. Boomgaard* and K. A. Schmidt, Kansas State University, Manhattan.

T99 Antioxidative peptides isolated from fermented whey proteins by lactobacilli and their effects on aged mice.
Y. Bao**, X. Liang1, L. Qin1, R. Li1, and M. Guo2, 1Northeast Forestry University, Harbin, China, 2University of Vermont, Burlington.

T100 Zinc-binding activity of yak casein hydrolysate and the structural characteristics of hydrolysate-Zn complex.
X. Y. Mao**, X. Wang1, J. Zhou1, and P. S. Tong1, 1College of Food Science & Nutritional Engineering, Key Laboratory of Functional Dairy of Chinese Ministry of Education, China Agricultural University, Beijing, China, 2California Polytechnic State University, San Luis Obispo.

T101 Functional and volatile properties of milk serum protein concentrates.
L. E. Coppola*1, S. A. Rankin2, M. S. Molitor2, and J. A. Lucey1, 1University of Wisconsin-Madison, 2Wisconsin Center for Dairy Research, Madison.

T102 Volatile profiles of commercial starter distillates and diacetyl levels in selected dairy food.

T103 Sensory properties of chocolate ﬂavored, protein fortified, ﬂuid milk based recovery beverages produced using indirect and direct thermal processing.
A. Lammert**, A. Olabi1, K. Brooks1, S. Vink1, and P. Tong1, 1California Polytechnic State University, San Luis Obispo, 2American University of Beirut, Beirut, Lebanon.

T104 Physicochemical properties of pomegranate-ﬂavored carbonated symbiotic beverage.
H. Walsh*, J. Cheng, and M. Guo, University of Vermont, Burlington.

T105 Development of symbiotic milk candy.
J. McCarthy*, Z. Zhang, and M. Guo, University of Vermont, Burlington.

T106 Physicochemical properties of whey protein-based safe paper glue.
J. Wang, J. Cheng*, and M. Guo, University of Vermont, Burlington.
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Forage Quality

T107  Forage yield and quality assessment of tall fescue varieties.
D. J. R. Cherney*, J. H. Cherney†, and D. Parsons‡, 1Cornell University, Ithaca, NY, 2University of Tasmania, Hobart, Tasmania, Australia.

T108  Yield and chemical composition of forage soybeans relative to seeding rate and stage of harvest.
B. G. Buller*, W. A. Storer, D. D. Kee, M. M. Fennell, M. A. Idlett, W. B. Brumbaugh, and F. M. LeMieux, McNeese State University, Lake Charles, LA.

T109  Chemical constituents of Cynodon spp. varieties.

T110  Chemical composition evaluation of different Cynodon dactylon.

T111  Chemical composition of three grasses of Cynodon dactylon.

T112  Nutrient composition of tropical forages collected from intensively managed rotational grazing systems.
J. C. Lopes*, R. B. Reis†, A. L. Miller‡, and D. K. Combs§, 1University of Wisconsin, Madison, 2Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

T113  In vitro nutritional evaluation of spiny and spineless Opuntia cladodes.

T114  Simple sequence repeats markers on the characterization of Lolium and Dactylis accessions.

T115  Correlations among shearing force and chemical compositions of wheat stems.

T116  Adaptation of Brassica spp. and fodder radishes as late season forages in the high desert region of Oregon.
C. L. Engel*, B. A. Charlton, R. J. Roseberg, and R. A. Bentley, Oregon State University, Klamath Basin Research and Extension Center, Klamath Falls.

T117  Effects of age of regrowth and geographical location on forage protein and carbohydrate fractions, silicon content, and their impact on IVOMD of four tropical grasses.
K. A. K. Lee**, J. R. Carpenter†, B. W. Mathews‡, M. S. Thorne‡, and L. E. Sollenberger†, 1CTAHR, University of Hawaii at Manoa, Honolulu, 2CAFNRM, University of Hawaii at Hilo, Hilo, 3University of Florida, Gainesville.

T118  Effect of time from rumen fluid collection to sample inoculation on estimates of in vitro NDF digestibility.
J. C. Lopes*, R. B. Reis†, and D. K. Combs§, 1University of Wisconsin, Madison, 2Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

T119  Time course evaluation of NDF digestibility of hay crop silage and lignin as a predictor of indigestible fiber.
R. Ward* and R. A. Patton**, 1Cumberland Valley Analytical Services, Mangansville, MD, 2Nittany Dairy Nutrition, Mifflinburg, PA.

T120  Effect of a nutrient solution on the chemical composition and in vitro fermentation parameters of wheat hydroponic forage.

T121  Assessing digestibility of shredded juniperus monosperma treated with 5% alkylolation or 3% ammoniation.
C. A. Roof*, S. H. Cox, and S. L. Lodge-Ivey, New Mexico State University, Las Cruces.
T122  Yield and quality of grasses in three different dairy regions of El Salvador.

T123  Effect of fertilization with swine wastewater on fermentative characteristics and losses of corn silage.
M. T. Cangani, R. A. Oliveira, A. C Ruggieri*, E. Urbinati, and F. C. Basso, Unesp/FCAV, Jaboticabal, São Paulo, Brazil.

T124  Tannery sludge as a nutrient source for the tropical grass Brachiaria brizantha.
C. H. B. Miranda*1,2, 1Embrapa Labex USA, Lincoln, NE, 1Embrapa Beef Cattle, Campo Grande, MS, Brazil.

T125  Absorption and utilization of Nnitrogen by Panicum maximum cv. Massai.
C. H. B. Miranda*1,2, 1Embrapa Labex USA, Lincoln, NE, 1Embrapa Beef Cattle, Campo Grande, MS, Brazil.

T126  Comparisons among predictive equations and NIR for determination of in vitro indigestible NDF of corn silages.
R. Ward*, S. Weaver1, and R. A. Patton1, 1Cumberland Valley Analytical Services, Maugansville, MD, 2Nittany Dairy Nutrition, Mifflinburg, PA.

T127  Nitrogen lixiviation and uptake by forage maize with different fertilization and previous soil use.

T128  Biological nitrogen fixation in the tropical forage legume Stylo.
C. H. B. Miranda*1,2, J. R. Verzignassi2, and C. D. Fernandes2, 1Embrapa Labex USA, Lincoln, NE, 1Embrapa Beef Cattle, Campo Grande, MS, Brazil.

T129  Yield and quality of two tropical leguminous trees in the establishment year.

T130  Sequence similarities of genes from the lignin biosynthesis pathway in tropical grasses, maize and rice.
D. M. Gerónimo, N. S. Oliveira, A. B. S. Machado, and L. F. P. Silva*, Universidade de São Paulo, Pirassununga, SP, Brazil.

T131  Ovine and caprine in vitro digestibility of Peganum harmala.

T132  Chemical composition and in vitro ruminal fermentation activity of three Mexican browse species during dry season.

T133  Effect of forage species on ruminal fermentation in continuous culture.
K. J. Soder*, M. A. Sanderson1, and G. E. Brink2, 1USDA-ARS, University Park, PA, 2US Dairy Forage Research Center, Madison, WI.

T134  Yield, chemical composition and ruminal degradability of winter wheat grown under organic and conventional management.
I. Mateos1, M. J. Ranilla1,2, A. Diaz1, C. Palacios1, C. Saro1,2, M. L. Tejido2, and M. D. Carro*1,2, 1Dept. Producción Animal, Universidad de León, 24007 León, Spain, 1Instituto de Ganadería de Montaña (CSIC-ULE), Finca Marzanas, 24346 Grulleros, León, Spain.

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T135  Comparison of nonlinear functions for describing the growth curve of Nile tilapia Oreochromis niloticus var. chitalada in a commercial production cycle.
D. Rodriguez1,2, C. Ariza-Nieto2, A. Munoz1, and G. Afanador*1,2, 1Universidad Nacional de Colombia, Bogota, Colombia, 2CORPOICA, Bogota, Colombia.

T136  In vivo measurement of body composition of chickens using quantitative magnetic resonance (QMR).
A. D. Mitchell*, 1R. W. Rosebrough1, G. Taicher1, and I. Kovner1, 1USDA-ARS, Beltsville, MD, 2Echo Medical Systems, Houston, TX.

T137  Estimation of direct and maternal heritability of body weights in Iranian native chickens using a multivariate animal model.
H. Farhangfar*, M. E. Navidizadeh1, and S. M. Hosseini1, 1Birjand University, Birjand, Iran, 2Agricultural Jihad Organisation, Mashhad, Iran.

T138  Manicoba hay effects on the gastrointestinal tract of free-range birds.
T139  Study on probiotic characteristics of three isolates of lactic acid bacteria in in vitro and in vivo condition in broilers.
S. Ghyamyipour1, S. Rahimi2*, M. A. Karimi Torshizi1, and N. Mojgani1, 1Tarbiat Modares University, Tehran, Tehran, Iran, 2Razi Vaccin and Serum Production Research Institute, Karaj, Tehran, Iran.

T140  Utilization of yeast extract and bacitracin for early intestinal maturation by broiler chicks obtained from breeder hens of different ages.
Y. O. Fasina*, R. Thanissery, and S. J. Thomas, Auburn University, Auburn, AL.

T141  Growth and organogenesis of progeny chicks from dams fed different sources of trace minerals.
Q. J. Sun*, S. Y. An, and Y. M. Guo, State Key Lab of Animal Nutrition, College of Animal Science & Technology, China Agricultural University, Beijing, China.

T142  Effect of dietary probiotic and prebiotic on bone characteristic of Ross broiler chickens.
H. Ziaie1, G. H. Hadarbadi*1, A. Zeinali2, M. A. Karimi Torshizi1, M. Bashtani3, and H. Farhangfar1, 1Agriculture and Natural Resources Research Center, Birjand, South Khorasan, Iran, 2Ferdowsi University, Mashhad, Iran, 3Birjand University, Birjand, South Khorasan, Iran.

T143  Improved hatchability and post-hatch performance in turkey poults receiving iodinated casein in ovo.
W. G. Bottje*, A. Wolfenden1, L. Ding1, M. Morgan1, N. Pumford2, R. Wolfenden2, G. Duncan1, T. Smith1, T. Slagel1, K. Lassiter1, and B. Hargis1, 1Dept. of Poultry Science, Center of Excellence for Poultry Science, Univ. of Arkansas, Fayetteville, 2Dept. of Animal Nutrition, College of Animal Science and Technology, China Agriculture University, Beijing, China, 3Cargill Turkey Division, Springdale, AR.

T144  Effect of daily lithium chloride (LiCl) administration on bone quality and strength in growing broiler chickens.
B. M. Harvey*, M. Eschbach1, E. Ackell1, S. Kotha2, M. Darre1, N. Francis1, D. J. Adams3, R. Ramanathan1, R. Mancini1, and K. E. Govoni1, 1Department of Animal Science, University of Connecticut, Storrs, 2Department of Mechanical Engineering, University of Connecticut, Storrs, 3Orthopaedic Surgery, University of Connecticut Health Center, Farmington.

T145  The bi-allelic expression of delta-like 1 homolog (Dlk1) in avian species.
S. Shin* and K. Lee, The Ohio State University, Columbus.

T146  Expression of myosin heavy chain isoforms during muscle development in Leghorns and broilers.
A. Lee*, Y. Suh, and K. Lee, The Ohio State University, Columbus.

T147  Growth of internal organs in quail embryo (Coturnix japonica) as a function of age.
K. L. Arora*, Fort Valley State University, Fort Valley, GA.

T148  Growth after an innate immune challenge is different between broiler strains.
L. Xu1*, M. deBeer1, M. Einstein1, A. Schinckel1, and T. J. Applegate1, 1Purdue University, W Lafayette, IN, 2Aviagen, Inc., Huntsville, AL.

T149  Influence of gender and initial body weight uniformity on growth performance and carcass quality of pigs slaughtered at 130 kg BW.
L. Cámaras*1, M. P. Serrano1, D. G. Valencia2, A. Fuentetaja3, and G. G. Mateos1, 1Universidad Politécnica de Madrid, Madrid, Spain, 2Nutal S.A., Madrid, Spain, 3Copese S.A., Segovia, Spain.

T150  Sow and litter productivity as affected by sow age.
L. Cámaras1, M. P. Serrano*2, D. G. Valencia2, A. Fuentetaja3, and G. G. Mateos1, 1Universidad Politécnica de Madrid, Madrid, Spain, 2Nutal S.A., Madrid, Spain, 3Copese S.A., Segovia, Spain.

T151  Effects of L-arginine supplementation to suckling piglets on plasma metabolites and skeletal muscle properties at weaning.
D. Loesel1*, S. Goers, and C. Rehfeldt, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

T152  Finishing growth and carcass characteristics following reciprocal embryo transfer between Meishan and White crossbred pigs.
Immunoology and Pathology

T153  Cytokine gene expression patterns of milk from healthy bovine mammary glands in late and early lactation.  
D. F. R. Bruno*, A. G. S Bruno, P. V. Rossitto, J. S. Cullor, and J. L. Stott, Texas Veterinary Medical Diagnostic Laboratory, Amarillo, University of California Davis, Texas AgriLife Research and Extension, Amarillo.

T154  Intra- and interdairy heifer variation of cellular neutrophil functions.  
L. E. Hulbert*, L. R. Schwertner, J. A. Carroll, and M. A. Ballou, Department of Animal and Food Sciences, Texas Tech University, Lubbock, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.

T155  Comparison of the proliferative response of CD8 memory T cells from experimentally and naturally infected cattle shows the response to live Mycobacterium avium ssp. paratuberculosis stronger than the response to Johnin purified protein derivative (JPPD).  

T156  Tumor necrosis factor-α concentrations from whole blood cultures correlate with isolated peripheral blood mononuclear cell cultures.  
L. E. Hulbert*, J. A. Carroll, and M. A. Ballou, Department of Animal and Food Sciences, Texas Tech University, Lubbock, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.

T157  Effect of a Bacillus-based direct-fed microbial on cytokine gene expression in the IEC-6 rat intestinal epithelial cell line.  

T158  Postweaning intestinal mucin dynamics is influenced by cereal grain type and commensal microbiota.  
G. Malik*, M. D. Drew, and A. G. Van Kessel, University of Saskatchewan, Saskatoon, SK, Canada.

T159  Mannan oligosaccharide (MOS) modulates ileal gene expression in pigs experimentally infected with porcine reproductive and respiratory syndrome virus (PRRSV).  
T. M. Che*, R. W. Johnson, K. W. Kelley, W. G. Van Alstine, K. A. Dawson, C. A. Moran, and J. E. Pettigrew, University of Illinois, Urbana, Purdue University, West Lafayette, IN, Alltech Biotechnology Center, Nicholasville, KY.

T160  Differential gene expression in subcutaneous and visceral adipose depots in response to lipopolysaccharide in the Sinclair minipig.  

T161  A comparative analysis of galectin-11 gene expression in ruminants.  

T162  Analysis of a transient receptor potential channel 3 (Trpc3) gene in myotonic goats: A potential model for human cerebellar ataxia.  
M. M. Corley and J. E. Caviness*, Virginia State University, Petersburg.

T163  Simultaneous detection and quantitation of anthelmintic resistance and Haemonchus contortus infection in grazing goats.  
M. M. Corley and A. A. Saeed*, Virginia State University, Petersburg.

Meat Science and Muscle Biology

Fresh Meat Quality of Ruminants, Nonruminants, and Poultry

T164  Brazilian commercial cuts yield of crossbred beef bulls slaughtered at different body masses.  
R. Mello*, A. C. de Queiroz, F. D. de Resende, M. H. de Faria, P. V. R. Paulino, and G. R. Siqueira, Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, Universidade Federal de Viçosa, Viçosa, MG, Brazil, Agência Paulista de Tecnologia dos Agronegócios, Colina, SP, Brazil.

T165  Brazilian primal cuts yield of crossbreed beef cattle slaughtered at different end points.  
R. Mello*, F. D. de Resende, A. C. de Queiroz, M. H. de Faria, F. Maldonado, and G. R. Siqueira, Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, Agência Paulista de Tecnologia dos Agronegócios, Colina, SP, Brazil, Universidade Federal de Viçosa, Viçosa, MG, Brazil.

T166  Portions of high value cuts in carcasses of different beef cattle in the Czech Republic.  
J. Riha*, J. Bezduček, M. Homola, E. Vacakor, and J. Subrt, Agrovyzkum Rapotin Ltd., Vikyrovice, Czech Republic, Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic, Mendel University in Brno, Brno, Czech Republic.
Predicting retail product yield of Nellore bulls using live animal measurements.
S. L. Silva\textsuperscript{1,3}, R. C. Gomes\textsuperscript{1}, J. U. Taruco\textsuperscript{1}, M. N. Bonin\textsuperscript{1}, P. R. Leme\textsuperscript{1}, and J. B. S. Ferraz\textsuperscript{1}, \textsuperscript{1}Universidade de Sao Paulo (FZEA), Pirassununga, SP, Brazil, \textsuperscript{2}Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil, \textsuperscript{3}FAPESP, Sao Paulo, SP, Brazil.

Mixed model analysis of non-linearity between cooking loss and aging time plus other effects.
A. Dufek\textsuperscript{1}, J. Subrt\textsuperscript{1}, J. Simeonova\textsuperscript{2}, and M. Homola\textsuperscript{1}, \textsuperscript{1}Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic, \textsuperscript{2}Mendel University in Brno, Brno, Czech Republic, \textsuperscript{3}AgriResearch Rapotin Ltd., Vikyrovice, Czech Republic.

Epinephrine-induced MMP expression in muscle cells is uncorrelated with AMPK signalling.
M. C. Cha and P. P. Purslow\textsuperscript{1}, University of Guelph, Guelph, Ontario, Canada.

Measurement of purine protein composition as an indicator of beef tenderness.
B. C. Bowker\textsuperscript{*}, J. S. Eastrige, and E. W. Paroczay, USDA-ARS, Beltsville, MD.

Effect of oxidative stress on collagen turnover by bovine intramuscular fibroblasts.
A. C. Archile\textsuperscript{2,1}, S. P. Miller\textsuperscript{1}, I. B. Mandell\textsuperscript{1}, M. C. Cha\textsuperscript{1}, and P. P. Purslow\textsuperscript{1}, \textsuperscript{1}University of Guelph, Ontario, Canada, \textsuperscript{2}University of Zulia, Maracaibo, Venezuela.

Phenotypic differences in MMP activity between fibroblasts from three beef muscles.
A. C. Archile\textsuperscript{2,1}, M. C. Cha\textsuperscript{1}, and P. P. Purslow\textsuperscript{1}, \textsuperscript{1}University of Guelph, Ontario, Canada, \textsuperscript{2}University of Zulia, Maracaibo, Venezuela.

Myofibril fragmentation index of the longissimus muscle of Senepol and Charolais crossbred bulls.
L. del Valle-Mercado\textsuperscript{*}, A. Casas, D. Cianzio, M. Pagan, and G. Ortiz-Colón, University of Puerto Rico, Mayaguez, Puerto Rico, United States.

Effect of brine enhancement and mechanical tenderization on consumer sensory characteristics of cow semimembranosus steaks.
J. M. Popowski\textsuperscript{*}, R. B. Cox, T. J. McNamara, and P. Nelson, University of Minnesota, Twin Cities, St. Paul.

Fatty acid composition including cis-9, trans-11 CLA of cooked ground lamb.
G. Davila-El Rassi\textsuperscript{1}, V. Banskalieva\textsuperscript{1}, and M. Brown\textsuperscript{2}, \textsuperscript{1}R. M. Kerr Food and Agricultural Products Center, Oklahoma State University, Stillwater, \textsuperscript{2}USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.

Effects of maternal metabolizable protein supplementation during late gestation on ovine fetal muscle calpain and calpastatin activities.
J. D. Magolski\textsuperscript{*}, W. L. Keller\textsuperscript{1}, T. M. Jeske\textsuperscript{1}, C. A. Schwartz\textsuperscript{1}, L. A. Lekatz\textsuperscript{1}, J. D. Kirsch\textsuperscript{1}, C. S. Schauer\textsuperscript{2}, K. A. Vonnahme\textsuperscript{1}, and K. R. Maddock-Carlin\textsuperscript{1}, \textsuperscript{1}North Dakota State University, Fargo, \textsuperscript{2}Hettinger Research Experiment Center, Hettinger, ND.

Hyperplastic muscle growth occurs from birth to weaning in pigs.
J. M. R. López\textsuperscript{1}, C. Pardo\textsuperscript{1}, and G. Bee\textsuperscript{**}, Unidad de nutrición animal, Estación Experimental del Zaidín (CSIC), Granada, Spain, \textsuperscript{2}Agroscope Liebefeld Posieux, Research Station ALP, Postieux, Switzerland.

Relationship between average litter weight and intralitter weight variability on myogenesis in newborn piglets.
C. Pardo\textsuperscript{1,2}, M. Kreuzer\textsuperscript{1}, and G. Bee\textsuperscript{**}, \textsuperscript{1}Agroscope Liebefeld Posieux, Postieux, Switzerland, \textsuperscript{2}ETH Zurich, Institute of Plant, Animal and Agroecosystem Sciences (IPAS), Zurich, Switzerland.

Influence of genotype and slaughter weight on carcass meat quality of Iberian pigs.
M. Sánchez\textsuperscript{1}, J. Viguera\textsuperscript{1}, M. I. Gracia\textsuperscript{1}, J. Peinado\textsuperscript{1}, A. Robina\textsuperscript{2}, and J. Ruiz\textsuperscript{2}, \textsuperscript{1}INASDE Agroalimentaria S. L., Madrid, Spain, \textsuperscript{2}Universidad de Extremadura, Cáceres, Spain.

Effect of birth parity and sex on carcass traits and meat quality characteristics of crossbred pigs.
G. D. Kim\textsuperscript{*}, J. Y. Jeong\textsuperscript{2}, K. Y. Seo\textsuperscript{1}, E. Y. Jung\textsuperscript{1}, H. S. Yang\textsuperscript{1}, and S. T. Joo\textsuperscript{1}, Division of Applied Life Science (BK21 Program), Graduate School of Gyeongsang National University, Jinju, Gyeongnam, Republic of Korea.

Carcass quality of pigs vaccinated against gonadotropin releasing factor compared to surgically castrated males and gilts from two different sire lines.
J. I. Morales\textsuperscript{1}, M. P. Serrano\textsuperscript{1,2}, L. Cámara\textsuperscript{1}, J. D. Berrocoso\textsuperscript{1}, J. P. López\textsuperscript{2}, and G. G. Mateos\textsuperscript{1}, \textsuperscript{1}Imasde Agroalimentaria S. L., Madrid, Spain, \textsuperscript{2}Universidad Politécnica de Madrid, Madrid, Spain.

The influence of cage housing system and laying hen strain on breast meat quality traits.
K. Juurlink\textsuperscript{*}, A. McMillan\textsuperscript{1}, R. Ofori\textsuperscript{1}, B. Rathgeber\textsuperscript{2}, and M. Jendral\textsuperscript{1}, \textsuperscript{1}Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, \textsuperscript{2}Agriculture Agri-food Canada, Truro, Nova Scotia, Canada.

Effect of ultimate pH on the chemical properties of proteins in turkey breast meat.
J. Chan\textsuperscript{*}, D. A. Omana, and M. Bett, University of Alberta, Edmonton, AB, Canada.

The effect of turkey breast meat pH on fatty acid profile of polar lipids and susceptibility to oxidation.
P. K. Hong\textsuperscript{*}, J. Chan, D. A. Omana, and M. Bett, University of Alberta, Edmonton, AB, Canada.
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DDGS

T187 Effect of the inclusion levels of DDGS to the feeds of broilers and glucanase, xylanase and phytase addition to low-energy DDGS-added diets.
M. L. Angeles** and S. Gómez**, 1INIFAP, Ajuchitlán, Colón, Qro, México, 2FESC-UNAM, Ajuchitlán, Colón, Qro. México.

T188 High dietary inclusion of dried distillers grains with solubles in broiler rations: Production effects and yields.
M. K. Masa’deh* and S. E. Scheideler, University of Nebraska-Lincoln, Lincoln, NE.

T189 Effect of pellet quality on utilization of distillers dried grains with solubles (DDGS) in broiler diets.
C. A. Coto*, C. Lu**, Y. Min*, A. J. Karimi2, F. Yan1, and P. W. Waldroup1, 1University of Arkansas, Fayetteville, 2University of Kurdistan, Kurdistan, Iran.

T190 Effect of distillers dried grains with solubles and an enzyme supplement on performance and egg quality of brown egg layers.

T191 Feeding value of DDGS for pigs: Correlating in vitro dry matter digestibility and crude protein digestibility to its nutrient content and colour.

T192 Substitution of sorghum and soybean meal by distillers dried grains with solubles in diets for fattening rabbits.
H. Bernal-Barragán*, Y. Vázquez-Pedroso**, M. Valdivie-Navarro2, C. A. Hernández-Martínez1, M. A. Cerrillo-Soto3, A. S. Juárez-Reyes3,4, and E. Gutiérrez-Ornelas1,2, 1Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México, 2Instituto de Ciencia Animal, La Habana, Cuba, 3Universidad Juárez del Estado de Durango, Durango, Durango, México, 4Red Internacional de Nutrición y Alimentación en Rumiantes, Monterrey, Nuevo León, México.

T193 Evaluation of in vitro procedures to measure digestibility of fiber in distillers dried grains with solubles.
P. E. Urriola* and H. H. Stein, University of Illinois, Urbana.

T194 Effects of distillers dried grains with solubles and lactose on fecal Lactobacillus biota of nursery pigs.

T195 Bone breaking strength of laying chickens fed increasing levels of omega-3 PUFA DHA (22:6) using algae as vehicle of diet enrichment.
N. P. Johnston*, C. B. Evans, and R. T. Davidson, Brigham Young University, Provo, UT.

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Energy

T196 Energy requirement of broiler breeder hens: Egg weight, egg composition and progeny.

T197 Determination of metabolizable energy content of meat and bone meal for broilers using regression method.
O. A. Bolarinwa*, O. A. Olukosi*1, R. A. Hamzat*, and O. Adeola1, 1Purdue University, West Lafayette, IN, 2South Suburban College, Chicago, IL.

T198 Determination of the chemical composition and true metabolizable energy of high oil poultry by-product meal.
M. G. Olyayee*, H. Janmohammadi, A. Taghizadeh, A. Rafat, and S. Ostan, University of Tabriz, Tabriz, Iran.

T199 Metabolizable energy and nutrient digestibility coefficient determination of ingredients with nutritional adjustment.
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Enzyme

T201  True and apparent metabolisable energy values of various wheat screening samples.
M. Mazhari*1,2, A. Golian*1,2, 1Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, 2Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

T202  Effect of various levels of energy and protein on Humoral immune response in broiler chicks.
M. Pilevar, A. Golian*, and M. Aami azghadi, Ferdowsi University of Mashhad, Khorasan Razavi, Iran.

T203  Effect of xylanase supplementation in a pig diet on ileal and postileal energy and fiber fraction digestibility.
L. Babinszky*, J. Tossenberger1, D. Ottó, and I. Kühn, 1Kaposvár University, Kaposvár, Hungary, 2AB Vista, Darmstadt, Germany.

Influences of four kinds of exogenous enzymes on performance, jejunal digesta viscosity and litter moisture of broilers fed wheat-based diet.
H. Shirzadi*, H. Moravej, and M. Shivazad, University of Tehran, Karaj, Tehran, Iran.

Cloning, expression and characterization of a thermostable beta-propeller phytase from Bacillus licheniformis.
S. J. Fu*, J. Y. Sun, X. Y. Weng, L. C. Qian, and Z. Q. Shen, 1Microbiology Division, Institute of Feed Science, College of Animal Science, Zhejiang University, Hangzhou Zhejiang, China, 2College of Life Science, Zhejiang University, Hangzhou Zhejiang, China, 3Key Laboratory of Preventive Veterinary Medicine and Animal Biotechnology, Binzhou Animal Husbandry and Veterinary Research Institute, Binzhou Shandong, China, 4Shandong Lvdu Biological Technology Co., Ltd, Binzhou Shandong, China.

Impact of a new phytase on apparent phosphorus and calcium availability, bone mineralization and performance of broilers.
R. Angel*, W. Saylor*, and N. Ward*, 1University of Maryland, College Park, 2University of Delaware, Newark, 3DSM Nutritional Products, Parsippany, NY.

Effects of co-administration of phytase and energy enzymes on broiler performance, tibia strength, bone ash, and processing parameters.
J. R. Coppedge*, J. Klein, A. Jordan, K. Jessen, S. Pohl, B. Brown, F. Ruch, and J. T. Lee, 1Texas A&M University, College Station, 4Enzyvia LLC, Sheridan, IN.

Effect of CTCzyme β-mannanase on broiler nutrient digestibility in corn-soybean meal diets.
F. Mussini*, C. A. Coto1, S. Goodgame1, C. Lu1, A. J. Karimi1, J. Lee3, and P. W. Waldroup1, 1University of Arkansas, Fayetteville, 2University of Kurdistan, Kurdistan, Iran, 3CTC Bio Inc., Seoul, Korea.

Effect of phytase supplementation on the digestibility of crude protein and amino acids of cowpea (Vigna unguiculata) in broilers.
E. A. Iyai*, University of Ibadan, Ibadan, Oyo, Nigeria.

Effect of phytase supplementation on the digestibility of phosphorus of cowpea (Vigna unguiculata) in broilers.
E. A. Iyai*, University of Ibadan, Ibadan, Oyo, Nigeria.

Effect of Ronozyme ProAct supplementation on growth and meat yield responses of broilers during a forty-two day production period.
W. A. Dozier III*, N. E. Ward2, and S. L. Vieira1, 1Auburn University, Auburn, AL, 2DSM Nutritional Products, Inc., Parsippany, NJ, 3Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil.

Influences of several enzyme containing β-glucanase and xylanase on meat yield of broilers fed barley-based diet.
H. Shirzadi*, H. Moravej, M. Shivazad, and F. Fatehi, Department of Animal Science, Faculty of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Effect of high levels of phytase for broilers.

Effect of enzymes in the diet of hen eggs quality.
T215  **Use of enzyme complex on the performance of layer hens.**  

T216  **Dietary supplementation with two types of enzyme preparations improves nutrient digestibility in growing pigs.**  

T217  **Effects of dietary Tylan inclusion level on the growth performance and carcass characteristics of growing-finishing pigs.**  

T218  **Effect of a protease enzyme on performance of weanling piglets fed corn-soybean diets with different protein levels.**  

T219  **Effects of supplementing different enzymes on performance, nutrient digestibility and blood metabolites in growing pigs.**  

T220  **Evaluation of the effects of dietary enzyme on growth performance, nutrient digestibility, blood characteristics and ileal digestibility in growing pigs.**  

T221  **Protease increased in vitro digestibility of various feed ingredients.**  

T222  **Effects of graded levels of phytase on the apparent and standardized total tract digestibility of phosphorus in corn and corn co-products.**  
F. N Almeida* and H. H. Stein, 1University of Illinois, Urbana.

T223  **Effects of multi-enzyme on nutrients digestibility and metabolizable energy values of pure corn and wheat diets.**  

T224  **Effect of Rovabio Max on energy and nitrogen utilization in diets high in distillers dried grains with solubles.**  

T225  **Effect feed processing method and enzyme supplementation of wheat-based diets on performance, gastrointestinal and carcass characteristics in broiler chicks.**  
Z. Qobadi and A. Karimi*, 1University of Kurdistan, Sanandaj, Kurdistan, Iran.

T226  **Calcium chloride reduces the negative impact of feeding high potassium and co-product containing diets to finishing pigs.**  
J. Guimaraes*, C. L. Zhu, D. Wey, and C. F. M. de Lange, 1University of Guelph, Guelph, Ontario, Canada.

T227  **Production and characterization of a thermostable beta-propeller phytase from Bacillus licheniformis.**  
S. J. Fu*, Y. J. Sun*, X. Y. Sun*, L. C. Qian*, and Z. Q. Shen*, 1Microbiology Division, Institute of Feed Science, College of Animal Science, Zhejiang University, Hangzhou zhejiang, China, 2College of Life Science, Zhejiang University, Hangzhou zhejiang, China, 3Binzhou Animal Husbandry and Veterinary Research Institute, Binzhou shandong, China, 4Shandong Lvdu Biological Technology Co., Ltd, Binzhou shandong, China.

T228  **A lysozyme supplement for piglets: Weaned pigs responses to Escherichia coli K88+(ETEC) oral challenge.**  

T229  **Effect of microbial phytase on growth performance, plasma phosphorus concentration and tibia mineralization of broilers according to dietary calcium and phosphorus concentrations.**  
M. P. Letourneau Montminy*, N. Meme*, M. Magnin*, and A. Narcy*, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2INRA UR85, Nouilly, France, 3BNA Nutrition Animale, Chateau-Gontier, France.

T230  **Effect of phytase application on the calcium and phosphorus retention and balance of layers in the last third of the laying cycle.**  
J. Tossenberger*, L. Babinszky*, and I. Kühm*, 1Kaposvár University, Kaposvár, Hungary, 2AB Vista, Darmstadt, Germany.

T231  **Effect of enzyme preparation on nutrient digestibility, digestive enzyme activities and pancreatic enzyme mRNA expression of hens during late laying period.**  
T232 Effects of multi-enzyme and *Bacillus subtilis* on sow reproductivity.  

T233 EconomasE decreases sterol carrier protein-2 (SCP2) gene expression levels in breast muscle from 6-week old chickens.  

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**Fat**

T234 Effects of different dietary sources of n-3 PUFA on reproductive performance of laying hens.  
M. Pilevar1, J. Arshami1, A. Heravi Moussavi1, A. Gollan2*, M. R. Basami1, and A. R. Rezaee2, 1Ferdowsi University of Mashhad, Khorasan Razavi, Iran, 2Meshhad University of Medical Sciences, Khorasan Razavi, Iran.

T235 Docosahexaenoic acid does not increase insulin sensitivity in gilts.  

T236 Conjugated linoleic acid (CLA) modifies carcass traits and fatty acid composition in finishing pigs fed with high linoleic acid diets.  
G. Cordero1,2, B. Isabel2, J. G. Vicente2, J. Morales1, C. Piñeiro*1, and C. J. López-Bote2, 1PigCHAMP Pro Europa, Segovia, Spain, 2Universidad Complutense de Madrid, Spain.

T237 Effects of high oil poultry by-product meal in laying hen performance, egg quality, egg components and blood parameters.  
G. O. Majid*, J. Hossein, T. Akbar, and R. Abass, University of Tabriz, Tabriz, Iran.

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**Feed Additive**

T238 Viability of *Lactobacillus plantarum* in different protective agents and its effects on growth performance and immunity of weaned pigs.  

T239 Effect of dietary delivery controlled antioxidant on the performances of cold stressed broiler.  
V. Noirot*, Phodé Laboratories, Albi-Terssac, France.

T240 Effects of feeding oregano essential oil to broilers on ileal digestibility and performance under high altitude conditions.  
L. Betancourt1*, C. Ariza-Nieto2, and G. Afanador-Téllez2, 1Universidad de La Salle, Bogotá, Colombia, 2CORPOICA, Bogotá, Colombia.

T241 Utilization of glandless and standard cottonseed meal in broiler diets.  

T242 TMEEn and amino acid digestibility of glandless and commercial cottonseed meal for broilers.  

T243 Effects of coated sodium butyrate on the performance and gut morphology of broiler chickens.  
Y. Zou1, Z. B. Yang*1, W. R. Yang1, S. Z. Jiang1, G. G. Zhang1, and R. Yu1, 1Shandong Agricultural University, Tai-an, Shandong, PRC, 2Kangdequan Feed Co., Ltd, Hangzhou, Zhejiang, PRC.

T244 Study on the utilization of oregano essentials oils (OEO) by tilapia *Oreochromis niloticus* var. *chitalada* in a commercial production cycle.  
D. Rodriguez*1,2, C. Ariza-Nieto2, A. Munoz2, and G. Afanador1,2, 1Universidad Nacional de Colombia, Bogota, Colombia, 2CORPOICA, Bogota, Colombia.

T245 Dietary supplementation effects of oregano essential oils and two sources of fat on the performance of brown laying hens under high altitude conditions.  
D. Botero1, F. Silva1, L. Betancourt1,2, C. Ariza-Nieto2, and G. Afanador-Téllez3, 1Universidad de La Salle, Bogotá, Colombia, 2CORPOICA, Bogota, Colombia, 3Universidad Nacional de Colombia, Bogotá, Colombia.
T246 Effect of supplementing the diet of sows with a source of yeast-derived proteins during lactation on performances of sows and piglets.
P. A. Plante*1,2, J. P. Laforest2, and C. Farmer1, 1Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Animal Science Dept., Laval University, Québec, QC, Canada.

T247 Microencapsulation of Lactobacillus plantarum and its effects on growth performance of weaned pigs.

T248 Effect of xylitol-oligosaccharides on growth performance, enzyme activity and volatile fatty acid production of post-weaning pigs.
H. S. Huang1, S. Zhou1, Z. B. Yang2, W. R. Yang2, and L. Xiao3, 1Qinghai University, Xining, PR China, 2Shandong Agricultural University, Taian, Shandong, PR China, 3Shandong Longtige Bio-technology Co., Ltd, Dezhou, Shandong, PR China.

T249 Effect of short-term benzoic acid and chlortetracycline treatment of feed on splanchnic metabolism of valine in growing pigs.
N. B. Kristensen*, R. G. Engberg1, B. B. Jensen1, J. V. Nørgaard1, H. D. Poulsen1, H. D. Zacho1, and N. M. Sloth1, 1Aarhus University, Tjele, Denmark, 2Viborg Hospital, Viborg, Denmark, 3Danish Agriculture and Food Research Council, Aarhus, Denmark.

T250 Characterization of the gastrointestinal microbiota in neonatal piglets from sows supplemented with a Bacillus-based direct fed microbial.
A. Baker*, E. Davis, and T. Rehberger, Danisco, Waukesha, WI.

T251 Cloning of a porcine trypsinogen gene and over-production of the protein as a feed additive.
F. Wang1, H. Zhao1, X. J. Xia2, and X. G. Lei3, 1USDA-ARS, Athens, GA, 2University of Georgia, Athens, 3Cornell University, Ithaca, NY.

T252 Effects of dietary benzoic acid supplementation on net portal absorption and hepatic uptake of amino acids in growing pigs.
N. B. Kristensen*, H. D. Zacho1, J. V. Nørgaard1, and H. D. Poulsen1, 1Aarhus University, Tjele, Denmark, 2Viborg Hospital, Viborg, Denmark.

T254 Effects of dietary Stafac inclusion in the growth performance and carcass characteristics of growing-finishing pigs.
C. L. Puls*, M. Mercedes1, M. Ellis1, A. M. Gaines2, B. A. Peterson1, B. F. Wolter1, and M. Kocher1, 1University of Illinois, Urbana, 2The Maschhoffs, Carlyle, IL.

Physiology and Endocrinology
Adipose and Leptin

T255 Expression of interleukins, neuropeptides, and growth hormone receptor (GHR) and leptin receptor (LPR) genes in adipose tissue from growing broiler chickens.
G. J. Hausman*, C. R. Barb1, B. D. Fairchild2, A. Jr. Hinton2, and J. A. Cason1, 1USDA-ARS, Athens, GA, 2University of Georgia, Athens.

T256 Apoptosis in different fat depots of cows treated with conjugated linoleic acids (CLA).
S. Haeussler*, D. Germeroth1, D. von Soosten1, S. Dänicke1, and H. Sauerwein1, 1University of Bonn, Bonn, Germany, 2Federal Research Institute of Animal Health, Braunschweig, Germany.

T257 Differences in the mRNA abundance of the adiponectin system and GPR109A in adipose tissue and liver of the F2 cows of Charolais × German Holstein crosses.
M. Mielenz*, B. Kuhla1, H. Sauerwein1, and H. Hammon1, 1University of Bonn, Bonn, NRW, Germany, 2FBN Dummerstorf, Dummerstorf, MV, Germany.

T258 Changes in plasma concentrations of leptin in ewes during pregnancy.
J. A. Daniel*, A. B. Milam1, M. E. Gafnea1, B. K. Whitlock1, and D. H. Keisler1, 1Berry College, Mount Berry, GA, 2University of Tennessee, Knoxville, 3University of Missouri, Columbia.

T259 Nutritional regulation of body condition score at the initiation of the transition period in dairy cows on grazing conditions: hepatic expression of fatty acid metabolism genes.
M. Carriquiry*, M. L. Adrien1, V. V. Arteguita1, D. Mattiudda1, and A. Meikle1, 1School of Agricultural Sciences, UDELAR, Uruguay, 2School of Veterinary Medicine, UDELAR, Uruguay.

T260 Gluconeogenic enzymes are differentially regulated by fatty acid cocktails in Madin-Darby Bovine Kidney cells.
H. M. White*, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.
The effects of leptin on phosphorylation of mTOR and rpS6 to signal protein synthesis in bovine mammary epithelial cells.

Glucocorticoid regulation of chicken adipose triglyceride lipase in adipose tissue.
J. Ser*, S. Shin, Y. Suh, M. Kim, D. Latshaw, and K. Lee, The Ohio State University, Department of Animal Sciences, Columbus.

Bovine acute-phase response following corticotrophin-releasing hormone (CRH) infusion.

Physiology and Endocrinology

Hormonal Regulation of the Estrous Cycle in Beef Cattle

Effects of 72-h temporary calf removal prior to fixed-time AI on pregnancy rates and subsequent calf performance in suckled beef cows.

Timed AI pregnancy rates in suckled beef cows in response to equine chorionic gonadotropin (eCG).
L. D. Wallace*, S. L. Pulley*, K. C. Olson1, J. R. Jaeger1, J. W. Bolte1, S. K. Johnson1, L. A. Pacheco1, K. Bischoff2, T. Loyd2, G. C. Lamb2, and J. S. Stevenson1, Kansas State University, Manhattan, 1University of Florida, Marianna.

Effect of post-insemination GnRH on the pregnancy rate of beef cattle.
W. A. Greene* and C. L. Pickworth, The Ohio State University, Wooster.

Reproductive performance of prepubertal Bos indicus heifers after progesterone-based treatments.
I. Claro Júnior*, O. Sá Filho2, R. Peres1, J. A. Carvalho1, D. R. A. F. Reis1, M. Day2, and J. L. Vasconcelos1, 1FMVZ - UNESP, Botucatu, SP, Brazil, 2Ohio State University, Columbus.

Comparison of three doses of prostaglandin F2α in a 5-day CIDR-based synchronization protocol in beef cows.

Pregnancy per AI (P/AI) of dairy cows following presynchronization and splitting the prostaglandin (PGF) injection in the 5d-Cosynch protocol.

Luteal function following a normal versus synchronized estrus in beef heifers.
M. F. Smith**, D. H. Keisler1, and F. Stormshak2, 1University of Missouri, Columbia, 2Oregon State University, Corvallis.
Physiology and Endocrinology
Male Reproduction, Gamete Cryopreservation, and Embryos

T275  Validity of sperm penetration assay in boar fertility testing.

T276  Comprehensive proteomic analysis to defining sperm fertility in bovine.

T277  Effects of two egg yolk-free commercial extenders and centrifugation on freezing ability of semen in Mahabadi goat.
M. Ansari*, A. Towhidii, M. Moradi Shahre Babak, and M. Bahreini, 1University of Tehran, Department of Animal Science, Karaj, Tehran, Iran, 2Animal Breeding Center of Iran, Karaj, Tehran, Iran.

T278  The effect of ethanol supplemented extender on freezing ability of goat semen.
M. Ansari*, A. Towhidii, M. Moradi Shahre Babak, and M. Bahreini, 1University of Tehran, Department of Animal Science, Karaj, Tehran, Iran, 2Animal Breeding Center of Iran, Karaj, Tehran, Iran.

T279  Natural non-synonymous mutations in the ovine leptin gene affect leptin binding affinity and biological activity.

T280  Effect of different aspiration pressure on the number and quality of ovine oocyte.
A. Abedini*, H. Kohram, and R. Salehi, Tehran University, Tehran, Iran.

T281  The effect of poly-L-lysine as a new cryoprotectant for ovine oocyte vitrification.

T282  Administration of human chorionic gonadotropin (hCG) to embryo transfer (ET) recipients increased ovulation, progesterone, and transfer pregnancy rates.
L. D. Wallace*, C. A. Breiner, R. M. Breiner, and J. S. Stevenson, 1Kansas State University, Manhattan, 2Cross Country Genetics North Inc., Westmoreland, KS.

T283  Effect of addition of cAMP regulators to bovine in vitro oocyte maturation medium.
C. Burroughs* and G. Seidel, Colorado State University.

T284  Testicular abnormalities in Gallus gallus var. domesticus males.
J. R. Moyle*, S. M. Whipple, F. D. Clark, and R. K. Bramwell, University of Arkansas, Fayetteville.

T285  Effects of hypothermic storage of striped bass (Morone saxatilis) sperm on intracellular calcium, reactive oxygen species formation, mitochondrial function, motility, and viability.
H. D. Guthrie*, L. C. Woods III, and G. R. Welch, 1Animal Biosciences and Biotechnology Laboratory, Agricultural Research Service, USDA, Beltsville, MD, 2Department of Animal and Avian Sciences, University of Maryland, College Park.

T286  Renin message is up-regulated in spermatogonia and testes of male mice in response to treatment with aflatoxin B1.

T287  Testicular development of breeder males reared on an accelerated growth schedule.
W. D. Berry*, S. H. Oates, L. M. Stevenson, and J. B. Hess, Auburn University Department of Poultry Science, Auburn, AL.

T288  Hypoxic conditions during the CAM development (E5-E12) effect on embryos’ development.
S. Druyan*, Institute of Animal Science, ARO The Volcani Center, PO Box 6, Bet Dagan, Israel.

Physiology and Endocrinology
Nutritional Physiology

T289  Rumen fluid inhibits proliferation and stimulates expression of cyclin-dependent kinase inhibitors 1A and 2A in bovine rumen epithelial cells.
A. Wang* and H. Jiang, Virginia Polytechnic Institute and State University, Blacksburg.

T290  Short-term postpartum supplementation on hepatic gene expression in primiparous spring-calved beef cows on grazing conditions. 1. Whole rice middlings.
Short-term postpartum supplementation on hepatic gene expression in primiparous spring-calved beef cows on grazing conditions. 2. Lotus subtiliflorus cv. Rincon.

Effects of glucose on suckling aggressiveness in newborn Holstein and Brown Swiss calves.
M. D. DenBeste* and H. D. Tyler, Iowa State University, Ames.

Butyrate stimulates the cAMP/protein kinase A signaling pathway.
A. Wang*, H. Si, D. Liu, and H. Jiang, Virginia Polytechnic Institute and State University, Blacksburg.

The effect of forage availability on the somatotropic axis in free-ranging alaskan moose (Alces alces).
A. A. Parillo*, J. P. Richmond, K. S. White, J. Crouse, B. W. Dale, and S. A. Zinn, 1University of Connecticut, Storrs, 2Alaska Department of Fish and Game, Juneau, 3Alaska Department of Fish and Game, Soldotna, 4Alaska Department of Fish and Game, Palmer.

Effects of dietary probiotic supplementation and posthatching holding time on intestinal pH and microflora of male broilers.
H. Unsal, A. G. Onol, M. Daskiran, O. Cengiz*, O. Tatli, and O. Sevim, 1Adnan Menderes University, Aydin, Turkey, 2Johnson & Johnson Corporate Science and Technology, New Brunswick, NJ.

Maintenance energy requirements of gestating beef cows, rumen temperature, and plasma concentration of thyroxine and triiodothyronine.
T. A. Pye*, B. H. Boehmer, and R. P. Wettmann, Oklahoma Agricultural Experiment Station, Stillwater.

Effects of cobalt supplementation and vitamin B12 injections on energy metabolism of dairy cows.
M. S. Akins*, S. J. Bertics, M. T. Socha, and R. D. Shaver, 1University of Wisconsin, Madison, 2Zinpro Corporation, Eden Prairie, MN.

The relationship of tissue copper concentrations and genes involved in copper homeostasis in the cow, pig, and goat.
H. So, E. Domby*, T. Engle, and H. Han, Colorado State University, Fort Collins.

Modification and validation of a bovine TNFα enzyme-linked immunosorbent assay with improved sensitivity.
J. K. Farney*, L. K. Mamedova, and B. J. Bradford, Kansas State University, Manhattan.

Plasma cortisol, corticosteroid-binding globulin and free cortisol index in pre-and post-weaned pigs supplemented with omega-3 polyunsaturated fatty acid.

Processing and Products

Characterization of omega-3 PUFA enrichment in laying hens.
S. Nain* and R. A. Renema, University of Alberta, Edmonton, AB, Canada.

Production, Management and the Environment

Dairy

Effects of increased milking frequency on productivity of Holstein dairy cows.
M. Dehghan-Banadaky*, M. Eslamizad, K. Rezayazdi, M. Moradi-Shahrbabak, and H. Bahrami, Department of Animal Science, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Effects of increasing milking frequency on blood metabolites of Holstein cows.
M. Eslamizad, K. Rezayazdi, M. Dehghan-Banadaky*, H. Kohram, and R. Heydari, Department of Animal Science, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Effect of temperature-humidity index on test day milk yield of Iranian primiparous Holsteins.
H. Farhangfar*, A. Arab, S. R. Mirae Ashtiani, A. Riasi, H. Rashid, and M. K. Akbari, 1Birjand University, Birjand, Iran, 2Karaj University of Agriculture and Natural Resources, Karaj, Iran, 3Esfahan Industrial University, Esfahan, Iran, 4Agricultural Jihad Organisation, Mashhad, Iran.
T305 Application of mixed linear model to evaluate effects of temperature and relative humidity on lactation milk yield of Iranian primiparous Holsteins.
H. Farhangfar*, H. Roshan1, N. Emam Jomeh Kashan3, and M. H. Fathi Nasiri1, 1Birjand University, Birjand, Iran, 2Aboureyhan University, Tehran, Iran.

T306 The association between days in milk, somatic cell counts, milk urea nitrogen, and percentage of milk fat and protein in dairy cows.
S. R. Heidari Khormiziz1*, M. Dehghan Banadaki2, and F. Farhang1, 1University of Tehran, Tehran, Karaj, Iran, 2University of Tehran, Tehran, Karaj, Iran.

T307 The association between milk urea nitrogen, milk yield, somatic cell counts and parity in Holstein dairy herds.
S. R. Heidari Khormiziz1*, M. Dehghan Banadaki2, Sh. Hasanalou1, and F. Fatehi4, 1University of Tehran, Karaj, Tehran, Iran, 2University of Tehran, Karaj, Tehran, Iran, 3University of Tehran, Karaj, Tehran, Iran.

T308 Control of acute postpartum metritis in lactating dairy cows at high risk of developing metritis following dystocia, stillbirth, twinning and/or retained placenta/fetal membranes with ceftiofur crystalline free acid sterile suspension (CCFA-SS).
C. McLaughlin*, C. LaGrow, C. Daugherty, E. Stanisiewski, and M. Lucas, Pfizer Animal Health, Kalamazoo, MI.

T309 Evaluation of ceftiofur crystalline free acid sterile suspension (CCFA-SS) administered to dairy cows exhibiting risk factors for acute postpartum metritis.
E. Stanisiewski, C. Daugherty*, J. Hallberg, and M. Lucas, Pfizer Animal Health, Kalamazoo, MI.

T310 Evaluating reproductive outcomes in United States Holstein dairies.
I. M. Moeller*, N. A. Michael1, J. C. Dalton2, and G. C. Lamb3, 1ABS Global, Inc., DeForest, WI, 2University of Idaho, Caldwell, 3University of Florida, Marianna.

T311 The effect of soy isolate source in milk replacer on growth and health of calves fed milk replacer.
R. C. Musser*, B. L. Miller, T. J. Earleywine, and T. E. Johnson, Land O’ Lakes, Inc., Webster City, IA.

T312 Non-diary risk factors for lameness and their consequences in dairy cows.
I. Guasch1 and A. Bach*, 1Department of Ruminant Production, IRATA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain.

T313 Associations between several aspects of heifer development and dairy cow longevity.
A. Bach*, 1ICREA, Barcelona, Spain, 2Department of Ruminant Production, IRATA, Caldes de Montbui, Spain.

T314 Effects of heat stress and Niashure (NI) supplementation on winter acclimated lactating cattle.

T315 A preliminary investigation of individual variation in N excretion by lactating dairy cows.

T316 Repeatability coefficients for dry matter intake and efficiency of nitrogen utilization for milk production in lactating Holstein cows challenged with low N diets.
N. B. Kristensen*, T. Hvelplund, M. R. Weisbjerg, P. Lund, and P. Løwendahl, Aarhus University, Tjele, Denmark.

T317 Metabolic profile and postpartum health in Holstein cows in southern Brazil.
T. A. Frigotto1, S. O. Juchem2, R. D. OIlhoff3, I. R. Barros Filho1, P. Schmidt1, and R. Almeida*, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2University of California, Davis, 3Pontificia Universidad Católica do Paraná, Curitiba, PR, Brazil.

T318 Factors affecting the bulk tank milk quality collected by a dairy industry of Minas Gerais state, Brazil from 2002 to 2008.

T319 Evolution of milk production and premium payment for total bacterial count, somatic cell count, fat and protein contents in a dairy industry of Minas Gerais state, Brazil.

T320 Comparison of different methods of rearing management in Holstein dairy calves.
F. Niazi, H. Amanlou, E. Qashqayi*, and E. Mahjoubi, Zanjan University, Zanjan, Iran.

T321 Differences between expanding and non-expanding Wisconsin dairy farms.
J. M. Janowski and V. E. Cabrera*, University of Wisconsin, Madison.

T322 Effect of heat stress on pregnancy rate of dairy cows using artificial insemination or embryo transfer in commercial dairy farms of central Mexico (Aguascalientes).
R. Lozano1, E. Gonzalez-Padilla2, C. Vazquez2, C. F. Archeiga*, and J. M. Silva1, 1Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias, Pabellon, AGS, Mexico, 2Universidad Nacional Autonoma de Mexico, Mexico, D. F., 3Universidad Autonoma de Zacatecas, Zacatecas, Mexico.
Calculating field nutrient removal rates to comply with General Order for Existing Milk Cow Dairies from California’s Central Valley Regional Water Quality Control Board.

Association of production level and calving season with reproductive function of Holstein cows from an intensive dairy production system of central Mexico (Aguascalientes, Mexico).
P. Hernandez-Briano1, C. F. Arechiga*1, J. I. Aguilera-Soto1, M. A. Lopez-Carlos1, M. Rincon1, J. M. Silva1, C. A. Medina-Flores1, and R. Lozano2, 1Universidad Autonoma de Zacatecas, Zacatecas, Mexico, 2Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Pabellon, Ags, Mexico.

Bacterial survival rate in sanitizing teat dips for dairy cows.
S. Retz and S. I. Kehoe*, University of Wisconsin-River Falls, River Falls.

Stage of lactation alters production responses of cows subjected to feed restriction.

The effects of dietary ThermalCare-R (TCR) on body temperature indices, production and metabolism in heat-stressed lactating cows.
R. P. Rhoads*, M. V. Skrzypek1, S. S. Block1, and L. H. Baumgard1, 1University of Arizona, Tucson, 2Archer Daniels Midland, Decatur, IL, 3Iowa State University, Ames.

Effect of increased omega-3 fatty acids on production and reproduction in high producing lactating cows during cool season and hot season conditions.
T. Colburn*, K. D. Murphy1, C. Walhof3, and A. V. Grove3, Virtus Nutrition, LLC, Corcoran, CA, 1Valley Veterinarians, Inc., Tulare, CA, 2AG Research, LLC, White Sulphur Springs, MT.

Effect of thermal stress, cistern size, and milking frequency on plasma mineral concentrations in Holstein dairy cows.
R. Ben Younes1, M. Caccamo*2, I. Schadt2, M. Ayadi3, T. Najar1, M. Ben M’Rad1, and G. Caja4, 1Institut National Agronomique de Tunisie, Tunisia, 2ColFiLaC, Regione Siciliana, Ragusa, Italy, 3Institut Superieur de Biologie appliqué de Médénine, Tunisia, 4Universitat Autònoma de Barcelona, Bellaterra, Spain.

Body growth of pregnant Holstein heifers reared on pasture or conventional diet.
R. R. Peters*, S. W. Fultz2, J. W. Semler*, and R. A. Erdman1, 1University of Maryland, College Park, 1University of Maryland Extension, Frederick, 2University of Maryland Extension, Boonsboro.

Postpartum reproduction and NEFA changes during early lactation in Holsteins, Jerseys, and their crosses.

The effect of feed sorting on intakes of fiber and phosphorus in dairy cows.

Effect of Tasco on core body temperature of dairy cows exposed to heat stress.
L. B. Pompeu1, J. E. Williams*2, D. E. Spiers1, R. L. Weaber1, M. R. Ellersieck1, K. M. Sargent1, N. P. Feyerabend1, S. S. Block2, and L. H. Baumgard3, 1University of Arizona, Tucson, 2Archer Daniels Midland, Decatur, IL, 3Iowa State University, Ames.

An update of bulk tank milk quality in California.
N. Silva-del-Rio* and C. Collar1, 1University of California Cooperative Extension, Tulare County, 2University of California Cooperative Extension, Kings County.

Determination of variation in dairy cows response to heat stress using radiotelemetry.

Corn silage management practices on California dairies.
N. Silva-del-Rio*, J. M. Heguy2, and A. Lago3, 1University of California Cooperative Extension, Tulare County, 2University of California Cooperative Extension, Stanislaus and San Joaquin Counties, 3APC, Inc., Ankeny, IA.
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Calves and Heifers

T337  Interaction of breed and quantity of milk replacer on the performance of dairy calves.
C. J. Cobb* and M. A. Ballou, Department of Animal and Food Sciences, Texas Tech University, Lubbock.

T338  Evaluation of mannanoligosaccharides route of administration for dairy calves: Performance and rumen development.
J. T. Silva1,2, L. S. Ferreira3, and C. M. M. Bittar3,4,5, University of Sao Paulo/ESALQ, Piracicaba, SP, Brazil, 2CNPq, Brasilia, DF, Brazil.

T339  Impact of solids level of colostrum replacer formulations on immunoglobulin absorption in calves.
J. M. Campbell*, J. C. Gawthrop1, A. W. Riad1, E. L. Russell2, J. D. Crenshaw1, and J. Q. Quigley3, 1APC, Inc., Ankeny, IA, 2CalfCare, North Manchester, IN.

T340  Effect of yeast β-glucan and antibiotics on growth and intestinal microflora in early-weaning calves.
Y. Zhou, Q. Diao*, Y. Yu, and Q. Yun, Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.

T341  Effects of forage quality traits and access to calf starter on selection between forages in milk-fed calves.
N. B. Kristensen*, M. R. Weisbjerg, and M. Vestergaard, Aarhus University, Tjele, Denmark.

T342  Performance of calves fed an all-milk or enzymatically modified plant protein containing milk replacer with and without a specific amino acid profile.
F. Soberon*, A. M. Severy, and M. E. Van Amburgh, Cornell University, Ithaca, NY.

T343  Measurement of adaptive and innate immune function in calves raised under traditional and accelerated growth regimens.
B. A. Hengst1, L. M. Nemec1, R. R. Rastani2, and T. F. Gressley1, 1University of Delaware, Newark, 2Milk Specialties Global Animal Nutrition, Carpersville, IL.

T344  Effects of hay intake on calves fed high volumes of milk.
M. A. Khan*, D. M. Weary1, D. M. Veira1, and M. A. G. von Keyserlingk1, 1University of British Columbia, Vancouver, BC, Canada, 2Agriculture and Agri-Food Canada, Agassiz BC, Canada.

T345  Influence of milk replacer feeding program on pre- and post-weaning performance and health of dairy calves.

T346  The effect of feeding dairy heifers diets with and without supplemental phosphorus for 18 months on growth, reproductive efficiency and lactation performance.
D. W. Bjelland*, N. M. Esser5, K. A. Weigel5, P. C. Hoffman1, and W. K. Coblentz2, 1University of Wisconsin, Madison, 2USDA-ARS Dairy Forage Research Center, Marshfield, WI.

T347  The effect of Megasphaera elsdenii NCIMB 41125 (Me) on performance of pre-weaned dairy calves.
F. M. Hagg*, C. M. Muya2, and P. H. Henning2, 1MS Biotech, Centurion, South Africa, 2ARC-Irene, Centurion, South Africa.

T348  Influence of nonmedicated additives as alternatives to antibiotics on calf health, growth, and intestinal development.
S. I. Kehoe*, D. B. Carlson1, and E. O. Hardwick1, 1University of Wisconsin-River Falls, River Falls, 2Milk Products, Inc., Chilton, WI.

T349  Pre- and post weaning performance and health of calves fed milk replacers and calf starters with or without yeast supplementation (Nupro) and growth performance from 9 to 25 weeks of age.
H. Chester-Jones*, J. Tricarico1, D. Ziegler1, K. Dawson1, P. Groenewegen1, M. Raeth-Knight1, and G. Golombeski1, 1University of Minnesota Southern Research and Outreach Center, Waseca, 2Alltech Inc., Nicholasville, KY, 3University of Minnesota Southern Research and Outreach Center, St. Paul.

T350  Pre- and post weaning performance and health of calves fed milk replacers and calf starters with or without essential oils.
H. Chester-Jones*, T. Steiner3, M. Watkins3, D. Taylor1, D. Ziegler1, M. Raeth-Knight1, and G. Golombeski1, 1University of Minnesota, Southern Research and Outreach Center, Waseca, 2Biomin Holding GmbH, Herzogenburg, Austria, 3Biomin America Inc., San Antonio, TX, 4University of Minnesota, Southern Research and Outreach Center, St. Paul.

T351  Pre- and post weaning performance and health of calves fed texturized calf starters with different levels of monensin and affect on growth from 9 to 25 weeks of age.
H. Chester-Jones*, B. Ziegler1, D. Schimek1, D. Ziegler1, M. Raeth-Knight1, G. Golombeski1, and J. Linn1, 1University of Minnesota Southern Research and Outreach Center, Waseca, 2Hubbard Feeds Inc., Mankato, MN, 3University of Minnesota Southern Research and Outreach Center, St. Paul.

T352  Effect on feed sorting of adding plain or flavored water to a TMR for heifers.
A. Mereu1, A. Puddu1, I. R. Ipharraguerre*, and A. Bach1,2, 1Lucta SA, Barcelona, Spain, 2IRTA-Ruminant Production, Caldes de Montbui, Spain, 3ICREA, Barcelona, Spain.
**Ruminant Nutrition**

**Dairy: Rumen Metabolism**

**In vitro methane production from increasing levels of corn- or wheat-based dried distillers grains with solubles.**
M. Hünerberg*,1, L. Holtshausen2, T. A. McAllister2, K. A. Beauchemin3, and E. Okine1, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

**The impact of DDGS on presence of ruminal bacteria, ruminal protozoa and yeast during in vitro fermentation.**
E. Castillo-Lopez*, J. L. Miner, and P. J. Kononoff, University of Nebraska-Lincoln, Lincoln.

**Effects of low dose of Saccharomyces cerevisiae on metabolism by ruminal microbes in dual flow continuous culture fermenters.**
M. Ruiz-Moreno*, M. D. Stern1, and J. Sullivan1, 1University of Minnesota, St Paul, MN, 2Lallemand Animal Nutrition - North America, Milwaukee, W1.

**Effects of copper and zinc on in vitro ruminal fermentation of total mixed ration using goat inoculum.**
J. F. Vázquez-Armijo1, R. Rojo*, D. López1, A. Z. M. Salem1, and J. M. González-Alvarado2, 1Universidad Autónoma del Estado de México, Centro Universitario UAM Temascaltepec, Temascaltepec, México, México, 2Universidad Autónoma de Tlaxcala, Facultad de Agrobiología, Tlacuixtlá, Tlaxcala, México.

**Effects of high rates of extruded flaxseed fed to dairy cows on n-3 fatty acids enrichment in milk-fat and the interaction with milk fat content and yield.**
U. Moallem1, Z. Zachut2, L. Lehrer1, L. Livshitz2, and A. Arieli3, 1Agriculture Research Organization, Bet Dagan, Israel, 2Faculty of Agriculture, Hebrew University, Rehovot, Israel.

**Effect of grain source and milling process in ethanol production on nutrient contents and in vitro digestibility of ethanol by-product.**
W. Z. Yang*, T. A. McAllister1, J. J. Mckinnon2, K. A. Beauchemin1, and D. Gibb1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.
T367 In vitro digestion and gas production of two varieties of barley grain sown with different seeding and N fertilization rates in seven sites across Canada.  
W. Z. Yang**, T. A. McAllister†, M. Oba‡, and D. Gibb§, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, †Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

T368 Impact of monensin on rumen microbiota and its stochastic succession.  
P. Kongmun**†, M. Wanapat‡, and Z. Yu§, †Department of Animal Science, Khon Kaen University, Khon Kaen, Thailand, ‡Department of Animal Science, The Ohio State University.

T369 The effect of body condition at calving and supplementation with Saccharomyces cerevisiae on energy status and some reproductive parameters in early lactation dairy cows.  

T370 Effect of supplemented diets with sucrose and/or starch on ruminal peptide-N concentration of Holstein steers.  
M. Danesh Mesgaran*, F. Rezaei, A. R. Heravi Moussavi, and A. Vakili, Dept. Animal Science, Ferdowsi University of Mashhad, P O Box 91775-1163, Mashhad, Iran.

T371 Effect of diets supplemented by sucrose and/or starch on in vivo ruminal Ruminococcus flavefaciens populations of Holstein steers determined by real time-PCR.  
M. Danesh Mesgaran*, F. Rezaei, A. R. Moussavi Heravi, M. Nassiri, and A. Vakili, Dept. Animal Science, Ferdowsi University of Mashhad, P O Box 91775-1163, Mashhad, Iran.

T372 Exogenous proteolytic enzyme increases degradation of dried distillers grains with solubles during in vitro ruminal fermentation.  
J. M. Vera, J. S. Eun*, D. R. ZoBell, and A. J. Young, Utah State University, Logan.

T373 Effects of egunoll addition on milk fatty acid composition of dairy cows fed high- or low-concentrate diets.  
C. Benchara**†, W. Z. Yang‡, H. V. Petit§, and P. Y. Chouinard§, Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, †Department of Animal Science, Khon Kaen University, Khon Kaen, Thailand, ‡Lethbridge Research Centre, AB, Canada, §Université, Département des Sciences Animales, Québec, QC, Canada.

T374 Effects of sugar beet pulp substituted for ground corn on the performance and health of Chinese Holstein dairy cows.  

T375 Garlic botanical reduces methane production in rumen fluid determined in vitro.  

T376 In vitro methane production by ruminal microorganisms is affected by the diet of donor animals.  
M. L. Tejido**†, M. J. Ranilla**‡, C. Saro**‡, and M. D. Carro**‡, †Dpto. Producción Animal, Universidad de León, 24071, León, Spain, ‡Instituto de Ganadería de Montaña (CSIC-ULE), Finca Marzanas s/n, 24346 Grulleros, León, Spain.

T377 Hydrogen sulfide release by ruminal microbes maintained in batch culture.  
M. Ruiz-Moreno**, E. Seitz*, J. Garrett†, and M. D. Stern‡, †University of Minnesota, St. Paul, ‡Quali Tech Inc., Chaska, MN.

T378 Comparison of bacterial diversity in the rumen of sheep and in Rusitec fermenters as assessed by ARISA-PCR.  
M. J. Ranilla**†, M. L. Tejido**‡, C. Saro**‡, and M. D. Carro**‡, †Dpto. Producción Animal, Universidad de León, 24071, León, Spain, ‡Instituto de Ganadería de Montaña (CSIC-ULE), Finca Marzanas s/n, 24346 Grulleros, León, Spain.

T379 Effect of supplemented diet by sucrose or starch on fungi populations in rumen fluid as determined by real-time polymerase chain reaction in Holstein steers.  
A. Vakili*, M. Danesh Mesgaran, H. Jahani Aziz-Abadi, F. Rezaei, and S. Ghovvati, Dept. of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran.

T380 Sodium acetate/acetic acid as a buffer solution to simulate an acidic in vitro rumen environment.  
R. C. Araujo**, A. V. Pires†, and A. L. Abdalla‡, ESALQ, Universidade de São Paulo, Piracicaba, SP, Brazil, †CENA, Universidade de São Paulo, Piracicaba, SP, Brazil.

T381 Milk selenium content and performance of cows supplemented with selenized yeast.  
L. Q. Melo†, L. L. Bittencourt§, S. Siécola Júnior‡, G. S. Dias Júnior‡, N. M. Lopes§, V. A. Silveira§, I. R. Rios§, R. A. N. Pereira**, and M. N. Pereira**, †Empresa de Pesquisa Agropecuária de Minas Gerais, Lavras, Brazil, ‡Univesidade Federal de Lavras, Lavras, Brazil, §Empresa de Pesquisa Agropecuária de Minas Gerais, Lavras, Brazil.

T382 Effect of direct-fed microbial (DFM) products on rumen bacterial communities in Holstein cows at 2 and 6 weeks postcalving.  
E. A. Galbraith**, A. H. Smith†, K. J. Mertz‡, Z. Wu‡, and J. D. Ferguson‡, †Danisco, Waukesha, WI, ‡University of Pennsylvania School of Veterinary Medicine, Kennett Square.

T383 Effects of a rumen protected B vitamin complex supplemented to multiparous Holstein cows on milk production and reproductive performance.  
S. O. Juchem**, P. H. Robinson†, and E. Evans‡, †University of California, Davis, ‡California State University, Fresno, Technical Advisory Services, Bowmanville, ON, Canada.
Effect of feeding live yeast on performance of Holstein cows during summer.

Population dynamics of protozoa in dairy cows fed with Rumensin 200 and tallow during dry and lactating stages.

Construction and analysis of metagenomic fosmid library from rumen microflora of Chinese Holstein dairy cow.

Effects of Saccharomyces cerevisiae and Aspergillus niger (fermentation soluble meal extracted) on productivity of Holstein cows in early lactation.
R. Heydari, M. Dehghan-Banadaky*, K. Rezayazdi, and A. Zali, Department of Animal Science, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Diversity of nitrogen-fixing bacteria in Holstein dairy cow rumen.

Dietary cation-anion difference: Effects on fluid metabolites and health status of transition cows in Karst area.
W. X. Wu*, College of Animal Science, Guizhou University, Guiyang, China.

Effects of subacute ruminal acidosis challenges on lipopolysaccharide endotoxin (LPS) in the rumen, cecum, and feces of dairy cows.

Supplementing Megasphaera elsdenii modulates diurnal rumen fermentation profile in dairy cows.
Q. Zebei*, S. Iqbal1, A. Mazzolari1, S. M. Dunn1, W. Z. Yang2, and B. N. Ametaj*, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Effects of supplementing Megasphaera elsdenii on preprandial rumen fermentation profile in dairy cows.
Q. Zebei*, S. Iqbal1, A. Mazzolari1, S. M. Dunn1, W. Z. Yang2, and B. N. Ametaj*, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Diagnosis of subacute ruminal acidosis (SARA) using the Optum Xceed diabetes monitoring system.
S. Li1, A. Kroeker1, D. O’Gorman1, D. O. Krause1, J. C. Rodriguez1, and J. C. Plaizier1*, 1Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 2Marigot Ltd., Carrigaline, Co. Cork, Ireland.

Simplified procedure for quantifying ruminal microbial populations using real-time PCR.
C. R. Mullins*, L. K. Mamedova, and B. J. Bradford, Kansas State University, Manhattan.

Effects of forage-to-concentrate ratio and rumen fermentation characteristics on apparent ruminal synthesis of niacin and vitamin B6 in lactating dairy cows.
M. Seck*, J. A. Voelker Linton1, M. S. Allen1, P. Y. Chouinard3, and C. L. Girard1, 1Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2Department of Animal Science, Michigan State University, East Lansing, 3Department de sciences animales, Universite Laval, Quebec, Quebec, Canada.

The effect of high inclusion of monensin on lactation performance in dairy cows.

Effects of a microbial fermentation product on milk production and blood metabolites on commercial dairies in eastern Canada.
A. M. Gehman*, J. D. Johnston2, and J. M. Tricarico3, 1Alltech, Brookings, SD, 2Ritchie Feed and Seed, Ottawa, Ontario, Canada.

Effect of Megasphaera elsdenii NCIMB 41125 (Me) on production of lactating dairy cows.

Effect of soluble yeast protein extract and dietary fermentable carbohydrate on fermentation, digestion, and N flow in rumen-simulating fermenters.

Effect of soluble yeast protein extract and culture feed rate on fermentation, digestion, and N flow in rumen-simulating fermenters.
A model to compare the effects of supplemental fat sources on performance and dry matter intake in dairy cows: Effects of fat inclusion level.
E. Block* and E. Evans, 1Church and Dwight Co., Inc., Princeton, NJ, 2Evans Technical Consulting Services, Bowmanville, ON, Canada.

A model to compare the effects of fat sources upon performance and dry matter intake in dairy cows: Effects of trial duration.
E. Block* and E. Evans, 1Church & Dwight Co., Inc., Princeton, NJ, 2Evans Technical Consulting Services, Bowmanville, ON, Canada.

Hourly effective rumen degradation ratio in wheat DDGS, corn DDGS and blend DDGS from bio-ethanol plants: Effect of bio-ethanol plant and DDGS type.
W. G. Nuez-Ortn* and P. Yu, Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada.

Production response of Holstein lactating cows to roasted or electron beam irradiated whole soybean.
A. Akbarian1, G. Ghorbani1, M. Khorvash1, P. Showrang3, M. Dehghan-Banadaky*2, and M. Jafari1, 1Isfahan University of Technology, Isfahan, Iran, 2University of Tehran, Karaj, Tehran, Iran, 3Nuclear Science and Technology Research Institute, Atomic Energy Organization of Iran, Tehran, Iran.

The relationship between nitrogen use efficiency and N isotopic fractionation in dairy cows using milk samples collected in the morning or afternoon.
L. Cheng*2, R. Dewhurst1, J. Larkin2, F. Buckley2, C. Thackaberry2, and G. Edwards1, 1Lincoln University, Christchurch, Canterbury, New Zealand, 2Teagasc, Dundalk, Co. Meath, Ireland, 3Teagasc, Fermoy, Co. Cork, Ireland.

Effect of replacing blood meal with rumen-protected amino acids on milk production and composition in lactating dairy cows.
G. E. Aines*1, G. F. Schroeder2, M. Messman2, and M. J. de Veth1, 1Balchem Corporation, New Hampton, NY, 2Cargill Animal Nutrition, Innovation Campus, Elk River, MN.
Fatty acid composition of milk from Holstein cows fed diet supplemented with fish oil and canola oil from transition period to early lactation.
T. S. vafa, A. Heravi Moussavi*, A. A. Naserian, M. Danesh Mesgaran, and R. Valizadeh, Ferdowsi University of Mashhad, Excellence Center for Animal Science, Faculty of Agriculture, PO Box 91775-1163, Mashhad, Khorasan Razavi, Iran.

Partial replacement of soybean meal by encapsulated urea in commercial dairy herds.
V. A. Silveira1, N. M. Lopes1, R. C. Oliveira1, B. Gonzales1, A. V. Siqueira1, L. P. P. Bier1, M. S. Zoni1, W. Giardini1, R. Almeida2*, and M. N. Pereira1, 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Universidade Federal do Paraná, Curitiba, PR, Brazil, 3Milkonsult, Castro, PR, Brazil, 4Altech do Brasil, Brazil.

The effect of feeding a prototype of ruminally protected lysine (RPL) on production performance and plasma amino acid profile of early lactation dairy cattle.
J. E. Nocek1, M. Miura2, and I. Shinzato*, 1Spruce Haven Farm and Research Center, Auburn, NY, 2Ajinomoto Co., Inc., Tokyo, Japan.

Effect of HMBI supplementation on splanchnic methionine metabolism in postpartum transition cows.
M. Larsen*, K. F. Dalbach, B. M. L. Raun, and N. B. Kristensen, Faculty of Agricultural Sciences, Aarhus University, Tjele, Denmark.

The effect of abomasal infusion of histidine and proline on milk composition and amino acid utilization in high producing lactating dairy cows.
M. W. Holfherr*, D. A. Ross, and M. E. Van Amburgh, Cornell University, Ithaca, NY.

Response of dairy cows to the supplementation of fatty acids from calcium salts of soybean oil or heated soybeans.
G. S. Dias Júnior1, N. M. Lopes1, L. L. Bitencourt1, V. A. Silveira1, G. G. S. Salvati1, N. N. Morais Júnior4, E. O. S. Saliba4, R. A. N. Pereira4, and M. N. Pereira4*, 1Universidade Federal de Lavras, Lavras, Brazil, 4Empresa de Pesquisa Agropecuária de Minas Gerais, Lavras, Brazil, 4Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, 4Instituto Federal de Educação Ciência e Tecnologia do Espírito Santo, Colatina, Brazil.

Variability of estimated protected proteins of feather meals.

Milk fat responses to dietary short- and medium-chain fatty acids in lactating dairy cows.
D Vyas*, B. B. Teter, and R. A. Erdman, University of Maryland, College Park.

Effect of feeding varied levels of crude protein and absorbable methionine on milk yield in lactating dairy cows.

Methionine supplementation to diets varying in rumen undegradable soy protein.
N. N. Morais Júnior3, V. A. Silveira1, N. M. Lopes1, G. S. Dias Júnior1, G. Pessoa Júnior1, G. G. S. Salvati1, C. O. Faria1, R. A. N. Pereira1, N. D. Luchini1, and M. N. Pereira1*, 1Universidade Federal de Lavras, Lavras, Brazil, 4Empresa de Pesquisa Agropecuária de Minas Gerais, Lavras, Brazil, 4Instituto Federal de Educação Ciência e Tecnologia do Espírito Santo, Colatina, Brazil, 4Adisseo, Alpharetta, GA, 5Better Nature Research, Jaci, Brazil.

Effects of level of rumen degradable protein and corn distillers grains in corn silage-based diets on milk production and ruminal fermentation in lactating cows.

Effect of quebracho-chestnut tannin extracts at two dietary crude protein levels on performance and rumen fermentation of dairy cows.
M. J. Aguerre*, M. A. Wattiaux1, M. C. Capozzolo1, P. Lencioni1, and C. Cabral1, 1University of Wisconsin-Madison, Madison, 2Silvateam, Induron S. A, Argentina.

Effect of quebracho-chestnut tannin extracts at two dietary crude protein levels on nitrogen partitioning in lactating dairy cows.
M. J. Aguerre*, M. A. Wattiaux1, M. C. Capozzolo1, P. Lencioni1, and C. Cabral1, 1University of Wisconsin-Madison, Madison, 2Silvateam, Induron S. A, Argentina.

Digestibility of amino acids in rumen undegraded corn silage determined by the modified three-step procedure.
S. M. Fredin*, S. E. Boucher1, D. Sapienza2, N. L. Whitehouse1, and C. G. Schwab1, 1University of New Hampshire, Durham, 2William H. Miner Agricultural Research Institute, Chazy, NY, 3Sapienza Analytica, LLC, Slater, IA.

Evaluation of sampling protocols to estimate ruminal microbial protein production using urinary excretion of purine derivatives.
S. E. Boucher*, H. M. Dann, P. K. Krawczel, H. M. Gauthier, J. D. Darrah, and R. J. Grant, William H. Miner Agricultural Research Institute, Chazy, NY.

Determining the difference in the supply of metabolizable methionine to dairy cows fed four methionine supplements using concentrations of selenium in milk.
J. E. Plank*, W. P. Weiss, and N. R. St-Pierre, The Ohio State University, Columbus.
T432 The relationship between milk urea nitrogen concentrations, diet, and milk production on Northeast dairy farms.
K. M. Kouri*, Poulin Grain, Newport, Vermont.

T433 A critique of dose-response plots that relate changes in content and yield of milk protein to predicted concentrations of lysine in metabolizable protein by the NRC (2001), CPM-Dairy (v. 3. 0. 10), and AMTS Cattle (v. 2. 1. 31) models.
N. Whitehouse*, C. Schwab, D. Luchini, and B. Sloan, University of New Hampshire, Durham, Adisseo, Atlanta, GA.

T434 Fatty acid supplementation to periparturient dairy cows fed diets containing low basal concentrations of fatty acids.

T435 Intake, digestibility and productive performance of dairy cows fed with sunflower meal.

T436 Metabolism of nitrogen compounds in dairy cows fed with sunflower meal.

T437 A critique of dose-response plots that relate changes in content and yield of milk protein to predicted concentrations of methionine in metabolizable protein by the NRC (2001), CPM-Dairy (v. 3. 0. 10), and AMTS Cattle (v. 2. 1. 31) models.
N. Whitehouse*, C. Schwab, D. Luchini, and B. Sloan, University of New Hampshire, Durham, Adisseo, Atlanta, GA.

T438 In situ ruminal degradability of crame, sunflower and soybean grains, and its by-products.

T439 Effects of supplemented high linoleic or linolenic oil in the diet on lipid metabolism by rumen microbes in sheep.

T440 Effects of increasing amounts of high-linolenic perilla fatty acid infused into the duodenum on blood lipids metabolism and their susceptibility to peroxidation in dairy cows.
Q. S. Liu*, J. Q. Wang, D. P. Bu, E. Khas, G. Yang, L. Y. Zhou, P. Sun, and K. L. Li, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, and College of Animal Science and Technology, Yangzhou University, Yangzhou, China.

T441 Effects of feeding ruminally protected lysine, with or without isoleucine, valine and histidine, to lactating dairy cows on productive performance and plasma amino acid profiles.
P. H. Robinson, S. Juchem, N. Swanepoel, and E. Evans, UC Davis, Davis, Meadow Feeds, Roodepoort, South Africa, Essi Evans Technical Advisory Services, Bowmanville, ON, Canada.

T442 Effect of extruded cotton seed and canola seed on the composition of unsaturated fatty acids in plasma, erythrocytes and liver of mahanban male lambs.
A. Akbarian, A. Golian, A. Tahmasbi, M. Hoseini Ghafari, and M. Mirzae, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, Isfahan University of Technology, Isfahan, Iran.

T443 Effects of roasted and electron beam irradiation on ruminal and intestinal disappearance of whole soybean.
A. Akbarian, M. Khovash, G. Ghorbani, M. Dehghan-Banadaki, P. Shaurang, and E. Gasemi, Isfahan University of Technology, Department of Animal Sci., Isfahan, Iran, University of Tehran, Department of Animal Sci., Karaj, Tehran, Iran, Nuclear Science and Technology Research Institute, Atomic Energy Organization of Iran, Tehran, Iran.

T444 Meta-analysis for the prediction of net portal absorption (NPA) of amino acid-N (AAN) and ammonia (NH₃-N) in ruminants.

T445 Effect of tannins in pistachio by-product and urea infusion into the rumen on rumen fermentation and blood metabolites in Iranian Balochi sheep.
H. Ghobadi, A. A. Naserian, R. Valizadeh, and A. M. Tahmasebi, Ferdowsi University of Mashhad, Mashhad, Iran.

T446 The protection of nano-encapsulated conjugated linoleic acid (CLA) from biohydrogenation by rumen bacteria.
S. D. Cho, H. G. Park, H. G. Je, E. G. Kweon, and Y. J. Kim, Department of Food and Biotechnology, Korea University, Chungnam, Korea, Pharmachem, Samjung-dong, Ohjung-gu, Bucheon-city, Kyungungi-do, Korea, Hanwoo Experimental Station, National Livestock research Institute, Gangwon, Korea.
Partial replacement of common bean by-products \( (Phaseolus vulgaris) \) with soybean meal impacts on feed intake and apparent digestibility in growing lambs.

H. P. Mejia\(^1\), A. Z. M. Salem\(^{*,2,3}\), J. E. D. Coronado\(^1\), J. L. Tinoco\(^1\), and F. Avilés\(^1\), \(^1\)Universidad Autónoma del Estado de México, Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México, \(^2\)University of Alexandria, Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt.

The effect of partial replacement of soya bean meal by \( Phaseolus vulgaris \) byproducts on growth performance in Pelibuey growing lambs fed finishing diets.

H. P. Mejia\(^1\), A. Z. M. Salem\(^{*,2,3}\), J. L. Tinoco\(^1\), R. S. Robollar\(^1\), E. J. D. Coronado\(^2\), and F. Avilés\(^1\), \(^1\)Universidad Autónoma del Estado de México, Centro Universitario UAEM-Temascaltepec, Estado de México, C. P. 51300, México, \(^2\)University of Alexandria, Department of Animal Production, Faculty of Agriculture (El-Shatby), Egypt.

Small Ruminant Goat Production

Effect of supplemental grower/finisher ration protein level on growth rate, chevon production and cost of gain of crossbred meat goats grazing Joy Chicory pasture.

M. Lema\(^*\), S. Murray, and B. Barlow, Tennessee State University, Nashville.

Effects of breed and slaughter endpoint on feed intake, growth performance, and carcass traits of purebred Boer and Kiko goat kids.

S. Solaiman\(^*\), B. R. Min\(^1\), N. Gurung\(^1\), J. Behrends\(^2\), E. Taha\(^1\), and C. Hill\(^1\), \(^1\)Tuskegee University, Tuskegee, AL, \(^2\)Mississippi State University, Mississippi State.

Effects of feeding varying levels of fatty acid profile of growing Kiko crossbred intact male goats.

N. K. Gurung\(^*\), A. R. Stone\(^1\), S. G. Solaiman\(^1\), D. L. Rankins Jr\(^1\), K. R. Willian\(^1\), and W. H. McElhenney\(^2\), \(^1\)Tuskegee University, Tuskegee, AL, \(^2\)Auburn University, Auburn, AL.

Effect of cull-chickpeas on carcass characteristics and commercial cuts of feedlot hair sheep.

F. G. Rios\(^*\), H. Bernal-Barragán\(^1\), M. A. Cerrillo-Soto\(^1\), A. Estrada-Angulo\(^1\), E. Gutiérrez-Ornelas\(^1\), A. S. Juárez-Reyes\(^1\), J. F. Obregon\(^1\), and J. J. Portillo-Loera\(^1\), \(^1\)FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, \(^2\)FA-Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, Mexico, \(^3\)FMVZ-Universidad Juárez del Estado de Durango, Durango, Durango, México, \(^4\)Red Internacional de Nutrición y Alimentación en Rumiantes, Culiacán, Sinaloa, México.

Effects of intraduodenally infused soybean small peptides and amino acids on absorption of peptides in the small intestine of dairy goats.

L. Wang\(^2\), S. Li\(^*\), Z. Cao\(^1\), and H. Liu\(^1\), \(^1\)China Agricultural University, Beijing, China, \(^2\)Ningxia University, Yinchuan, China.

Effects of graded intraduodenal soybean small peptide infusion on absorption of small peptides in the small intestine of dairy goats.

L. Wang\(^2\), S. Li\(^*\), Z. Cao\(^1\), and H. Liu\(^1\), \(^1\)China Agricultural University, Beijing, China, \(^2\)Ningxia University, Yinchuan, China.

Effects of shearing on energy use by growing Angora goats.

R. Puchala\(^*\), A. Helal\(^1,2\), A. L. Goetsch\(^1\), and T. Sahlu\(^1\), \(^1\)American Institute for Goat Research, Langston University, Langston, OK, \(^2\)Animal and Poultry Nutrition Department, Desert Research Center, El Matareya, Cairo, Egypt.

Optimum duration of performance testing growing Boer bucks for growth rate, feed intake, and feed efficiency.

W. Hu\(^*\), T. A. Gipson\(^1\), S. P. Hart\(^1\), L. J. Dawson\(^1,2\), A. L. Goetsch\(^1\), and T. Sahlu\(^1\), \(^1\)American Institute for Goat Research, Langston University, Langston, OK, \(^2\)College of Veterinary Medicine, Oklahoma State University, Stillwater.

Feeding behavior of intact yearling hair sheep and meat goat males pen-fed in single- and mixed-species groups.

S. Wildeus\(^*\) and R. A. Stein, Virginia State University, Petersburg.

Feeding glucogenic precursors to dairy goats carrying twins around kidding.

S. Cavini\(^1\), M. Rodriguez-Prado\(^1\), S. Calsamiglia\(^*\), A. Foskolos\(^1\), and M. A. Gomez\(^2\), \(^1\)Universitat Autonoma de Barcelona, Bellaterra, Spain, \(^2\)NUTEGA, Madrid, Spain.

Evaluation of milk serum amyloid A 3 (M–SAA3) protein as a potential mammary health indicator in goats.

A. Domènech\(^*\), A. Gómez–Martín\(^1\), C. De la Fe\(^2\), J. C. Corrales\(^2\), and A. Serrano\(^2\), \(^1\)Ruminant Production, IRTA, Barcelona, Spain, \(^2\)Department of Animal Health, University of Murcia, Murcia, Spain.

Study on the effect of flaxseed and vitamin E supplementation on rumen biohydrogenation by Rumen Simulation Technique (RUSITEC).

H. Sultana\(^*\), M. L. He\(^1\), M. E. R. Dugan\(^2\), and T. A. McAllister\(^1\), \(^1\)Agriculture and Agri-Food Research Centre, Lethbridge, AB, Canada, \(^2\)Agriculture and Agri-Food Research Centre, Lacombe, AB, Canada.
T461 Milk fat synthesis is progressively reduced in dairy goats fed increasing levels of an unprotected conjugated linoleic acid (U-CLA) supplement.

D. Fernandes1, J. Souza1, M. Baldin1, R. Dresch1, E. C. Sandri1, J. H. Bruschi1, F. C. F. Lopes1, M. A. S. Gama1, and D. E. Oliveira**1, 1Santa Catarina State University, Chapecó, Brazil, 2National Dairy Cattle Research Center, Juiz de Fora, Minas Gerais, Brazil.

T462 Requirements of magnesium, potassium and sodium for maintenance and growth of Boer crossbred kids.

M. H. M. R. Fernandes1, K. T. Resende1, L. O. Tedeschi2, J. S. Fernandes Jr.2, and I. A. M. A. Teixeira**1, 1Universidade Estadual Paulista/UNESP and INCT-CA members, Jaboticabal, SP 14870, Brazil, 2Texas A&M University, College Station.

T463 Calcium and phosphorous requirements for maintenance and growth of Boer crossbred kids.

M. H. M. R. Fernandes1, K. T. Resende1, L. O. Tedeschi2, J. S. Fernandes Jr.2, and I. A. M. A. Teixeira**1, 1Universidade Estadual Paulista/UNESP and INCT-CA members, Jaboticabal, SP 14870, Brazil, 2Texas A&M University, College Station.

T464 Blood mineral concentration of adult goats in a subtropical region of southern Mexico during the rainy and dry season.


T465 Effect of copper and zinc on in vitro ruminal fermentation of total mixed ration in goats.

J. F. Vázquez*, R. Rojo**1, D. Lopez1, A. Z. M. Salem2, J. M. González2, D. Colín2, and J. L. Tinoco2, 1Centro Universitario UAEM-Temascaltepec, Temascaltepec, Estado de México, México, 2Facultad de Agrobiología, Universidad Autónoma de Tlaxcala, Ixtacuixtlá, Tlaxcala, México.

T466 Nutritional supplementation does not improve the sexual response of goats managed in Northern Mexico.

F. G. Véliz*1, C. A. Meza-Herrera1, M. A. De Santiago-Miramontes1, R. Rodríguez-Martínez1, and M. Mellado*, 1Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, Mexico, 2Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Aridas, Bermejillo, Durango, México, 3Universidad Autónoma Agraria Antonio Narro, Buenavista, Saltillo, Coahuila, México.

T467 Seasonal reproductive activity of Nubian, Alpine and Criollo female goats exposed to natural photoperiod in a semiarid region of central-north Mexico.

M. T. Rivera1, M. O. Díaz-Gómez1, M. Rincon1, F. J. Escobar1, C. F. Arecigli1, H. G. Gamez1, J. Urrutia**1, and H. Vera-Avila1, 1Universidad Autónoma de Zacatecas, Zacatecas, Mexico, 2Universidad Autónoma de San Luis Potosí, San Luis Potosí, Mexico, 3Instituto Nacional de Investigaciones Forestales, Agriculturas y Pecuarias, San Luis Potosí, Mexico.

T468 Conditions to test electric fence modifications of cattle barb wire fence for goat containment.


T469 Accuracy of calculated distances between consecutive fixes of GPS collars worn by goats.

T. A. Gipson*, G. D. Detweiler, and A. L. Goetsch, American Institute for Goat Research, Langston University, Langston, OK.

T470 Use of biometric measurements to estimate fetal mass in dairy goats.


T471 The relationship of real-time ultrasound body composition measurements, body weight and hip height with body condition score in mature Boer crossbred does.


Teaching/Undergraduate and Graduate Education

Teaching

T472 Relationship between participation in youth equine organizations and collegiate equine activities.

M. Nicodemus*, Mississippi State University, Mississippi State.

T473 Free Web applications for educational purposes.

P. A. Curtis* and M. O. Kloepper, Auburn University, Auburn, AL.

T474 Applications of functional anatomy in farm animals using collaborative learning.

H. G. Kattesh*, M. H. Sims, R. B. Reed, and F. M. Hopkins, University of Tennessee, Knoxville.

T475 Measuring the impact of varied instructional approaches in an introductory animal science course.

B. G. Bolt* and K. D. Layfield, Clemson University, Clemson, SC.
SYMPOSIA AND ORAL SESSIONS

Danisco International Dairy Science Award Lecture
Chair: Connie Sindelar, Danisco Animal Health
501/502

9:30 AM
Introduction

9:40 AM From Metchnikoff to Microencapsulation: Developments in science and technology on the survivability of probiotic bacteria in dairy foods.
K. Kailasapathy, University of Western Sydney, Australia.

Animal Behavior and Well-Being
Sow Housing, Management, and Stress
Chair: Jeremy Marchant-Forde, USDA-ARS
Korbel Ballroom 3c

9:30 AM Productivity and well being of pregnant sows in loose housing is affected by floor space allowance and dietary fiber content.
A. R. Hanson*, A. E. DeDecker, J. L. Salak-Johnson, P. M. Walker, and J. P. Holt, 1Illinois State University, Normal, 2University of Illinois, Urbana.

9:45 AM Effects of fiber and floor space allowance on group kept dry sow well-being.
A. E. DeDecker*, A. R. Hanson, P. M. Walker, and J. L. Salak-Johnson, 1University of Illinois, Urbana, 2Illinois State University, Normal.

10:00 AM Effect of alternative individual and group housing on dry sow performance and physiology.
A. E. DeDecker*, A. R. Hanson, P. M. Walker, and J. L. Salak-Johnson, 1University of Illinois, Urbana, 2Illinois State University, Normal.

10:15 AM Effect of alternative accommodations on sow behavior during gestation.
A. M. Visconti*, A. E. DeDecker, A. R. Hanson, P. M. Walker, and J. L. Salak-Johnson, 1University of Illinois, Urbana, 2Illinois State University, Normal.

10:30 AM Effects of alternative housing systems on the well-being of gestating sows.
A. E. DeDecker* and J. L. Salak-Johnson, University of Illinois, Urbana.

10:45 AM The effect of a repeated prenatal stressor and low-dose Ketamine on the anxiety and social behavior of pigs.
B. L. Davis*, M. A. Sutherland, 1Texas Tech University, Lubbock, 2Ruakura Research Centre, AgResearch, Hamilton, New Zealand.

11:00 AM Heart rate variability—A tool to differentiate positive and negative affective states in pigs?
R. Poletto*, R. M. Marchant-Forde, I. N. Marchant-Forde, J. L. Rault, D. F. Hogan, and D. C. Lay Jr., 1USDA-ARS-Livestock Behavior Research Unit, West Lafayette, IN, 2Department of Animal Sciences, Purdue University, West Lafayette, IN, 3Veterinary Clinical Sciences, Purdue University, West Lafayette, IN.

11:15 AM A combination of head/heart electric stunning is more effective than the head-only method in pigs.
K. D. Vogel*, G. Badtram, J. R. Claus, T. Grandin, S. Turpin, R. E. Weyker, and E. Voogd, 1Department of Animal Sciences, Colorado State University, Fort Collins, 2Wisconsin Department of Agriculture, Trade, and Consumer Protection, Division of Food Safety, Madison, 3Department of Animal Sciences, University of Wisconsin-Madison, 4Voogd Consulting, Inc., West Chicago, IL.

11:30 AM Effects of pen size on the stress response of market weight pigs during loading and unloading.

11:45 AM Effects of vehicle design on blood stress indicators and meat quality in pigs of three genotypes for two different travel distances.
A. Vanelli Weschenfelder*, S. Torrey, N. Devillers, L. Saucier, and L. Faucitano, 1Université Laval, Sainte-Foy, Québec, Canada, 2Agriculture and Agri-Food Canada, Lennoxville, Québec, Canada, 3University of Guelph, Guelph, ON, Canada.

12:00 PM Effects of pasture versus stall housing on cortisol and DHEA concentrations in young quarter horses.
S. M. Garey*, T. H. Friend, L. R. Berghman, A. L. Adams, and C. L. Terrill, Texas A&M University, College Station.
12:15 PM 420 Use of infrared thermography to measure inflammation associated with castration and anti-inflammatory drugs. L. A. González*, K. S. Schwartzkopf-Genswein1, E. Fierheller1, E. Janzen2, N. Caulkett3, and T. A. McAllister2, 1University of Manitoba, Winnipeg, Manitoba, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 3University of Calgary, Calgary, Alberta, Canada.

12:30 PM 421 Influence of cattle temperament on stress hormones and IgG concentrations in Angus-cross calves. R. C. Vann*, N. C. Burdick2, J. G. Lyons2, T. H. Welsh, Jr.3, and R. D. Randel3, 1MAFES-Brown Loam Research Station, Raymond, MS, 2Texas AgriLife Research, College Station, 3Texas AgriLife Research, Overton.

Animal Health Symposium
Accounting for Diseased Animals in Research Trials
(Outliers, Treatments, Interactions)/Disease Induction by Treatment?
Chair: Isis K. Mullarky, Virginia Tech
Sponsor: Elanco Animal Health
503/504

9:30 AM
Introduction

9:35 AM 422 Factors influencing onset of disease and subsequent effects on feedlot performance. R. M. Enns*, R. L. Weaber2, H. Van Campen1, and G. H. Loneragan1, 1Colorado State University, Fort Collins, 2University of Missouri, Columbia, 3West Texas A&M University, Canyon.

10:05 AM 423 Reporting standards for randomized controlled trials in cattle: Improving the quality of research. I. A. Gardner*, A. M. O’Connor2, J. M. Sargeant3, J. S. Dickson4, and M. E. Torrence5, 1University of California, Davis, 2Iowa State University, Ames, 3University of Guelph, Guelph, Ontario, Canada, 4Iowa State University, Ames, 5USDA-ARS, Beltsville, MD.

10:35 AM 424 Accounting for diseased animals in research trials. G. D. Snowder*, National Center for Foreign Animal and Zoonotic Disease Defense, College Station, TX.

ARPAS-Ruminant Nutrition Joint Symposium
Nutrition Models – Where Are We Going in the Next Decade?
Chair: Joanne Knapp, Fox Hollow Consulting, LLC
Sponsor: EAAP
301/302

9:30 AM 425 The role of models in animal nutrition: Research and field applications. J. A. Metcalf* and N. S. Ferguson, Nutreco Canada Inc., Guelph, Ontario, Canada.


10:30 AM 427 Tackling the variable efficiencies in post-absorptive amino acid utilization. M. D. Hanigan*1 and E. C. Titgemeyer2, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Kansas State University, Manhattan.

11:10 AM 428 VFA production and absorption: modeling the impacts on energy availability. A. Bannink*, J. France1, J. L. Ellis1, and J. Dijkstra3, 1Animal Sciences Group, Wageningen UR, Lelystad, the Netherlands, 2Centre for Nutrition Modelling, University of Guelph, Guelph, Ontario, Canada, 3Wageningen University, Wageningen, the Netherlands.

11:50 AM 429 Predicting dry matter intake responses: modeling the influence of cattle management. R. J. Grant*, T. P. Tylutki2, and P. D. Krawczel3, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2AMTS LLC, Cortland, NY.
Breeding and Genetics
Crossbreeding
Chair: Katie Olsen, USDA-ARS Animal Improvement Programs Laboratory
403/404

9:30 AM 430 Application of a crossbred model reveals additional genetic variation in reproduction traits of commercial females.
S. Bloemhof1,2, E. F. Knol1, A. Kauste1, and I. Misztal1, 1IPG, Institute for Pig Genetics B. V., Beuningen, the Netherlands, 2Animal Breeding and Genomics Centre, Wageningen University, Wageningen, the Netherlands.

9:45 AM 431 Genetics-nutrition interactions influencing wool spinning fineness in Australian crossbred sheep.
A. E. O. Malau-Aduli* and B. Holman, School of Agricultural Science/TIAR, University of Tasmania, Hobart, Tasmania 7001, Australia.

10:00 AM 432 Effects of index selection and sire breed on crossbred lamb growth and finishing.
G. C. Márquez*, W. Haresign2, M. H. Davies3, R. Rohe4, L. Bünger4, G. Simm4, and R. M. Lewis5, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Aberystwyth University, Wales, UK, 3ADAS Rosemaund, Preston Wynne, UK, 4Scottish Agricultural College, Edinburgh, UK.

10:15 AM 433 Inclusion of the inbreeding coefficient into models for genetic evaluation of dairy cattle.

10:30 AM 434 Jersey-sired and Montbeliara-sired crossbred heifers compared to pure Holstein heifers for survival and fertility from birth to first parturition.

10:45 AM 435 Productivity over five lactations of Normande, Montbeliarde, and Scandinavian Red crossbreds compared to pure Holsteins in commercial dairies in California.
B. J. Heins* and L. B. Hansen, University of Minnesota, St. Paul.

11:00 AM 436 Death rates, survival rates to fifth lactation, and profitability of Normande, Montbeliarde, and Scandinavian Red crossbreds compared to pure Holsteins.
B. J. Heins* and L. B. Hansen, University of Minnesota, St. Paul.

11:15 AM 437 Production, reproduction, health and growth traits in backcross Holstein × Jersey and their Holstein contemporaries.

11:30 AM 438 Multibreed genomic evaluation of dairy cattle.
K. M. Olson* and P. M. VanRaden, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

Food Safety
Poultry Aspects
Chair: Michael Hume, USDA, ARS, SPARC
Korbel Ballroom 4abc

9:30 AM 439 Hide and pen floor contamination and transmission of Escherichia coli O157:H7 among feedlot steers.
K. Stanford*, T. P. Stephens, and T. A. McAllister, 1Alberta Agriculture and Rural Development, Lethbridge, Alberta Canada, 2Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.

9:45 AM 440 Feed supplementation with caprylic acid reduces Campylobacter colonization in market-aged broiler chickens without altering cecal microbial populations.

10:00 AM 441 Evaluating the prevalence and distribution of Campylobacter in newly constructed broiler houses.
K. N. Eberle*, J. L. Purswell, J. D. Davis, C. D. McDaniel, and A. S. Kiess, 1Mississippi State University, Mississippi State, 2USDA-ARS Poultry Research Unit, Mississippi State.
10:15 AM 442  Colonization of marker and field strains of *Salmonella* Enteritidis and Typhimurium in antibiotic pretreated and non-pretreated laying hens.
J. F. Hannah*, 1, J. L. Wilson2, N. A. Cox3, L. J. Richardson4, J. A. Cason5, and R. J. Buhr6, 1University of Georgia, Department of Poultry Science, Athens, GA, 2USDA, ARS, Richard Russell Research Center, Athens, GA.

10:30 AM 443  Evaluation of Campylobacter challenge route (in ovo vs. crop) and feed additives to reduce caecal Campylobacter in broilers.
T. A. Scott*, J. E. de Oliveira, and E. Hangoo, Provimil Feed Solutions, Sint-Steven-Woluwe, Belgium.

10:45 AM 444  The efficacy of the natural plant extracts, thymol and carvacrol, against *Campylobacter* colonization in broiler chickens.

11:00 AM 445  Probability of identifying different *Salmonella* serotypes in poultry samples.
J. A. Cason*, N. A. Cox, R. J. Buhr, D. V. Bourassa, and L. J. Richardson, Russell Research Center, USDA/ARS, Athens, GA.

11:15 AM 446  The effect of electrostatic polarization ultra violet light filters on *Enterobacteriaceae* and *Salmonella* spp. bacteria in a broiler processing plant hang room.

11:30 AM 447  Role of lauric acid-potassium hydroxide concentration on bacterial contamination of spray washed broiler carcasses.
A. Hinton Jr.*, J. Cason, R. Buhr, and K. Liljebjelke, Russell Research Center, Athens, GA.

11:45 AM 448  Antimicrobial effect of sodium metasilicate on *Salmonella enterica* serovar Typhimurium and psychrotrophs in ready to cook skin-on chicken breast meat stored at 4 ± 1°C.

12:00 PM 449  Antimicrobial effect of sodium metasilicate marinade on *Salmonella enterica* serovar Typhimurium and psychrotrophs in ready to cook skinless and boneless chicken breast meat stored at 4 ± 1°C.

12:15 PM 450  Aviplus treatment improves growth efficiency in broilers and swine but does not affect intestinal populations of experimentally inoculated *Salmonella*.
T. R. Callaway*, E. Grilli1, T. S. Edrington1, N. Krueger1, R. Anderson1, D. W. Pitta1, W. E. Pinchak1, and A. Piva1, 1USDA/ARS, Food and Feed Safety Research Unit, College Station, TX, 2University of Bologna, Bologna, Italy, 3Texas A&M University Agrilife Research Station, Vernon.

12:30 PM 451  Aviplus treatment reduces *E. coli* and *Salmonella* populations in pure and mixed ruminal culture fermentations.
T. R. Callaway*, E. Grilli1, and A. Piva1, 1USDA/ARS, Food and Feed Safety Research Unit, College Station, TX, 2University of Bologna, Bologna, Italy.

Forages and Pastures
Harvested Forages and Forage Quality
Chair: Limin Kung Jr., University of Delaware
Korbel Ballroom 1cd

9:30 AM 452  Lamb and cow performance when fed corn silage that has reduced ferulate cross linking.

9:45 AM 453  Impact of brown midrib trait and seeding rate on chemical composition and in vitro gas production of pearl millet silage.
F. Hassanat*, A. Mustafa2, P. Seguin3, and R. Berthiaume4, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Department of Animal Science, McGill University, Montreal, QC, Canada, 3Department of Plant Science, McGill University, Montreal, QC, Canada.

10:00 AM 454  Exogenous fibrolytic enzyme or anhydrous ammonia effects on digestion kinetics of steers fed bermudagrass harvested at two regrowth intervals.
10:15 AM 455 Effect of chopping or cubing on apparent digestibility of hay when fed to steers.
R. Willcutt*, B. J. Rude1, and J. Davis1, 1Animal & Dairy Sciences, Mississippi State University, Starkville, 1Agricultural & Biological Engineering, Mississippi State University, Starkville.

10:30 AM 456 Effect of cutting time and conditioning method on cattle preference for trefoil–grass hay.
R. Berthiaume*, A. F. Brito1, and C. Lafreniere1, 1Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada., 1University of New Hampshire, Durham.

10:45 AM 457 Acceptability of Teff hay by horses.
S. McCown*, M. Brummer, J. Earing, S. Hayes, and L. Lawrence, University of Kentucky, Lexington.

11:00 AM 458 Nutritive value of North American grasses during establishment.
A. E. Lee*,1,4, J. P. Muir3, B. D. Lambert1,3, J. L. Reilley2, and T. R. Whitney4, 1Tarleton State Univ., Stephenville, TX, 2Kika de La Garza PMC, Kingsville, TX, 3TX AgriLife Research, Stephenville, 4TX AgriLife Research, San Angelo.

11:30 AM 459 Effects of different manure sources and urea on chemical composition of three tropical pasture grasses.
O. M. Arigbede*,1,2, U. Y. Anele1,2, K. -H. Südekum2, J. A. Olanite1, A. O. Oni1, P. A. Dele1, and J. O. Bolaji1, 1University of Agriculture, Abeokuta, Nigeria, 2University of Bonn, Germany.

11:45 AM 460 In vitro ruminal fermentation characteristics of anthocyanidin accumulating Lc-alfalfa.
A. Jonker*,1,2, M. Gruber2, Y. Wang3, and P. Yu1, 1Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, 2Saskatoon Research Centre, Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, 3Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

12:00 PM 461 Revisiting heat damaged-protein and ruminal degradation kinetics in heated hays.
W. K. Coblentz*,1, P. C. Hoff2, and N. P. Martin3, 1US Dairy Forage Research Center, Marshfield, WI, 2University of Wisconsin, Madison, 3US Dairy Forage Research Center, Madison, WI.

12:15 PM 462 Effects of spontaneous heating on estimates of energy from alfalfa-orchardgrass hays stored in large-round bales.
W. K. Coblentz*1 and P. C. Hoff2, 1US Dairy Forage Research Center, Marshfield, WI, 2University of Wisconsin, Madison.

Immunology and Pathology Symposium
Immunity, Nutrition, Genomics, and Gut Microbiota
Chair: Hyun Lillehoj, USDA

9:30 AM 465 Antibiotics disrupt the microbiota-host-pathogen interaction.
B. Willing*, University of British Columbia, Vancouver, BC, Canada.

10:00 AM 464 Role of antibiotics on gut microbiota and incidence of gangrenous dermatitis in commercial broilers.
G. Ritter*,1, G. Siragus2, S. Dunham3, and A. Neumann2, 1Mountaire Farms Inc., Millsboro, DE, 2Danisco, Waukesha, WI.

10:30 AM 466 Nutrigenomics: Understanding how nutrients influence host innate immunity and modulate host-pathogen interaction.

11:00 AM 463 Direct-fed microbial supplementation alters hosts’ immune response and repartitions energy to the immune system.
M. D. Koci* and W. J. Croom, North Carolina State University, Raleigh.
Lactation Biology 1
Chair: Darryl Hadsell, Baylor College of Medicine, Houston, TX
304

9:30 AM  467  The effect of milk accumulation on gene expression in bovine mammary gland.
  E. H. Wall*, J. P. Bond, and T. B. McFadden, 1, 2Department of Animal Science, University of Vermont, Burlington,
  3Vermont Genetics Network Bioinformatics Core, University of Vermont, Burlington.

9:45 AM  468  Expression of ER stress pathways genes in bovine mammary tissue during the lactation cycle.
  G. Invernizzi*, M. Bionaz, G. Savoini, and J. Loor, 1University of Illinois, Urbana-Champaign, 2University of
  Milan, Milan, Italy.

10:00 AM  469  Effect of dexamethasone and age at induction on milk yields of heifers induced into lactation.
  University, University Park, 2Oklahoma State University, Stillwater.

10:15 AM  470  Effect of intramammary infusions of fluoxetine (FLX) and 5-hydroxytryptophan (5-HTP) on milk secretion rate and
  composition in lactating Holstein cows at dry-off.
  R. J. Collier*, J. L. Collier, L. L. Hernandez, and N. D. Horseman, 1University of Arizona, Tucson, 2University of
  Cincinnati, Cincinnati, OH, 3Amelgo, Covington, KY.

10:30 AM  471  Acute fluoxetine administration accelerates mouse mammary gland involution.
  L. L. Hernandez*, R. J. Collier, and N. D. Horseman, 1University of Cincinnati, Cincinnati, OH, 2University of
  Arizona, Tucson, 3Amelgo.

11:00 AM  472  Effects of early ovariectomy on caprine mammary gland parenchyma during prepuberty.
  L. Finot, Y. Yart, and F. Dessauge, 1INRA UMR 1080 Dairy Production, 35590, Saint Gilles, France,
  2Agrocampus UMR 1080 Dairy Production, 35000, Rennes, France.

11:15 AM  473  Role of miR-15a in the mammary gland and mammary epithelial cells of dairy cows.
  H. M. Li, C. M. Wang, and Q. Z. Li*, Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural
  University, Harbin, China.

11:30 AM  474  Expression of let-7g in development, lactation and involution of the murine mammary gland.
  Y. Li, L. Tian, C. M. Wang, and Q. Z. Li*, Key Laboratory of Dairy Science of Education Ministry, Northeast
  Agricultural University, Harbin, China.

11:45 AM  475  Effect of heat stress during the dry period on mammary gland development of dairy cattle.

12:00 PM  476  Characterization of bovine glucose transporter 1 kinetics and substrate specificities in Xenopus laevis oocytes.
  P. A. Bentley, Y. Misra, A. D. Morielli, and F. -Q. Zhao*, 1Lactation and Mammary Gland Biology Group,
  Department of Animal Science, University of Vermont, Burlington, 2Department of Pharmacology, College of
  Medicine, University of Vermont, Burlington.

Meat Science and Muscle Biology Symposium
How Does Pre- and Postnatal Muscle Development Affect Meat Composition, Quality, and Value?
Chair: Giuseppe Bee, Agroscope Liebefeld Posieux
Sponsors: ASAS Foundation, EAAP
Korbel Ballroom 1ef

9:30 AM  477  Coordinating myogenesis and angiogenesis: A novel role for the satellite cell in skeletal muscle growth.

10:15 AM  478  The energy metabolism impacts that come along with muscle fiber type and its effect on postmortem
  metabolism.
  T. M. Scheffler, J. M. Scheffler, S. Park, A. L. Grant, and D. E. Gerrard*, Department of Animal and Poultry
  Sciences, Virginia Tech, Blacksburg.

11:00 AM  479  How growth and body composition can affect the quality of poultry meat?
  C. Berri*, E. Le Bihan-Duval, and M. J. Duclos, INRA, UR083 Recherches Avicoles, Nouzilly, France.

Graduate Student Paper Competition
National ADSA Production MS Oral
Chair: Brian J. Bequette, University of Maryland
507


9:45 AM 482 Effect of prostaglandin F2α on growth of *Staphylococcus aureus* associated with bovine mastitis. C. A. Autran*, A. Ahmadzadeh*, B. Shafi, M. A. McGuire*, and J. C. Dalton, 1University of Idaho, Moscow, 2University of Idaho, Caldwell R & E.

10:00 AM 483 Effects of partial replacement of corn grain with high fiber byproducts in calf starter on growth and ruminal pH in dairy calves during weaning transition. A. H. Laarman* and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

10:15 AM 484 Effect of a pre-synchronization injection of prostaglandin F2α during the voluntary waiting period on dairy cattle. K. D. Baldock*, M. E. Wilson*, and D. L. Smith, 1Eastern New Mexico University, Portales, 2West Virginia University, Morgantown.

10:30 AM 485 Effects of feeding brown midrib corn silage and dried distillers grains with solubles on performance of lactating dairy cows. H. A. Ramirez Ramirez*, P. J. Kononoff*, and K. Nestor, 1University of Nebraska-Lincoln, 2Dow AgroSciences LLC, Wooster, OH.

10:45 AM 486 Effects of equine chorionic gonadotropin administration during the synchronization protocol on luteal volume, progesterone concentration and embryo survival in embryo recipient lactating Holstein cows. A. G. Kenyon*, G. Lopes Jr., L. G. D. Mendonca, J. R. Lima, R. G. S. Bruno, and R. C. Chebel, 1Veterinary Medicine Teaching and Research Center, University of California Davis, Tulare, 2Department of Veterinary Population Medicine, University of Minnesota, St Paul.


Nonruminant Nutrition
Amino Acids 2
Chair: Rob Payne, Evonik, Degussa Corp.
Sponsor: Evonik, Degussa Corp.
Korbel Ballroom 4def

9:30 AM 489 Impact of sulfur amino acid intake and immune system stimulation on pathways of sulfur amino acid metabolism at transcriptional level in growing pigs. A. Rakshandeh*, A. Holliss, N. A. Karrow, and C. F. M. de Lange, 1University of Guelph, Department of Animal and Poultry Science, 2University of Guelph, Advance Analysis Centre, Guelph, Ontario, Canada.

9:45 AM 490 The effect of feeding heavy and medium weight nursery pigs increased levels of amino acids on pig performance. J. L. Piep* and C. E. Hostetler, South Dakota State University, Brookings.

10:00 AM 491 Amino acid digestibility in heated soybean meal fed to growing pigs. J. C. González*, B. G. Kim, A. Lemme, and H. H. Stein, 1National University of Colombia, Bogota, Condinamarca, Colombia, 2University of Illinois, Urbana, 3Evonik Degussa GmbH, Rodenbacher Chaussee, Hanau, Germany.
10:15 AM 492  
**Effects of balanced protein level on growth performance and carcass composition of growing-finishing pigs.**
N. W. Shelton¹, R. D. Goodband², M. D. Tokach³, S. S. Dritz⁴, J. L. Nelssen⁵, J. M. DeRouchey⁶, M. S. Redshaw⁷, and J. K. Htoo*², ¹Kansas State University, Manhattan, ²Evonik Degussa GmbH, Hanau, Germany.

10:30 AM 493  
**Effect of tryptophan level on growth performance in 10- to 50-kg pigs.**
D. Renaudeau*¹, M. Giorgi¹, C. Anais¹, and Y. Primot¹, ¹Institut National de la Recherche Agronomique, UR143, Petit-Bourg, French West Indies, France, ²Ajinomoto Eurolysine, Paris, France.

10:45 AM 494  
**Estimation of optimum tryptophan to lysine ratio in wheat-barley or corn-soybean meal based diets for 15- to 35-kg pigs.**
J. K. Htoo*¹, M. Naatjes¹, K. H. Tolle¹, and A. Susenbeth¹, ¹Evonik Degussa GmbH, Hanau, Germany, ²Christian-Albrechts University, Kiel, Germany, ³Training and Research Center Putterkamp, Blekendorf, Germany.

11:00 AM  
Break

11:15 AM 495  
**Effect of lysine level and curve feeding on the performance and carcass characteristics of grow-finish pigs.**
K. L. Herkelman*¹, S. Kelley¹, S. Bailey¹, and E. Engle¹, ¹Wenger’s Feed Mill, Inc., Rheems, PA, ²Country View Family Farms, Lancaster, PA, ³Hatfield Quality Meats, Hatfield, PA.

11:30 AM 496  
**Effects of ileal sample collection strategies on ileal digestibility of CP and the concentration of chromium in ileal digesta.**
B. G. Kim*¹,² and H. H. Stein¹, ¹University of Illinois, Urbana, ²Konkuk University, Seoul, Korea.

11:45 AM 497  
**Ileal amino acids digestibility of raw and heat-processed pea protein concentrates in broilers.**
M. Frikha¹, D. G. Valencia*¹,², M. P. Serrano¹, H. M. Safaa¹, R. Lázaro¹, and G. G. Mateos¹, ¹Universidad Politécnica de Madrid, Madrid, Spain, ²Nutral S. A., Madrid, Spain, ³Faculty of Agriculture, Cairo University, 12613 Giza, Egypt.

12:00 PM 498  
**Identification of lysine transport systems affiliated with differences in chick gain when fed a lysine limiting diet.**
M. A. Raymond*¹ and B. D. Humphrey, California Polytechnic State University, San Luis Obispo.

12:15 PM 499  
**Valine and isoleucine as potential limiting amino acids in broiler diets based on corn, soybean meal, and meat and bone meal.**
L. Mejía*¹, W. A. Dozier III¹, R. E. Loar II¹, M. T. Kidd¹, P. B. Tillman¹, and A. Corzo¹, ¹Mississippi State University, Mississippi State, ²Auburn University, Auburn, AL, ³University of Arkansas, Fayetteville, ⁴Ajinomoto Heartland LLC, Chicago, IL.

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**Nonruminant Nutrition  
Feed Ingredients**

Chair: Sung Woo Kim, North Carolina State University  
Korbel Ballroom 3b

9:30 AM 500  
**Effect of different sorghum varieties on early chick growth.**
C. M. Rude*¹, M. A. Barrios¹, R. Rierston¹, S. Bean¹, and R. S. Beyer¹, ¹Kansas State University, Manhattan, ²ARS, USDA, Grain Marketing and Product Research Center, Manhattan, KS.

9:45 AM 501  
**Dietary hydrolyzed yeast extract enhances early innate immune function in broiler chicks.**
J. L. Saunders-Blades*⁴, K. L. Nadeau, and D. R. Korver, University of Alberta, Edmonton, Canada.

10:00 AM 502  
**Influence of pea hulls inclusion in the diet on digestive traits and nutrient retention in broilers.**
E. Jiménez-Moreno*¹, J. M. González-Alvarado¹, S. Chamorro¹, C. Centeno¹, R. Lázaro¹, and G. G. Mateos¹, ¹Universidad Politécnica de Madrid, Madrid, Spain, ²Universidad de Tlaxcala, Mexico, ³Consejo Superior de Investigaciones Científicas, Madrid, Spain.

10:15 AM 503  
**Dietary camelina meal for broiler chickens. 2. Thigh meat fatty acid profile and sensory evaluation.**
P. H. Patterson*², R. M. Hulet¹, T. L. Cravener¹, A. Y. Pekel², and J. E. Hayes¹, ¹The Pennsylvania State University, University Park, ²Istanbul University, Turkey.

10:30 AM 504  
**Effect of feeding mexican sunflower leaf (Tithonia diversifolia, hemsley A gray) on performance of broiler chicks.**
A. H. Ekeochaa*¹, A. A. Mako¹, T. J. Williams¹, and A. Aderiye¹, ¹Department of Animal Science University of Ibadan, Ibadan, Oyo State, Nigeria, ²Department of Agricultural Production and Management Sciences, Tai Solarin University of Education, Ijagun Ijebu-Ode, Ogun State, Nigeria, ³Department of Animal Physiology, University of Agriculture, Abeokuta, Ogun State, Nigeria.
Effect of feeding mexican sunflower leaf (Tithonia diversifolia, hemsley a gray) on carcass characteristics of broilers.
A. H. Ekeocha*, 1; O. A. Adu2; K. D. Afolabi3; and E. J. Ubah*, 1
University of Ibadan, Ibadan, Oyo State - Nigeria, 1Department of Animal Science University of Ibadan, Ibadan, Oyo State, Nigeria, 2Department of Animal Production and Health, Federal University of Technology, Akure, Nigeria, 3Department of Animal Production and Health, Federal University of Technology, Akure, Nigeria, 4Department of Animal Science, Wageningen University, Wageningen, the Netherlands.

Break

A 42-day floor pen evaluation of broiler chickens fed standard energy and low energy diets supplemented with a blend of carvacrol, cinnamaldehyde and capsicum oleoresin with or without bacitracin.
M. Sims*, 1; D. Bravo2; and A. Vikari2
1University of Alberta, Canada, 2University of Manitoba, Canada.

Effects of mung bean waste inclusion on mash diet characteristic, growth performance and nutrient digestibility in pigs.
P. Rungcharoen*, 1; N. Amornthewaphat, Y. Ruangpanit, S. Rattanatubtimthong, and S. Attamangkune, Kasetsart University, Bangkok, Thailand.

Short-term feeding of genetically modified Bt maize (MON810) to weanling pigs: Effects on gut microbiota, intestinal morphology and immune status.
M. C. Walsh*, 1; S. G. Buzoianu*, 2; G. E. Gardiner3; M. C. Rea2; R. P. Ross2; and P. G. Lawlor1
1Virginia Diversified Research Corporation, Harrisonburg, 2Pancosma, Geneva, Switzerland.

Effects of dietary oat hulls and sugar beet pulp on productive performance and nutrient digestibility of broilers from 1 to 42 d of age.
J. M. Gonzalez-Alvarad1; E. Jiménez-Moreno2; F. D. Royón2; R. Lázaro2; and G. G. Mateos*, 1
1Universidad de Tlaxcala, México, 2Universidad Politecnica de Madrid, Madrid, Spain.

Influence of origin on nutritional and quality parameters of soybean meal.
G. G. Mateos*, 1; M. P. Serrano1; S. Sueiro2; M. González2; M. Hermida2; P. G. Rebollar1; and R. Lázaro1, 1Universidad Politécnica de Madrid, Madrid, Spain, 2Laboratorio de Mouriscade, Pontevedra, Spain.

Lactose in diet influences the degradation of mixed linked β(1-3;1-4)-D-glucan in the small intestine of pigs.
K. E. Bach Knudsen*, Aarhus University, Faculty of Agricultural Sciences, Department of Animal Health and Bioscience, Tjele, Denmark.

Nonruminant Nutrition
Mineral Nutrition
Chair: Tom Crenshaw, University of Wisconsin
Korbel Ballroom 3a

Effects of dietary calcium formate inclusion on broiler growth performance, bone ash, and tibia breaking strength.
S. Pohl*, 1; D. Caldwell, J. Lee, J. Coppedge, K. Stringfellow, S. Dunn-Horrocks, K. Jessen, and M. Farnell, Texas A&M University, College Station.

Broiler breeder age and dietary Cu, Zn and Mn source affect chick bone development at hatch.
C. A. Torres* and D. R. Korver, University of Alberta, Edmonton, AB, Canada.

Use of the broiler (Gallus gallus) as an in vivo screening tool for Fe bioavailability in maize-based diets.
E. Tako*, 1; M. Lung’aho3; L. V. Kochian1; Q. A. Hoekenga2; and R. P. Glahn1, 1Cornell University, Ithaca, NY; 2Purdue University, West Lafayette, IN.

Relationship between expression of sodium-dependent phosphate transporter type II-b gene and phosphorus utilization in broilers.
O. A. Olukosi*, 1; S. A. Adedokun, K. M. Ajuwon, and O. Adeola, Purdue University, West Lafayette, IN.

Effects of HMTBA chelated zinc, manganese and copper on performance, mineral status and immunity of broilers.
Effect of organic zinc supplementation on growth performance and carcass quality of broilers.

Effect of dietary copper source and level on GI copper levels and ileal E. coli survival in broiler chicks.
K. C. Klasing* and A. Naziripour, University of California, Davis.

Effects of dietary iron and age on cellular copper metabolism in liver of weanling pigs.

Effect of level and source of dietary copper on copper metabolism in the small intestine of weanling pigs.

Dietary calcium and phosphorous and organic and inorganic trace minerals on nursery pig growth performance.
J. S. Jolliff* and D. C. Mahan, The Ohio State University, Columbus.

Effect of organic and inorganic trace mineral source and preslaughter dele- tiation on tissue mineral content of pigs.
Y. L. Ma*, M. D. Lindemann, G. L. Cromwell, and G. Rentfrow, University of Kentucky, Lexington.

Physiology and Endocrinology
Animal Physiology
Chair: Ricardo Chebel, University of Minnesota
505/506

The “immunocrit,” a simple measure of passive transfer, is a useful predictor of nursing ability and preweaning mortality of piglets.

Influence of temperament on stress hormone and IgG concentrations in Brahman calves.
N. C. Burdick*, D. A. Neuendorff, R. C. Vann, J G. Lyons, T. H. Welsh, Jr., and R. D. Randel, Texas AgriLife Research, College Station, Texas AgriLife Research, Overton, MAFES, Mississippi State University, Raymond.

Effect of cytochrome P450 and aldo-keto reductase inhibitors on progesterone decay in primary bovine hepatic cell cultures.
C. O. Lemley* and M. E. Wilson, West Virginia University, Morgantown.

Residual feed intake selection and its effects upon pre- and postpartum changes in NEFA concentrations and body weight and condition in Brahman females.

Ruminal degradability and intestinal release of different vitamin A formulations.
D. P. Preverraud* and P. A. Gerarct, Disesse France SAS, Antony, France.

Poisson analysis of number of services per conception for Iranian Holstein cows.
H. Farhangfar*1 and F. Bahri2, 1Birjand University, Birjand, Iran, 2Ferdowsi University of Mashhad, Mashhad, Iran.

Effects of continuous infusion of tumor necrosis factor-alpha (TNFα) into adipose tissue on glucose and fatty acid metabolism in lactating dairy cattle.
C. A. Martel*, J. K. Mamedova, E. I. Minton, M. L. Jones, J. A. Carroll, and B. J. Bradford, 1Department of Animal Sciences & Industry, and 1Veterinary Medical Teaching Hospital, Kansas State University, Manhattan, Livestock Issues Research Unit, ARS-USDA, Lubbock, TX.

Reproductive rate of semi-free ranging Bison (Bison bison) at the National Bison Range.
M. J. Borgreen*, T. J. Roffe, E. M. Berry, R. B. McCosh, and J. G. Berardinelli, 1Montana State University, Bozeman, 2US Fish and Wildlife Service, Bozeman, MT.
Physiology and Endocrinology Symposium
Sperm-Oviduct Interactions in Livestock and Poultry
Chair: David Miller, University of Illinois
Sponsor: EAAP
Korbel Ballroom 2c

9:30 AM 531 Evidence that oviduct secretions influence sperm function: A retrospective view for livestock.
G J Killian*, The Pennsylvania State University, University Park.

10:00 AM 532 Role of the oviduct in maintaining sustained fertility in hens.
M. R. Bakst*1, and J. P. Brillard2, 1ARS, USDA, Beltsville, MD, 2INRA, Tours, France.

10:30 AM 533 Effect of sperm mobility phenotype on fertility, sperm competition, and in vivo sperm storage in the domestic fowl.
D. P. Froman*, Oregon State University, Corvallis.

11:00 AM 534 Bovine oviduct-sperm interactions preceding fertilization.
S. S. Suarez*, Cornell University, Ithaca, NY.

11:30 AM 535 In vivo imaging of in situ motility of fresh and liquid-stored ram spermatozoa in the ewe genital tract.
X. Druart*1, J. Cognié1, G. Baril1, F. Clément1, J.-L. Dacheux2, 1UMR 6175 INRA, CNRS-Université de Tours-Haras Nationaux, Nouzilly, France, 2INRIA Paris-Rocquencourt, Le Chesnay Cedex, France.

12:00 PM 536 Comparison of timed AI pregnancy rates in Santa Gertrudis (SG) and SG crossbred heifers following the 7-d or 5-d CO-Synch + CIDR protocol.
R. L. Stanko*1,3, K. D. Arnold1, J. R. Ramirez2, S. Moore3, and R. Silguero2, 1USDA-ARS, Beltsville, MD, 2Texas A&M University-Kingsville, Kingsville, 3King Ranch, Inc., Kingsville, TX, 4Texas AgriLife Research, Beeville.

12:15 PM 537 Neither temperament nor residual feed intake affects sexual maturity in Brahman heifers.

Production, Management and the Environment
Environment 1
Chair: John Comerford, Pennsylvania State University
Korbel Ballroom 2b

9:30 AM 538 Evaluation of a reproducible model for necrotic enteritis in broilers and analysis of NetB toxin profiles of different field isolates of Clostridium perfringens.
S Shivaramaiah1, J. R. Barto2, S. L. Layton3, M. J. Morgan4, R. E. Wolfenden1, B. M. Hargis5, and G Téllez5, 1University of Arkansas, Fayetteville, AR, 2University of Guelph, Guelph, ON, Canada.

9:45 AM 539 Effects of a microbial litter amendment on litter quality and broiler performance.
M. J. Hinkle*, S. A. Gottselig1, J. L. McReynolds2, J. T. Lee1, and C. D. Coufal1, 1Texas A&M University, College Station, 2USDA-ARS, College Station, TX.

10:00 AM 540 Bacterial content following simulated rainfall on poultry waste.
J. H. Metzalf*1, P. A. Moore Jr2, A. M. Donoghue2, I. Reyes-Herrera1, K. Arsi1, P. J. Blore3, and D. J. Donoghue1, 1Poultry Science Department, University of Arkansas, Fayetteville, 2Poultry Production and Product Safety Research Unit, USDA-ARS, Fayetteville, AR.

10:15 AM 541 Effect of a low sulfur diet on air emissions, nutrient excretion, and performance of laying hens.
W. Wu-Haan*, W. Powers3, R. Angel1, D. Karcher1, and T. Applegate3, 1Michigan State University, East Lansing, 2University of Maryland, College Park, 3Purdue University, West Lafayette, IN.

10:30 AM 542 Comparison of nutrient balance and performance of laying hens, housed in either enriched or conventional cage systems, over an entire production.
M. Neijat*3, J. D. House1, W. Guenter1, and E. Kebreab1, 1University of Manitoba, Winnipeg, Canada, 2University of California, Davis.

10:45 AM 543 Effects of the removable chicken house on the growth performance of broilers and indoor environment parameters.

11:00 AM 544 Effect of DDGS and mineral sources on air emissions from laying hens.
W. Li*, W. Powers1, D. Karcher1, R. Angel1, and T. J Applegate3, 1Department of Animal Science, Michigan State University, East Lansing, 2Department of Animal Sciences, Purdue University, West Lafayette, IN, 3Animal and Avian Sciences, University of Maryland, College Park.
Effect of amino acid formulation and supplementation on nutrient mass balance and air emissions from turkeys.
Z. Liu\textsuperscript{1}, W. Powers\textsuperscript{*}\textsuperscript{2}, D. Karcher\textsuperscript{1}, R. Angel\textsuperscript{1}, and T. J. Applegate\textsuperscript{1}; \textsuperscript{1}Michigan State University, East Lansing, \textsuperscript{2}University of Maryland, College Park, \textsuperscript{3}Purdue University, West Lafayette, IN.

Magnitude and variability of distillers grains greenhouse gas credits in the corn-ethanol-livestock life cycle.
V. R. Bremer\textsuperscript{*}, A. J. Liska, H. S. Yang, T. J. Klopfenstein, G. E. Erickson, D. T. Walters, and K. G. Cassman, University of Nebraska, Lincoln.

Methane production, fermentation patterns and protozoa numbers in vitro as related to sources of rumen fluid from different cattle feeding systems and animal waste substrate digestion.
C. L. Ross\textsuperscript{*}, M. A. Froetschel, S. Buaphan, S. Chinnasamy, and K. C. Das, The University of Georgia, Athens.

Ruminant Nutrition
Beef: Vitamins and Minerals
Chair: Stacey Gunter, USDA/ARS-SPRRS
Sponsor: ASAS Foundation
Korbel Ballroom 2a

ASAS Early Career Award Presentation: Trace mineral metabolism in ruminants.
T. E. Engle\textsuperscript{*}, Colorado State University, Fort Collins.

Effects of copper supplementation on performance and carcass characteristics of cattle fed diets containing 60% DDGS.
T. L. Felix\textsuperscript{*} and S. C. Loerch, The Ohio State University.

Vitamin A restriction does not improve marbling in Holstein bulls at the same extent as in Holstein steers.
S. Marth\textsuperscript{*}, C. Realini\textsuperscript{1}, A. Bach\textsuperscript{1}, and M. Devant\textsuperscript{1}; \textsuperscript{1}Department of Ruminant Production, IRTA, Barcelona, Spain, \textsuperscript{2}Carcass Quality Subprogram, IRTA, Girona, Spain, \textsuperscript{3}ICREA, Barcelona, Spain.

Effect of added sulfur on in vitro fermentative activity of ruminal contents from steers fed corn-based diet.
S. Uwituze\textsuperscript{*}, L. C. Hollis, and J. S. Drouillard, Kansas State University, Manhattan.

Dietary sulfur negatively affects gain and mineral status in beef steers.
E. L. Richter\textsuperscript{*}, M. E. Drewnoski, and S. L. Hansen, Iowa State University, Ames.

Inclusion of molybdenum and copper with high distillers grain diets as a strategy to mitigate hydrogen sulfide emissions.
L. D. Cross\textsuperscript{*}, S. R. Rust, and W. J. Powers, Michigan State University, East Lansing.

The effect of supplemental molybdenum and copper on the concentrations of hydrogen sulfide in the rumen gas cap and copper in the liver of yearling steers consuming high sulfate water.
R. K. Peterson\textsuperscript{*}, J. J. Wagner\textsuperscript{1}, T. E. Engle\textsuperscript{1}, and T. C. Bryant\textsuperscript{1}; \textsuperscript{1}Colorado State University, Fort Collins, \textsuperscript{2}JBS Five Rivers Cattle Feeding, Greeley, CO.

Effects of supplemental manganese on ruminal pH and hydrogen sulfide concentration in beef steers fed high-sulfur diets containing distillers grains plus soluble.
J. M. Kelzer\textsuperscript{*}, T. D. Maddock\textsuperscript{2}, M. Ruiz-Moreno\textsuperscript{1}, A. DiCostanzo\textsuperscript{1}, G. I. Crawford\textsuperscript{1}, and G. C. Lamb\textsuperscript{1}; \textsuperscript{1}University of Minnesota, St. Paul, \textsuperscript{2}North Florida Research and Education Center, University of Florida Extension Regional Center, Marianna, \textsuperscript{3}Extension Regional Office, University of Minnesota, Hutchinson.

Effects of supplemental manganese on performance and stress responses in beef cattle fed low- and high-sulfur finishing diets containing distillers grains plus soluble.
J. M. Kelzer\textsuperscript{*}, T. D. Maddock\textsuperscript{3}, T. N. Holt\textsuperscript{4}, A. DiCostanzo\textsuperscript{1}, G. I. Crawford\textsuperscript{1}, and G. C. Lamb\textsuperscript{1}; \textsuperscript{1}University of Minnesota, St. Paul, \textsuperscript{2}North Florida Research and Education Center, University of Florida Extension Regional Center, Marianna, \textsuperscript{3}Colorado State University, Fort Collins, \textsuperscript{4}Extension Regional Office, University of Minnesota, Hutchinson.

Effects of sulfur content of wet or dry distillers grains in beef cattle finishing diets on intake, ruminal pH, and hydrogen sulfide.
J. O. Sarturi\textsuperscript{*}, G. E. Erickson, T. J. Klopfenstein, J. T. Vasconcelos, K. Rolfe, and M. G. Dib, University of Nebraska, Lincoln.

Days on feed and dietary sulfur content affect rumen hydrogen sulfide concentrations in feedlot steers.
M. E. Drewnoski\textsuperscript{*}, E. L. Richter, and S. L. Hansen, Iowa State University, Ames.
Selenium fed in inorganic and organic forms differentially and commonly alters liver gene expression profile of growing beef heifers.
S. F. Liao*, K. R. Brown1, A. J. Stromberg2, W. R. Burris1, J. A. Boling1, and J. C. Matthews1, Departments of 1Animal Sciences, 2Food Sciences, and 3Statistics, University of Kentucky, Lexington.

Ruminant Nutrition
Dairy: Forages and Heifers
Chair: Pablo Gregorini, DairyNZ, New Zealand
Korbel Ballroom 1ab

9:30 AM 560 Meta analysis of dairy cow responses to dietary forage NDF.
D. Sauvant*1 and D. R. Mertens2, 1Agroparistech-INRA, Paris, France, 2US Dairy Forage Center, Madison, WI.

9:45 AM 561 Effect of forage type on passage rate estimated from rumen evacuation studies.
S. J. Krizsan*1, S. Ahvenjärvi2, and P. Huhtanen1, 1Department of Agricultural Research for Northern Sweden, Swedish University of Agricultural Sciences, Umeå, Sweden, 2MTT-Agrifood Research Finland. Animal Production Research, Jokioinen, Finland.

10:00 AM 562 Abrupt changes in forage dry matter of one to three days affect intake and milk yield in early lactation dairy cows.
J. Boyd* and D. R. Mertens, US Dairy Forage Research Center, Madison, WI.

10:15 AM 563 Effects of corn silage harvested with or without ears on rumen fermentation and milk performance of dairy cows.
M. Boivin*, R. Gervais, and P. Y. Chouinard, Université Laval, Québec, QC, Canada.

10:30 AM 564 Comparison of alfalfa and orchardgrass hay as replacements for grain in lactating dairy cow diets.
M. L. Raeth-Knight*, H. G. Jung1,2, P. R. Peterson1, N. B. Litherland1, and J. G. Linn2, 1University of Minnesota, St. Paul, 2USDA-Agricultural Research Service, St. Paul, MN.

10:45 AM 565 The effect of feed sorting on NDF, starch, and particle intake.

11:00 AM 566 Effects of varying inclusion rates of prairie hay and wet corn gluten feed on productivity of dairy cows.
D. J. Rezac*, K. N. Grigsby2, and B. J. Bradford3, 1Kansas State University, Manhattan, 2Cargill Incorporated, Blair, NE.

11:15 AM 567 Fiber digestion kinetics in muskoxen.
E. M. Ungerfeld**, R. J. Forster1, P. B. Barboza1, M. B. Leigh1, and C. Glover1, 1University of Alaska Fairbanks, Fairbanks, 2Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.

11:30 AM 568 Nutrient utilization of different levels of dietary fiber in dairy heifers limit-fed high and low concentrate diets.
G. J. Lascano* and A. J. Heinrichs, The Pennsylvania State University, University Park.

11:45 AM 569 Dietary starch level and dose response of Saccharomyces cerevisiae for limit fed-dairy heifers.

12:00 PM 570 Effects of limit-feeding on the feeding behavior of dairy heifers.
B. L. Kitts*, B. W. McBride, I. J. H. Duncan, and T. J. DeVries, Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.

12:15 PM 571 Evaluation of potential carry over effects associated with limit feeding gravid Holstein heifers.
Small Ruminant Symposium
“Going, Going, Gone!” How Curtailment of Livestock Grazing on Federal Lands Could Alter the US Sheep Industry
Chair: J. B. Taylor, USDA-ARS, US Sheep Experiment Station
Sponsors: Journal of Animal Science, USDA Sheep Experiment Station, Dubois, ID
401/402

9:30 AM 572  How curtailment of livestock grazing on public lands could alter the US sheep industry.  
J. B. Taylor*, USDA, Agricultural Research Service, Dubois, ID.

9:35 AM 573  The future of livestock grazing on federal lands: Opportunities for change.  
J. Kaiser*, USDA, Forest Service, Washington, DC.

10:05 AM 574  The future of livestock grazing on federal lands: Real and perceived threats.  
W. G. Myers*, Holland & Hart LLP, Boise, ID.

10:35 AM 575  Economic considerations of sheep grazing on federal and public lands.  
N. R. Rimbey*1 and L. A. Torell2, 1University of Idaho, Caldwell, 2New Mexico State University, Las Cruces.

11:05 AM 576  Impact of reduced federal and public land grazing on viability of the US sheep industry.  
D. P. Anderson*, Texas A&M University, College Station.

11:35 AM 577  So what? What is a scientist supposed to do?  
G. S. Lewis*, C. A. Moffet, and J. B. Taylor, USDA, ARS, US Sheep Experiment Station, Dubois, ID.

12:00 PM  Panel discussion

Teaching/Undergraduate and Graduate Education Symposium
Teaching Symposium: Surviving Promotion and Tenure with a Teaching Appointment
Chair: Jodi Sterle, Texas A&M University
405

9:30 AM

9:40 AM 578  Going beyond the minimum for promotion: Building a toolbox for documenting teaching effectiveness and a pathway to improving teaching.  
D. R. Mulvaney*1,2 and J. E. Groccia3, 1Coll. of Ag., Auburn University, Auburn, AL, 2Dept. Anim. Sciences, Auburn, AL, 3Biggio Teaching Center, Auburn University, Auburn, AL.

10:10 AM 579  Getting scholarly teaching projects published.  
M. A. Wattiaux*, University of Wisconsin-Madison, Madison.

10:40 AM  Break

10:55 AM 580  In the same boat—Facing the challenges of tenure and promotion.  
O. U. Bolden-Tiller*, Tuskegee University, Tuskegee, AL.

11:15 AM  Panel discussion  
Maynard Hogberg, Iowa State University, Don Boggs, Kansas State University, Ken Esbenshade, North Carolina State University, and Alan Grant, Virginia Tech University.

ADSA Foundation Scholar Lecture – Dairy Foods
Chair: Tom Overton, Cornell University
501/502

10:30 AM

10:40 AM  New and nanotechnologies in dairy: Basic understanding for novel applications.  
F. M. Harte, University of Tennessee, Knoxville.
ADSA Foundation Scholar Lecture – Production
Chair: Tom Overton, Cornell University
301/302

2:00 PM Introduction

2:10 PM Challenges and opportunities of feeding distillers grains and other ethanol co-products in dairy cattle diets.
K. F. Kalscheur, South Dakota State University, Brookings.

Animal Behavior and Well-Being
Poultry 2: Broilers
Chair: Joy Mench, University of California-Davis
Korbel Ballroom 3c

2:00 PM 581 The effect of lighting regime on broiler behavior and health.
R. A. Blatchford*, G. S. Archer, and J. A. Mench, University of California, Davis.

2:15 PM 582 Effect of daylength on physiological and behavioral rhythms in broilers.
K. Schwean-Lardner*, B. I. Fancher, and H. L. Classen, University of Saskatchewan, Saskatoon, SK, Canada, Aviagen, Huntsville, AL.

2:30 PM 583 The effect of providing lighting during incubation on stress responses of broiler chickens post-hatch.
G. S. Archer* and J. A. Mench, University of California, Davis.

2:45 PM 584 The effect of providing light during incubation on fear responses of broiler chickens post-hatch.
G. S. Archer* and J. A. Mench, University of California, Davis.

3:00 PM 585 Impact of light intensity on broiler biological rhythms and welfare.
A. Deep*, K. Schwean-Lardner, T. G. Crowe, B. I. Fancher, and H. L. Classen, University of Saskatchewan, Saskatoon, Canada, Aviagen, Huntsville, AL.

3:15 PM 586 Broiler behavior under lighting programs with a sectioned dark period and its welfare considerations.
C. Raginski*, K. V. Schwean-Lardner, H. W. Gonyou, and H. L. Classen, University of Saskatchewan, Saskatoon, SK, Canada, Prairie Swine Centre, Saskatoon, SK, Canada.

3:30 PM 587 Heat and moisture production in broilers during simulated winter transport.
J. M. Waatts*, L. J. Graff, M. L. Strawford, T. G. Crowe, N. A. Burlingette, H. L. Classen, and P. J. Shand, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

3:45 PM 588 Humane slaughter methods for small- and mid-scale poultry operations.

Animal Health
Management, Disease, and Performance
Chair: Pedram Rezamand, University of Idaho
Sponsors: Elanco Animal Health, Pfizer Animal Health
304

2:00 PM 589 Genetic and non-genetic factors affecting the prevalence of mastitis in dromedary camels.
S. Ahmad*, M. Yaqoob*, M. Q. Bilal, G. Muhammad, A. Iqbal, and M. K. Khan, University of Agriculture, Faisalabad, Pakistan, Department of Livestock Management, University of Agriculture, Faisalabad, Pakistan, Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad, Pakistan.

2:15 PM 590 Use of a lipopolysaccharide (LPS) challenge to evaluate the innate immune response of Angus heifers with genotypic differences in GeneSTAR markers for intramuscular fat deposition.
J. O. Buntyn*, J. A. Carroll, T. Smith, S. M. Falkenberg, J. D. Rivera, C. Collier, and T. B. Schmidt, Department of Animal, Mississippi State University and Dairy Sciences, Mississippi State, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, South Mississippi Branch Experiment Station, Mississippi State.
2:30 PM 591  Impact of vaccination on the incidence of liver abscesses in natural-fed finishing cattle.  
J. T. Fox*, 1 D. U. Thomson1, N. N. Lindberg2, and K. Barling3, 1Kansas State University, Manhattan, 2Progressive Beef Consulting Service, Great Bend, KS, 3Novartis Animal Health, College Station, TX.

2:45 PM 592  Physiological responses of heat tolerant and sensitive Bos taurus breeds of cattle to different levels of heat stress.  

3:00 PM 593  Early stage diagnosis of mastitis of dairy cows using 1H NMR-based metabolomics.  
Y. Lv and Q. Z. Li*, Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China.

3:15 PM 594  Clinical trial to evaluate the effect of cefitofur intramammary treatment on non-severe clinical coliform mastitis.  

3:30 PM 595  Cytological and clinical endometritis in dairy cows.  
J. Dubuc*, T. F. Duffield, K. E. Leslie1, J. S. Walton2, and S. J. LeBlanc3, 1Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 2Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.

3:45 PM 596  Impact of postpartum uterine diseases on milk production and culling in dairy cows.  
J. Dubuc*, T. F. Duffield, K. E. Leslie1, J. S. Walton2, and S. J. LeBlanc3, 1Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 2Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.

4:00 PM 597  Evaluation of the hand-held Precision Xtra system for diagnosing ketosis in early lactation dairy cows.  
G. R. Oetzel*, University of Wisconsin, Madison.

4:15 PM 598  Effect of 1 or 2 dose circovirus and mycoplasma vaccines and day of vaccination on growth performance of nursery pigs.  
K. L. Saddoris-Clemons*, S. B. Williams, N. D. Paton, and D. R. Cook, Akey, Lewisburg, OH.

4:30 PM 599  The effect of breeder source flock age on 7- and 14-day turkey poult mortality.  
B. J. Wood*, D. R. McIntyre, and G. Norwell, Hybrid Turkeys, Kitchener; ON, Canada.

4:45 PM 600  Development of an inflammation model for use in the commercial duck.  
P. Cotter*, T. Applegate, R. Murdoch1, K. Daugherty1, and M. Turk3, 1Cotter Laboratory, Arlington, MA, 2Purdue University, West Lafayette, IN, 3Maple Leaf Farms, Milford, IN.

5:00 PM 601  Comparison of water based foam and inert gas mass emergency depopulation methods of turkeys.  

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**ASAS-ADSA Cell Biology Symposium**  
**Receptors and Signaling**  
Chair: James Sartin, Auburn University  
Sponsors: ASAS, ADSA, National Institute of Food and Agriculture (NIFA)  
**401/402**

2:00 PM  
Introduction

2:05 PM 602  The GnRHR:GPCR trafficking in health and disease.  
P. M. Conn*, 1 and J. A. Janovick1*, 1Oregon Health and Science University, Portland, 2Oregon National Primate Research Center, Beaverton.

2:50 PM  
Introduction

2:55 PM 603  Function and regulation of the toll-like receptor family.  
G. M. Barton*, University of California, Berkeley, Berkeley.

3:40 PM  
Introduction

3:45 PM 604  Insulin signaling is a modulator of muscle growth.  
T. A. Davis*, A. Suryawan, R. A. Orellana, and M. L. Fiorotto, USDA/ARS Children’s Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.

4:30 PM  
Introduction
4:35 PM 605 Imaging the organization and trafficking of lipolytic proteins in adipocytes.
James G. Granneman*, Wayne State University School of Medicine, Detroit, MI.

5:20 PM Reception

Bioethics Symposium
Should Animal Welfare Be Law or Market Driven?
Chair: Halina M. Zaleski, University of Hawaii-Manoa
Sponsors: AAAALAC, Monsanto Corp.

2:00 PM 606 Bioethics symposium introduction: Should animal welfare be law or market driven?
C. C. Croney*, The Ohio State University, Columbus.

2:15 PM 607 Should we legislate farm animal welfare?
J. C. Swanson*, Michigan State University, East Lansing.

2:45 PM 608 Impact of slaughter bans on horse welfare.
D. L. Gies*, Animal Assistance Foundation, Denver, CO.

3:15 PM Break

3:30 PM 609 Should animal welfare be law or market based?
B. Rollin*, Colorado State University, Fort Collins.

3:50 PM 610 Should euthanasia and pain management be mandatory? Veterinary viewpoint.
G. C. Golab*, American Veterinary Medical Association, Schaumburg, IL.

4:10 PM Panel discussion

4:30 PM 611 Consumer preferences for market and regulatory responses to farm animal welfare concerns.
F. B. Norwood* and J. L. Lusk, Oklahoma State University, Stillwater.

Breeding and Genetics
Whole Genome Selection

2:00 PM 612 Utility of genomic relationship matrix to identify genotyping errors.
R. Simeone*, I. Misztal1, and I. Aguilar1,2, 1University of Georgia, Athens, 2INIA, Las Brujas, Uruguay.

2:15 PM 613 Genetic evaluation including phenotypic, full pedigree, and genomic information: An application in broiler chickens.
C. Y. Chen*, I. Misztal, I. Aguilar1,2, S. Tsuruta1, T. H. E. Meuwissen3, S. E. Aggrey4, and W. M. Muir5, 1Department of Animal and Dairy Science, University of Georgia, Athens, 2Instituto Nacional de Investigación Agropecuaria, Las Brujas 90200, Uruguay, 3Department of Animal and Aquacultural Sciences, Norwegian University of Life Sciences, As, Norway, 4Department of Poultry Science, University of Georgia, Athens, 5Department of Animal Science, Purdue University, West Lafayette, IN.

2:30 PM 614 Scaling the genomic relationship matrix for single-step evaluation using phenotypic, pedigree and genomic information.
S. Forni*, I. Aguilar1,2, I. Misztal1, and N. Deeb1, 1PIC/Genus Plc, Hendersonville, TN, 2University of Georgia, Athens, 3INIA, Las Brujas, Uruguay.

2:45 PM 615 Accuracies of direct genomic breeding values estimated in dairy cattle with a principal component approach.
N. P. P. Maccioletta*, M. A. Pintus1, R. Steri1, C. Pieramati1, E. L. Nicolazzi1, E. Santus1, D. Vicario1, J. T. van Kaam1, A. Nardone1, A. Valentini1, and P. Ajmone-Marsan1, 1Università di Sassari, Sassari, Italia, 2Università di Perugia, Perugia, Italia, 3Università di Piacenza, Piacenza, Italia, 4ANARB, Bussolengo, Italia, 5ANAPRI, Udine, Italia, 6ANAFI, Cremona, Italia, 7Università della Tuscia, Viterbo, Italia.

3:00 PM 616 Choice of parameters for single-step genomic evaluation for type.
I. Misztal*, I. Aguilar1,2, A. Legarra3, and T. J. Lawlor4, 1University of Georgia, Athens, 2INIA, Las Brujas, Uruguay, 1INRA, Toulouse, France, 4Holstein Association, Brattleboro, VT.
Dairy Foods Symposium
Towards a Mechanistic Understanding of Probiotic Function in Man and Animals
Chair: Jeff Broadbent, Utah State University
Sponsor: EAAP
501/502

2:00 PM
Introduction

2:05 PM 624 Application of “omic” tools to understanding probiotic action.
T. R. Klaenhammer*, 1North Carolina State University, Raleigh, 2Southeast Dairy Foods Research Center, Raleigh, NC.

2:45 PM 625 The gastrointestinal microbiome and probiotics: Effects on intestinal physiology and mucosal inflammation.
J. Versalovic*, Baylor College of Medicine, Houston, TX.

3:15 PM 626 An evolutionary link between bifidobacterial probiotics and milk.
D. Mills*, University of California, Davis.

3:45 PM Break

4:00 PM 627 Assessing and maintaining probiotics in food.

4:30 PM 628 Translating the science into efficacy claims on probiotic or prebiotic products in the US market.
M. E. Sanders*, Dairy & Food Culture Technologies, Centennial, CO.

5:00 PM 629 Strategic application of direct-fed microbials to livestock for growth efficiency and production.
E. Davis* and T. Rehberger, Danisco, Waukesha, WI.

Forages and Pastures Symposium
Environmental Impact of Forage-Based Livestock Production Systems
Chair: Paul Beck, University of Arkansas; Jim Strickland, USDA-ARS FAPRU
Korbel Ballroom 2c

2:00 PM
Introduction

2:05 PM 630 Compatibility of beef cattle management with multiple use values on western rangelands.
T. DelCurto* and P. Kennedy, Eastern Oregon Agricultural Research Center, Union Station, Oregon State University, Union.
2:40 PM 631  
**Livestock grazing and endangered species habitat.**
G. S. Lewis*, C. A. Moffet, and J. B. Taylor, USDA, ARS, US Sheep Experiment Station, Dubois, ID.

3:15 PM 632  
**Economic and environmental issues associated with confinement and pasture-based dairy systems.**
D. A. Clark*, S. F. Ledgard1, P. Gregorini,1 and C. A. Rotz,1  
1DairyNZ, Hamilton, Waikato, New Zealand, 2AgResearch, Hamilton, Waikato, New Zealand, 3United States Department of Agriculture- Agricultural Research Service, University Park, PA.

3:50 PM 633  
**Forages and livestock production with declining water resources and a changing agricultural industry.**

4:25 PM 634  
**Pasture management strategies to minimize the impacts of grazing on water quality of surface water resources.**
J. R. Russell*, D. A. Bear1, K. A. Schwarte1, and M. M. Haan2, 1Penn State University, 2Iowa State University, Ames.

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**Growth and Development**

**Early Development and Fetal Programming**

Chairs: Tom Welsh, Texas A&M University; Rodney A. Hill, University of Idaho

Korbel Ballroom 2b

2:00 PM 635  
**Evaluation of the NCAPG I442M locus, a major gene for bovine prenatal growth, for effects on postnatal development compared to a disruptive mutation in the myostatin encoding gene GDF8.**
C. Kühn*, P. Widmann, R. Pfuhl, and R. Weikard, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

2:15 PM 636  
**Maternal nutrition differentially influenced gene expression responsible for fetal bovine adipocyte development.**

2:30 PM 637  
**Lipid accumulation and fibrosis in skeletal muscle of offspring born to obese dams.**

2:45 PM 638  
**Enhanced transforming growth factor β (TGF-β) signaling and fibrogenesis in ovine fetal skeletal muscle of obese dams at late gestation.**
Y. Huang*, X. Yan, M. J. Zhu, R. J. McCormick, S. P. Ford, P. W. Nathanielsz, and M. Du, 1Department of Animal Science, University of Wyoming, Laramie, 2University of Texas Health Science Center, San Antonio.

3:00 PM 639  
**Up-regulation of nutrient transporters in the placenta of nutrient restricted pregnant ewes.**
Y. Ma*, M. J. Zhu, P. W. Nathanielsz, and S. P. Ford, Center for the Study of Fetal Programming, Univ. of Wyoming, Laramie, Center for Pregnancy and Newborn Research, Univ. of Texas Health Sciences Center, San Antonio.

3:15 PM 640  
**Effect of grouping calves post-weaning according to pre-grouping feed intake on animal performance.**
C. M. Matuk*, M. Chahine, A. Bach, B. Ozer, M. E. de Haro Martí, J. B. Glaze Jr., T. Fife, and M. Nelson, 1University of Idaho, Twin Falls, 2IRTA, Caldes de Montbui, Spain, 3ICREA, Barcelona, Spain, 4University of Idaho, Gooding.

3:30 PM 641  
**Evaluation of serum protein-based arrival formula and serum protein (gammulin) on growth, morbidity, and mortality of stressed dairy calves.**
A. Pineda*, J. K. Drackley, and J. M. Campbell, 1University of Illinois, Urbana, 2APC, Inc., Ankeny, IA.

3:45 PM 642  
**The effect of maternal exercise on gestating gilt’s neonatal piglet organ weight.**

4:00 PM 643  
**Changes in gene expression during pituitary morphogenesis and organogenesis in embryonic chicks.**
M. Proskowic-Weglarz*, S. E. Higgins, and T. E. Porter, University of Maryland, Department of Animal and Avian Sciences, College Park.

4:15 PM 644  
**Effects of in ovo feeding of carbohydrates and arginine on the energy metabolism, protein status, and perinatal growth in Pekin ducks.**

4:30 PM 645  
**The effect of induced moisture loss on embryonic development of Pekin ducks.**
C. Noonan* and M. S. Lilburn, Ohio State University/OARDC, Wooster.
Bone development of three breed crosses of broilers is affected by incubation profiles.
E. O. Oviedo-Rondón*, M. J. Wineland, C. M. Ashwell, and P. R. Ferket, North Carolina State University, Raleigh.

Effect of in ovo selenium injection on chick embryo viability and tissue selenium levels.

Immunology and Pathology
Poultry Immunology and Diseases
Chair: Rami A. Dalloul, Virginia Tech
503/504

Testosterone exposure alters embryonic bursal gene expression in chicken lines selected for differential antibody response.
R. L. Taylor Jr.*, T. Burks1, C. Timmerman2, P. B. Siegel1, and C. M. Ashwell3, 1University of New Hampshire, Durham, 2North Carolina State University, Raleigh, 3Virginia Tech, Blacksburg.

Limiting dilution studies to detect avian influenza viruses from questionable allantoic fluid samples.
T. V. Dormitorio* and J. J. Giambrone, Auburn University, Auburn, AL.

Development and characterization of mouse monoclonal antibodies reactive with chicken CD80.
S.-H. Lee*, H. Lillehoj1, M.-S. Park2, K.-W. Lee3, C. Baldwin1, D. Tompkins1, B. Wagner1, U. Babu1, and E. Del Cacho3, 1Animal and Natural Resources Institute, USDA-ARS, Beltsville, MD, 2University of Massachusetts, Amherst, 3Cornell University, Ithaca, NY. 4Food and Drug Administration, Laurel, MD, 5University of Zaragoza, Zaragoza, Spain.

Suppressive properties of chicken CD25+ cells during lipopolysaccharide injection.
R. Shanmugasundaram1,2 and R. K. Selvaraj*1, 1Ohio Agricultural Research and Development Center, Wooster, 2The Ohio State University, Wooster.

Expression profile of cytokines in cecal tonsils of broiler chicks challenged with Clostridium perfringens.
Y. O. Fasina*, H. S. Lillehoj, M. S. Park, and D. E. Conner, 1Auburn University, Auburn, AL, 2USDA-ARS-ANRI-APDL, Beltsville, MD.

Gel spray as a viable method to apply a coccidia vaccine to chickens.

A mixture of capsicum and turmeric oleoresins improve performance of vaccinated broilers challenged or not with coccidiosis.
V. Brito*, C. Moynat1, A. Casarin2, M. Forat3, and D. Bravo4, 1Pancosma, Geneva, Switzerland, 2Instituto Internacional de Investigacion Animal, Mexico.

Cinnamaldehyde and a blend of capsicum and turmeric oleoresins improve performance of vaccinated broilers subject to coccidiosis.
C. Moynat*, V. Brito2, A. Casarin1, M. Forat1, and D. Bravo2, 1Pancosma, Geneva, Switzerland, 2Euronute, Queretaro, Mexico.

Ileal and cecal microbial populations and coccidia infection in broilers given probiotics and essential oil blends.
M. E. Humel*, E. O. Oviedo-Rondón1, N. A. Barbosa2, N. K. Sakomura3, M. C. Jenkins4, and S. E. Dowd5, 1USDA, ARS, FRSRU, College Station, TX, 2Department of Poultry Science, North Carolina State University, Raleigh, 3Universidad Estadual Paulista, UNESP-Sao Paulo, Brazil, 4Animal Parasitic Diseases Laboratory, USDA, ARS, Beltsville, MD, 5Research and Testing Laboratories, Medical Biofilm Research Institute, Lubbock, TX.

Effect of microbial-nutrition interaction on chicken immune system after the early administration of probiotic with organic acids in young chicks.
J. C. Rodriguez-Lecompte*, J. Brady1, G. Camelio-Jaimes2, S. Sharif3, G. Crow4, G. O. Ramirez-Yañez1, W. Guenter1, and J. D. House4, 1University of Manitoba, Winnipeg, Manitoba, Canada, 2Adzyme, Bogota, Cundinamarca, Colombia, 3University of Guelph, Guelph, Ontario, Canada.

Probiotic, prebiotic and yeast supplementation in broiler diets from 1 to 42 days of age: 2. Immune response and slaughter traits.
H. M. Safaa*, S. A. Riad1, F. R. Mohamed3, S. S. Siam2, and H. A. El-Minshawy4, 1Animal Production Department, Faculty of Agriculture, Cairo University, Giza 12613, Giza, Egypt, 2Breeding Department, Animal Production Research Institute, Dokki, Giza, Egypt, 3Ministry of Agriculture, Dokki, Giza, Egypt.
**Graduate Student Paper Competition**  
**National ADSA Production PhD Oral**  
Chair: Brian J. Bequette, University of Maryland

**507**

2:00 PM  659  
Forage concentration and dried distillers grains with solubles in diets for lactating dairy cows.  

2:15 PM  660  
In vitro effects of *Escherichia coli* lipopolysaccharide on the function and gene expression of neutrophils isolated from the blood of dairy cows.  
X. S. Revelo* and M. R. Waldron, University of Missouri, Columbia.

2:30 PM  661  
Expression analysis of genes of sialic acid metabolism in transition and late lactation Holstein cows using microarrays and RNA sequencing.  

2:45 PM  662  
Incidence and risk factors of bovine respiratory disease in dairy heifer calves in Ontario and Minnesota.  
C. Windeyer**, S. J. LeBlanc², K. D. Lissemore¹, D. C. Hodgins³, S. M. Godden¹, and K. E. Leslie¹, ¹University of Guelph, Guelph, ON, Canada, ²University of Minnesota, St Paul.

3:00 PM  663  
Effect of antibiotic treatment at post-weaning movement and BRD on growth at multiple time points in commercial dairy calves.  
A. L. Stanton*, S. J. LeBlanc¹, D. Kelton¹, S. T. Millman², J. Wormuth¹, and K. E. Leslie¹, ¹University of Guelph, Guelph, Ontario, Canada, ²Iowa State University, Ames, NY.

3:15 PM  664  
Effects of glucose and essential amino acids on phosphorylation of signaling proteins for protein synthesis in bovine mammary epithelial cells.  
J. A. D. R. N. Appuhamy**, J. Escobar², and M. D. Hanigan³, ¹Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, ²Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg.

3:30 PM  665  
Prevention of *Mycobacterium avium* ssp. *paratuberculosis* (MAP) infection in Balb/c mice by feeding probiotic *Lactobacillus acidophilus* NP-51.  
M. A. Osman**, J. R. Stabel¹, J. M. Hostetter², D. S Nettleton¹, and D. C. Beitz³, ¹Department of Animal Science, Iowa State University, Ames, ²US Department of Agriculture, ARS, National Animal Disease Center, Ames, IA, ³Department of Veterinary Pathology, Iowa State University, Ames, ⁴Department of Statistics, Iowa State University, Ames, ⁵Department of Biochemistry, Biophysics, and Molecular Biology, Iowa State University, Ames.

3:45 PM  666  
Effects of varying DCAD and Na:K on production, rumen and urine parameters in lactating dairy cows.  
K. E. Cowles* and M. R. Murphy, University of Illinois, Urbana.

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**Nonruminant Nutrition**  
**DDGS**  
Chair: Brian Richert, Purdue University  
Korbel Ballroom 1cd

2:00 PM  667  
Increased AME and growth performance in broiler chicks fed a high DDGS diet supplemented with a mixture of NSPase.  

2:15 PM  668  
Effects of heat treating soybean meal and DDGS on ileal amino acid digestibility in broilers.  
A. Helmbrecht*, H. Kluth², A. Lemme², M. S. Redshaw³, and M. Rodehutscord³, ²Evonik Degussa GmbH, Hanau, Germany, ³University Halle-Wittenberg, Halle-Wittenberg, Germany.

2:30 PM  669  
High dietary inclusion of dried distillers grains with solubles in broiler chick rations in combination with Allzyme SSF enzyme—Effects on yield & endogenous enzyme levels.  
M. K. Masa’deh**, C. A. Fassbinder-Orth¹, and S. E. Scheidelér¹, ¹University of Nebraska-Lincoln, Lincoln, ²Creighton University, Omaha, NE.

2:45 PM  670  
Effect of exogenous enzyme supplementation on performance and carcass characteristics of broilers fed distillers dried grains with solubles (DDGS).  
B. Jung*, A. B. Batal¹, and R. Mitchell¹, ¹University of Georgia, Athens, ²Perdue Farms, Inc., Salisbury, MD.
3:00 PM 671  Effects of varying levels of DDGS on broiler growth and intestinal content characteristics at 28 days post-hatch.  
R. E. Loar II*, J. R. Donaldson, and A. Corzo, *Mississippi State University, MS.

3:15 PM 672  Effect of distillers dried grains with solubles and enzyme supplementation on production performance and egg quality of laying hens through 36 weeks of egg production.  

3:30 PM 673  Effects of high concentrations of distillers dried grains with solubles on long-term laying hen performance.  
J. Green*, D. U. Ahn, and M. E. Persia, Iowa State University, Ames.

3:45 PM 674  Effects of high concentrations of dried distillers grains with solubles on intestinal structure and nutrient and endotoxin transport of laying hens.  

4:00 PM 675  Effects of extruding DDGS at high and low temperatures on nutritional value of diets for nursery pigs.  
S. M. Williams*, J. D. Hancock, S. Issa, C. B. Paulk, and T. L. Gugle, Kansas State University, Manhattan.

4:15 PM 676  Belly firmness and bacon quality from finishing pigs fed DDGS with various withdrawal times and with added tallow.  
M. C. Ulery*, G. L. Cromwell, G. Rentfrow, M. D. Lindemann, and M. J. Azain, University of Kentucky, Lexington, KY.

4:30 PM 677  Effects of co-products inclusion on growth performance and carcass characteristics of grower-finisher pigs.  
R. Jha*, J. K. Htoo*, M. G. Young, E. Beltranena, and R. T. Zijlstra, University of Alberta, Edmonton, AB, Canada, 1Evonik Degussa GmbH, Hanau, Germany, 2Gowans Feed Consulting, Wainwright, AB, Canada, 3Alberta Agriculture and Rural Development, Edmonton, AB, Canada.

4:45 PM 678  Effects of dietary crude protein and inclusion of co-products on growth performance and carcass characteristics of grower-finisher pigs.  
R. T. Zijlstra*, R. Jha, M. G. Young, J. F. Patience, E. Beltranena, and J. K. Htoo, University of Alberta, Edmonton, AB, Canada, 1Gowans Feed Consulting, Wainwright, AB, Canada, 2Iowa State University, Ames, 3Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 4Evonik Degussa GmbH, Hanau, Germany.

Nonruminant Nutrition
Energy and Dietary Fat

Chair: Maria Walsh, Teagasc, Fermoy, Ireland
Korbel Ballroom 3b

2:00 PM 679  Effects of dbcAMP on the proliferation, differentiation and adipogenesis-related genes of porcine adipocytes.  

2:15 PM 680  DbcAMP increased lean percentage and protein deposition in finishing pigs.  

2:30 PM 681  The impact of dietary long chain fatty acids on bone and cartilage in swine.  
C. I. O’Connor-Robinson*, J. D. Spencer, and M. W. Orth, 1Michigan State University, East Lansing, 2JBS United, Inc., Sheridan, IN.

2:45 PM 682  Cannabinoid receptor type 1 (CB1) antagonist, SR141716 suppresses hepatic carnitine palmitoyltransferase 1 (CPT1) gene expression in rat.  
T. Wu*, Z. Yuan, and Y. Wang, Institution of Feed Science, Hangzhou, Zhejiang province, China.

3:00 PM 683  Is the effect of dietary energy levels on feed intake of broiler chickens affected by bird age?  
M. Cho*, R. L. Payne, and H. L. Classen, 1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Evonik-Degussa Corporation, Kennesaw, GA.

3:15 PM 684  Estimation of net energy values of feedstuffs by simulation of biochemical reactions in broiler chicks.  
S. Cerrate* and C. Coon, University of Arkansas, Fayetteville.

3:30 PM 685  Energy determination of corn co-products fed to broiler chicks from fifteen to twenty-four days of age and use of composition analysis to predict AMEn.  
S. J. Rochell*, B. J. Kerr, and W. A. Dozier, III, 1Auburn University, Auburn, AL, 2USDA-ARS Agroecosystems Research Unit, Ames, IA.
Apparent metabolizable energy (AME) content and standardized ileal amino acids digestibility of wheat, wheat-corn and corn distillers dried grains with solubles (DDGS) for broilers.

Use of the precision-fed rooster TME assay and chick AME assay to quantify the energy value of Nutridense corn.
T. Loeffler*, D. A. Neves, and A. B. Batal, University of Georgia, Athens.

Evaluation of energy digestibility among and within feedstuffs for swine using an in vitro digestibility technique.
L. F. Wang*, P. R. Regmi1, N. S. Ferguson2, A. Pharaon3, and R. T. Zijlstra1, 1University of Alberta, Edmonton, AB, Canada, 2Nutreco Canada, Guelph, ON, Canada.

The ontology of intestinal carbohydrate digestive, absorptive and nutrient sensing proteins in pigs.
M. Al-Rammahi*, A. Moran1, D. Batchelor1, P. Sangild2, C. Ionescu3, D. Bravo3, and S. Shirazi-Beechey1, 1University of Liverpool, Liverpool, UK, 2University of Copenhagen, Frederiksberg, Denmark, 3Pancosma, Geneva, Switzerland.

Quality characteristics and fatty acid composition of eggs from hens fed *Camelina sativa* (camelina meal).
R. Kakani*, A. Haq1, J. Fowler1, E. Murphy2, T. Rosenberger3, M. Berhow4, and C. A. Bailey3, 1Texas A&M University, College Station, 2University of North Dakota, Grandforks, 3Agragen, LLC, Cincinnati, OH, 4National Center for Agricultural Utilization Research, USDA, Peoria, IL.

Nonruminant Nutrition Symposium
Models for Disease × Nutrition Evaluation and the Impact of Nutrition on Health, Disease, and/or Recovery
Chair: Mike Rincker, DPI Global
Korbel Ballroom 1ef

Introduction
2:00 PM

Possible nutritional interventions to improve intestinal health.

Challenge models to study foodborne pathogen transmission and test intervention strategies.
P. Ebner*, Purdue University, West Lafayette, IN.

Nutritional modulation of the gastrointestinal barrier and its role in gut health and disease.
A. J. Moeser*, North Carolina State University, Raleigh.

Is immunomodulation good?
K. C. Klasing*, University of California, Davis.

Discussion
4:40 PM

Nonruminant Nutrition
Vitamins and Management
Chair: Ondulla Foye-Jackson, Center for Food Safety and Applied Nutrition, FDA
Korbel Ballroom 3a

Functional characterization of folic acid transport in the intestine of the laying hen.
G. B. Tactacan*, W. Guenter, and J. D. House, University of Manitoba, Winnipeg, Manitoba, Canada.

Effect of choline, folacin and vitamin B₁₂ on egg components and egg phospholipid composition in laying hens.
P. Krishnan* and S. E. Scheideler, University of Nebraska Lincoln, Lincoln.

Effects of canthaxanthin and 25-hydroxycholecalciferol on reproductive aspects of roosters.
A. P. Rosa*, P. Ferreira1, A. Scher1, R. P. Ribeiro1, G. Farina1, and J. O. B. Sorbara2, 1Universidade Federal de Santa Maria, Animal Science Department, Poultry Laboratory, Santa Maria, RS, Brazil, 2DSM Nutritional Products, São Paulo, SP, Brazil.
Supplementation of canthaxanthin and 25-OH-D₃ to broiler breeders diet on broiler chick hatchery parameters and egg yolk TBARS.

A. P. Rosa*, A. Scher¹, L. Boemo¹, T. N. N. Vieira¹, J. A. G. Ferreira Jr.¹, and J. O. B. Sorbará¹, ¹Universidade Federal de Santa Maria, Animal Science Department, Poultry Laboratory, Santa Maria, RS, Brazil, ²DSM Nutritional Products, São Paulo, SP, Brazil.

Sparing vitamin E effects of a synthetic antioxidant blend in broilers.

J. Zhao*, M. Vazquez-Anon, R. J. Harrell, J. D. Richards, F. Yan, T. Wineman, and S. Carter, Novus International Inc.

Effect of percentage pellet fines and house-walking schedule on broiler growth performance.

W. J. Pacheco*, R. D. Malheiro¹, C. R. Stark, P. R. Ferket, and J. Brake, North Carolina State University, Raleigh.

The effects of feeder-trough space and gap setting on growth performance of finishing pigs.


Modeling the response of growing turkeys to nutrition: from experimental to commercial data.

V Rivera-Torres*¹, ², P Ferket³, and D Sauvant⁴, ¹Techna, Couëron, France, ²AgroParisTech, Paris, France, ³NC State University, Raleigh, NC, ⁴INRA-AgroParisTech, Paris, France.

Maximum profit feed formulation. 3. Interaction between energy content and temperature.

S. Cerrate* and P. W. Waldroup, University of Arkansas, Fayetteville.

Physiology and Endocrinology
Neuroendocrinology and Hormone Receptors
Chair: Fred Stormshak, Oregon State University
505/506

Chicken Pit-1 isoforms: Expression, nuclear localization, and involvement in growth hormone promoter activation.

M. Mukherjee* and T. E. Porter, University of Maryland, College Park.

Ras-dva is a novel Pit-1 and glucocorticoid regulated gene in the developing avian pituitary gland.

L. E. Ellestad* and T. E. Porter, Department of Animal and Avian Sciences and Molecular and Cell Biology Program, University of Maryland, College Park.

Hypothalamic galanin-like peptide and kisspeptin may regulate the hypothalamo-pituitary-gonadal axis in the Mallard duck (Anas platyrhynchos).

G. S. Fraley*, Hope College, Holland, MI.

Gene expression profiling of dopamine-melatonin neurons in the avian premammillary nucleus.


Septal and hypothalamic structures activated following sexual and agonistic encounters in male broiler breeders.

W. J. Kuenzel*, J. Xie, and A. Jurkevich, University of Arkansas, Fayetteville.

Various social behaviors induce differential activation of aromatase neurons in the brain of male broilers.

J. Xie*, W. J. Kuenzel, and A. Jurkevich, University of Arkansas, Fayetteville.

Fos protein induction in vasotocinergic neurons of male broilers following different social contexts.

A. Jurkevich*, J. Xie, and W. J. Kuenzel, University of Arkansas, Fayetteville.

Effects of RFamide-related peptide-3 (RFRP-3) on secretion of LH in ovariectomized prepubertal gilts.

N. L. Heidorn¹, C. R. Barb¹, C. J. Rogers¹, G. J. Hausman¹, and C. A. Lents*¹, ¹University of Georgia, Athens, ²USDA-ARS Richard B. Russell Agriculture Research Center, Athens, GA.

The effects of fluoxetine on lactation and lamb growth in sheep.

P. L. Black*, R. A. Halalsheh², L. M. Lankford³, M. M. Marricle³, M. M. Christiansen³, M. M. Scroppo¹, L. L. Hernandez², and T. T. Ross³, ¹New Mexico State University, Las Cruces, ²University of Cincinnati, Cincinnati, OH.

Withdrawn by author
Cloning and characterization of chicken galanin and galanin receptors.
J. C. W. Ho*, 1 Y. Wang2, and F. C. Leung3, 1The University of Hong Kong, Hong Kong, HKSAR, China, 2Sichuan University, Chengdu, Sichuan, China.

Production, Management and the Environment
Dairy 1
Chair: John Comerford, Pennsylvania State University
Korbel Ballroom 4def

2:00 PM 715 Influence of dairy herd longevity and productivity on lifetime N use efficiency.
J. M. Moorby*, Institute of Biological, Environmental and Rural Sciences, Aberystwyth, UK.

2:15 PM 716 Optimal dry period length and management to maximize production and health.
D. E. Santschi1, C. L. Girard2, R. I. Cue3, D. Pellerin4, and D. M. Lefebvre5, 1Valacta, Ste-Anne-de-Bellevue, QC, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3McGill University, Ste-Anne-de-Bellevue, QC, Canada, 4Université Laval, Québec, QC, Canada.

2:30 PM 717 Effect of dietary phosphorus amount on milk production of dairy cows in China.
Z. Liu1, C. Wang*1, J. X. Liu1, D. M. Wang1, and Z. Wu2, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2University of Pennsylvania, School of Veterinary Medicine, Kennett Square.

2:45 PM 718 Voluntary use of showers: Effects on behavior and physiology of dairy cattle in summer.
A. L. Legrand1,2,3, K. E. Schütz2, and C. B. Tucker*1, 1Department of Animal Science, University of California, Davis, 2AgResearch Ltd, Hamilton, NZ, 3Division of Animal Health & Welfare, University of Edinburgh, Roslin, UK.

3:00 PM 719 The influence of technological and biological factors on productivity in dairy farms.

N. M. Bello*, J. P. Steibel, R. J. Erskine, and R. J. Tempelman, Michigan State University, East Lansing.

3:30 PM 721 Milking frequency and milk production in pasture-based lactating dairy cows.

3:45 PM 722 Water use and effectiveness of a low-pressure mister system for cooling lactating dairy cows during chronic heat stress.
J. K. Bernard*1, D. R. Bray2, N. A. Mullen3, and C. P. Rowe1, 1University of Georgia, Tifton, 2University of Florida, Gainesville.

4:00 PM 723 A point-in-time comparison of the environmental impact of Jersey versus Holstein milk production.
J. L. Capper*1 and R. A. Cady2, 1Department of Animal Sciences, Washington State University, Pullman, 2Elanco Animal Health, Greenfield, IN.

4:15 PM 724 Bio-economic value of extended lactations in Italian Holstein farms.
A. S. Atzori*, R. Steri, C Dimauro, A. Cannas, and G. Pulina, Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Sardinia, Italy.

4:30 PM 725 Physiological and nutritional changes of dairy goats for maintaining milk yield during extreme heat stress conditions at late lactation.

4:45 PM 726 Impact of evaporative pads and cross ventilation on core body temperature and resting time of lactating cows.
J. F. Smith1, B. J. Bradford*1, J. P. Harner2, K. Ito2, M. vonKeyserlingk3, C. R. Mullins1, J. C. Potts1, and M. W. Overton4, 1Kansas State University, Manhattan, 2University of British Columbia, Vancouver, Canada, 3University of Georgia, Athens.
Evaluation of triticate dried distillers grain as a barley silage substitute in feedlot finishing diets.
K. T. Wierenga*, T. A. McAllister¹, D. J. Gibb¹, A. V. Chaves², E. K. Okine¹, K. A. Beauchemin¹, and M. Oba¹, ¹University of Alberta, Edmonton, AB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Examination of rumen bacterial community changes in feedlot cattle.
R. M. Beliveau*¹,², W. Z. Yang², R. J. Forster², J. J. McKinnon¹, and T. A McAllister², ¹Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, ²Agriculture and Agri-Food Canada Research Center, Lethbridge, Alberta, Canada.

Longitudinal gene network and pathway analysis in skeletal muscle from early-weaned Angus steers fed high-starch or low-starch diets during the growing phase.

Carbohydrate-responsive element binding protein (MLXIPL) and PPARγ gene network expression in longissimus lumborum of early-weaned and normal-weaned Angus steers fed a high-starch diet during the growing phase.

Effects of fructose-based block supplement on ruminal concentration of lactate and growth of lactate-utilizing bacteria in forage-fed cattle.
K. A. Miller*, G. L. Parsons, M. J. Quinn, and J. S. Drouillard, Kansas State University, Manhattan.

Effects of corn steep liquor in low-moisture blocks processed under vacuum or at atmospheric pressure on performance of growing heifers fed forage-based diets.
K. A. Miller*, G. L. Parsons, L. K. Thompson, and J. S. Drouillard, Kansas State University, Manhattan.

Relationship between eating pattern and performance of Holstein bulls and steers fed high-concentrate rations using a computerized concentrate feeder.
M. Devant*, S. Marti¹, and A. Bach²¹, ¹Department of Ruminant Production, IRTA, Barcelona, Spain, ²ICREA, Barcelona, Spain.

Effect of supplemental protein source during the winter on pre- and postpartum glucose metabolism.
F. W. Harrelson*¹, S. L. Ivey¹, S. H. Cox¹, R. L. Dunlap II¹, J. T. Mulliniks¹, B. H. Carter¹, C. A. Loest¹, and M. K. Petersen², ¹New Mexico State University, Las Cruces, ²USDA-ARS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.

Ruminal and rectal temperatures during acidosis challenge in beef cattle.
J. L. Wahrmund*, J. R. Ronchesel, C. R. Krehbiel, and C. J. Richards, Oklahoma State University, Department of Animal Science, Stillwater.

The influence of dietary protein regimens on crude protein and dry matter apparent digestibility in steers fed a steam-flaked corn based diet.
E. C. Westover*¹, J. J. Wagner¹, T. E. Engle¹, T. C. Bryant¹, S. L. Archibeque¹, and J. Ham¹, ¹Colorado State University, Fort Collins, ²JBS Five Rivers Cattle Feeding, Greeley, CO.

Effects of rumen-protected methionine on performance and health of growing feedlot heifers.

Influence of feeding increasing levels of dry or modified wet corn distillers grains plus solubles in whole corn grain-based finishing diets on pancreas mass, and α-amylase and trypsin activity in feedlot cattle.
H. Salim*, K. M. Wood¹, P. L. McEwen², I. B. Mandell¹, S. P. Miller¹, and K. C. Swanson¹, ¹University of Guelph, Guelph, Ontario, Canada, ²Ridgetown Campus, Guelph, Ontario, Canada.
Ruminant Nutrition
Dairy: Rumen Metabolism
Chair: Jong-Su Eun, Utah State University
Korbel Ballroom 1ab

2:00 PM 739 Effects of lauric and myristic acids on ruminal fermentation, production, and milk fatty acid composition in lactating dairy cows.

2:15 PM 740 Time course of recovery from diet induced milk fat depression in dairy cows.

2:30 PM 741 Meta-analysis to calculate volatile fatty acid production in the rumen of cattle.
D. Sauvant* and P. Noziere, 1Agroparistech-INRA MoSAR, 16 rue Claude Bernard, Paris, France, 2INRA-URH, 63122 St Genes Champanelle, France.

2:45 PM 742 Forage physically effective fiber source alters ruminal pH and site of digestion.
M. B. Hall*, US Dairy Forage Research Center; USDA-ARS, Madison, WI.

3:00 PM 743 Evaluation of 2-hydroxy-4-(methylthio) butanoic acid isopropyl ester (HMBi) and methionine (Met) supplementation on digestibility and efficiency of bacterial growth in continuous culture.
C. M. Fowler, S. K. R. Karnati, B. J. Bequette, Z. Yu, and J. L. Firkens*, 1The Ohio State University, Columbus, 2University of Maryland, College Park.

3:15 PM 744 Ruminal degradability of forages and diets in lactating dairy cows fed a hemicellulose extract.
K. J. Herrick*, M. Abdullah, A. R. Hippen, D. S. Schingoethe, K. F. Kalscheur, and R. S. Patton, 1South Dakota State University, Brookings, 2University of Veterinary and Animal Sciences, Lahore, Pakistan, 3Temple Inland, Inc.

3:30 PM 745 Effect of replacing canola meal with wheat–based dried distillers grains with solubles on ruminal fermentation, microbial nitrogen supply and milk production in dairy cows.
G. E. Chibisa*, D. A. Christensen, and T. Mutsvangwa, University of Saskatchewan, Saskatoon, Canada.

3:45 PM 746 Shifts in fermentation and intermediates of biohydrogenation induced by potassium supplementation into continuous cultures of mixed ruminal microorganisms.

4:00 PM 747 Methane production, fermentation patterns and protozoa numbers in vitro as related to source of rumen fluid and feed as substrate from different cattle feeding systems.

4:15 PM 748 Time course of changes in ruminal chemistry and bacterial community composition following exchange of ruminal contents between lactating Holstein cows.
P. J. Weimer*, D. M. Stevenson, H. C. Mantovani, and S. Man, 1USDA-ARS, Madison, WI, 2University of Wisconsin, Madison, 3Universidade Federal de Viçosa, Viçosa, MG, Brazil.

4:30 PM 749 Acute phase protein response during acute bovine ruminal acidosis.
A. M. Danscher*, M. B. Thoefner, P. M. H. Heegaard, C. T. Ekstroem, P. H. Andersen, and S. Jacobsen, 1University of Copenhagen, Denmark, 2Technical University of Denmark, Copenhagen, Denmark.

4:45 PM 750 Redox potential measurement: A new way to explore ruminal metabolism.
Small Ruminant
Sheep and Goat Production 2
Chair: S. Solaiman, Tuskegee University
405

2:00 PM 751 Live and carcass leg characteristics in terminally-sired lambs.
M. R. Mousel*, T. D. Leeds1, D. R. Notter1, H. N. Zerby1, S. J. Moeller1, and G. S. Lewis1, 1USDA, ARS, U. S. Sheep Experiment Station, Dubois, ID, 2USDA, ARS, National Center for Cool and Cold Water Aquaculture, Leetown, WV, 3Virginia Polytechnic Institute and State University, Blacksburg, 4The Ohio State University, Columbus.

2:15 PM 752 The relationship of real-time ultrasound body composition measurements, body weight and hip height with body condition score in mature Suffolk × Hampshire ewes.

2:30 PM 753 Redberry juniper as a roughage source in lamb finishing rations: Wool and carcass characteristics, meat fatty acid profiles, and sensory panel traits.
T. R. Whitney* and C. J. Lupton, Texas AgriLife Research, San Angelo.

2:45 PM 754 Evaluating roughage level in lamb finishing diets containing 40% distillers dried grains: Carcass characteristics, meat fatty acid profiles, and sensory panel traits.
T. R. Whitney*, M. G. Williamson, and J. K. Mceachern, Texas AgriLife Research Center, San Angelo.

3:00 PM 755 Accuracy of the FAMACHA system for estimating degree of Haemonchus contortus induced anemia in Hampshire, Polypay and percentage White Dorper ewes.

3:15 PM 756 Using FAMACHA and alternative dewormers to manage gastrointestinal nematodes in a dairy goat herd.
S. P. Hart*1 and L. J. Dawson1, 1E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, O, 2Oklahoma State University CVM, Stillwater.

3:30 PM 757 Effects of garlic supplementation on nematode parasite infection in grazing goats.

3:45 PM 758 Efficacy of ginger and pumpkin seeds in controlling internal parasites in meat goat kids.
D. J. O’Brien1, M. C. Gooden2, J. C. Warren2,1, E. K. Crook1, J. E. Miller1, N. C. Whitley1, and J. M. Burke1, 1Delaware State University, Dover; 2University of Maryland Eastern Shore, Princess Anne, 3Louisiana State University, Baton Rouge, 4North Carolina A&T State University, Greensboro, 4USDA, ARS, Dale Bumpers Small Farms Research Center, Booneville, AR.

Swine Species
Chair: Brad Lawrence, Novus International Inc.
403/404

2:00 PM 759 Casein glycomacropeptide (CGMP) in the diet of early weaned piglets reduces the Escherichia coli attachment to the intestinal mucosa and increases lactobacillar numbers in digesta.

2:15 PM 760 Early- vs. late-gestation dietary lysine requirement of young sows.
R. S. Samuel*, S. Moehn1, P. B. Pencharz2, and R. O. Ball1,2, 1Department of AFNS, University of Alberta, Edmonton, Alberta, Canada, 2Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.

2:30 PM 761 A wheat bran extract shows a high attachment to K88 Escherichia coli in-vitro.

2:45 PM 762 Effect of a softer surface in the farrowing crate on feed intake of lactating sows.
A. Da Silva*, S. S. Anil, J. Deen, and S. K. Baidoo, University of Minnesota, St Paul.

3:00 PM 763 Effect of P. G. 600 on estrous cycles in gilts.
M. J. Estienne* and R. J. Crawford, Virginia Polytechnic Institute and State University, Blacksburg.
Analysis of the association between lameness and claw lesions in stall-housed gestating sows.
A. Da Silva*, S. S. Anil, J. Deen, and S. K. Baidoo, University of Minnesota, St Paul.

Design of porcine lactoferricin-based antimicrobial peptides with improved activity.
F. F. Han*, Y. F. Liu, Y. G. Xie, Y. H. Gao, and Y. Z. Wang, Feed Science Institute of Zhejiang University, Hangzhou, Zhejiang, China.

ADSA Production Division Symposium
Dairy Products and Human Health: The Facts
Chair: Sergio Calsamiglia, Universidad Autonoma de Barcelona
Sponsor: EAAP
301/302

Wednesday, July 14
POSTER PRESENTATIONS
Animal Health
Probiotics and Diet

Improved health status of newborn calves from dairy cows treated intravaginally with probiotic bacteria.

Infusion of commensal bacteria intravaginally improved overall health status of transition dairy cows.

Intravaginal administration of commensal lactobacilli modulated plasma metabolites and innate immunity in periparturient dairy cows.
S. Iqbal, Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, University of Alberta, Edmonton, AB, Canada.

Intravaginal treatment with probiotics decreased the incidence of subclinical mastitis in dairy cows.
S. Iqbal, Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, University of Alberta, Edmonton, AB, Canada.

Improved feed intake and milk production in transition dairy cows treated intravaginally with probiotic bacteria.
S. Iqbal, Q. Zebeli, S. M. Dunn, and B. N. Ametaj*, University of Alberta, Edmonton, AB, Canada.

Effect of medicinal plants on immune system of broilers.
A. Naghizadeh, S. Rahimi*, S. Askari Rankouhi, K. Gharib Naseri, M. Lotfi, and M. Rezaei, Tarbiat Modares University, Tehran, Tehran, Iran.

In vitro effects of plant and mushroom extracts on immunological function of chicken lymphocytes and macrophages.
S.-H. Lee*, J. Lillehoj, Y.-H. Hong, S.-I. Jang, E. Lillehoj, and D. Bravo, 1Animal and Natural Resources Institute, Agricultural Research Service, US Department of Agriculture, Beltsville, MD, 2Department of Pediatrics, School of Medicine, University of Maryland, Baltimore, 3Panicosa S. A., Grand Saconnex, Geneva, Switzerland.

Yeast autolysate combined with probiotic strains: Investigation of health effects in vitro and ex vivo.
A. Ganner*, S. Masching, N. Reisinger, G. Schatzmayr, and T. Applegate, 1Biomin Research Center, Tulln, Austria, 2Biomin Holding GmbH, Herzogenburg, Austria, 3Purdue University, West Lafayette, IN.

Effects of a feed additive on neutrophil expression of immunomodulatory genes and production performance in periparturient dairy cows.
Potential of Metharrizium anisopliae as biological means to control Boophilus microplus in tropical dairy farms.
E. Maldonado-Siman*, P. Martinez-Hernandez, E. Galindo-Velasco, M. Alonso-Diaz, and R. Rodriguez-DeLara, 1Animal Science Department, University of Chapingo, Tecamachalco, Mexico, 2University of Colima, Tecoman, Colima, Mexico, 3Autonomous National University of Mexico, Martinez de la Torre, Veracruz, Mexico.

Effects of Globiigen egg protein on calf health and performance.
D. Wood*, R. Blome, and J. Sowinski, Animix, Juneau, WI.

The effect of three commercial herbal extracts on broilers performance.
Z. Teymourizadeh, S. Rahimi*, M. A. Karimi Torshizi, Tarbiat Modares University, Tehran, Iran.

Omega-3 fatty acid enrichment of chicken meat by using fish oil.
H. Salehi, S. Rahimi*, M. A. Karimi Torshizi, and A. Rahimi, 1Tarbiat Modares University, Tehran, Iran, 2Islamic Azad University, Tehran, Iran.

Comparison the effect of commercial probiotics on performance and morphology of small intestine in broiler chicks.
M. Soleimani, S. Rahimi*, M. A. Karimi Torshizi, and F. Niknafs, 1Tarbiat Modares University, Tehran, Iran, 2Zarbal Breeding Company, Amol, Mazandaran, Iran.

Subjective assessment versus objective measurement of FAMACHA and hematocrits in sheep and goats fed herbs and ivermectin as dewormers under natural grazing conditions.

Effects of short-term tocopherol (T) feeding on nitric oxide production and protein nitration following endotoxin (LPS) challenge in beef calves.
S. Kahl*, T. Elsasser, J. Shaffer, C. Li, K. Lebold, M. Traber, and S. Block, 1USDA, Agricultural Research Service, Beltsville, MD, 2Oregon State University, Corvallis, 3Archer Daniels Midland (ADM), Inc., Decatur, IL.

Interactive effects of active Saccharomyces cerevisiae and its cell wall material on intestinal microbial ecology during the receiving period of stressed beef cattle.

Effects of ochratoxin A on performance of broilers and the efficacy of a mycotoxin detoxifying product.

Effects of short-term tocopherol (T) feeding on structure-localized protein tyrosine nitration (pTN) patterns of mitochondrial ATPase following endotoxin (LPS) challenge in beef calves.
T. Elsasser*, S. Kahl, J. Shaffer, R. Castellano-Perez, C. Li, and S. Block, 1USDA, Agricultural Research Service, Beltsville, MD, 2Archer Daniels Midland (ADM), Inc., Decatur, IL.

Reserpine-induced changes of the small intestinal histology and the expression of genes relative to mucosal immunity in rat.
X.-Y. Zhu*, K.-J. Guo, F.-H. Liu, J. Yu, A. Lu, N.-W. Zhang, G. Cheng, P. Yin, N. Wang, and J.-Q. Xu, 1TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University, Beijing, China, 2Department of Animal Science and Technology, Beijing University of Agriculture, Beijing, China, 3Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team, Beijing, China.

Gastrointestinal motility and gastrointestinal hormones VIP and GAS expression in reserpine-induced FGID rats.
G. Jingyi, Z. Xiaoou, C. Fei, C. Guilin, L. Fenghua, * and X. Jianqin, 1China Agricultural University China Agricultural University, Beijing, China, 2Beijing University of Agriculture, Beijing, China, 3CAU-BUA TCVM Teaching & Research Team, Beijing, China.

Effects of medicinal plants on broilers performance, organs weight, small intestine morphology and GIT microflora.
A. Niknam, S. Rahimi*, J. Azimi, M. Hosein-zadeh, M. Moradi Nejad, and K. Seifi, Tarbiat Modares University, Tehran, Iran.

Breeding and Genetics

Dairy Cattle

Identification of small heat shock proteins in the bovine genome.

Use of partial least-square regression to predict SNP when some animals are genotyped with low density marker panels.
C. Dimarco*, G. Gaspa, R. Steri, S. Sorbolini, E. Pintus, and N. P. P. Macciotta, University of Sassari, Sassari, Italy.
Multiple trait genetic evaluation of linear type traits using genomic and phenotypic information in US Holsteins.
S. Tsuruta*, 1, I. Aguilar1,2, I. Misztal1, A. Legarra1, and T. J. Lawlor3, 1University of Georgia, Athens, 2INIA, Las Brujas, Uruguay, 3INRA, Castanet-Tolosan, France, 4Holstein Association USA Inc., Brattleboro, VT.

Genotype by environment interaction: Effects of nutritional management on production traits.
M. W. Dekleva*, 1, C. D. Dechow1, J. M. Daubert1, S. Bauck2, J. W. Blum3, and G. A. Varga1, 1The Pennsylvania State University, State College, 1IGENITY Livestock Production Business Unit, Duluth, Georgia, 2University of Bern, Switzerland.

Evaluation of the effect of inbreeding on age at first calving in Holstein cattle.
J. Bezdicek* and J. Riha, Agrovyzkum Rapotin s. r. o., Rapotin, Czech Republic.

Age at first calving in Holstein cattle in the United States.
J. Cole and D. Null*, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

Relationship of reason for lactation termination with genetic merit of Holsteins in the United States.
H. D. Norman, J. R. Wright, and S. M. Hubbard*, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

Comparison of Holstein service sire fertility for heifer and cow breedings with conventional and sexed semen.
H. D. Norman*, J. L. Hutchison, and P. M. VanRaden, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

Derivation of factors to estimate daily, fat, protein, and somatic cell score from one milking of cows milked three times daily.
M. M. Schutz*, 1Purdue University, West Lafayette, IN, 2USDA-ARS Animal Improvement Programs Laboratory, Beltsville, MD.

Derivation of factors to estimate daily milk yield from one milking of cows milked three times daily.
M. M. Schutz*, J. M. Bewley2, and H. D. Norman3, 1Purdue University, West Lafayette, IN, 2University of Kentucky, Lexington, 3USDA-ARS Animal Improvement Programs Laboratory, Beltsville, MD.

Genetic relationship between milk urea nitrogen and milk constituents in Holstein dairy cows.
N. Ghavi Hossein-Zadeh*1 and M. Ardalan2, 1Department of Animal Science, Faculty of Agriculture, University of Guilan, Rasht, Iran, 2Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran.

Genetic relationship between milk urea nitrogen and reproductive performance in Iranian Holsteins.
N. Ghavi Hossein-Zadeh*1 and M. Ardalan2, 1Department of Animal Science, Faculty of Agriculture, University of Guilan, Rasht, Iran, 2Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran.

Adjusted phenotypic trend estimation for peak milk yield of Iranian Holsteins milked three times daily.
H. Farhangfar*, 1Mashtani1, and J. Modaresi1, 1University of Birjand, Birjand, Iran, 2Agricultural Jihad Organisation, Birjand, Iran.

REML estimates of heritability and repeatability for monthly test-day milk yield of primiparous Iranian Holsteins.
A. Seyed Dokht*, H. Farhangfar2, A. A. Aslami Nezhad3, and M. Tahmorespou, 1Ferdowsi University of Mashhad, Mashhad, Iran, 2Birjand University, Birjand, Iran.

Correlation between milk components with regard to the season in Iranian dairy herds.
A. Laki*, S. Babaie, N. Hedayat-Evrigh, M. Dehghan-Banadaky, and K. Rezayazdi, Department of Animal Science, Campus of Agriculture, University of Tehran, Karaj, Tehran, Iran.

Comparison of fixed and random regression test-day models in genetic evaluation of Iranian Holsteins for protein yield.
M. Bashtani1, H. Farhangfar, H. Naeemipour, M. R. Asghari, A. Arab, and M. Jafari Tarbaghan, Birjand University, Birjand, Iran.

Estimation of udder composite in the Holstein population of Iran.
M. R. Bakhtiarizadeh*, M. Moradi Shahr Babak, and A. Pakdel, University of Tehran, Karaj, Tehran.

Bayesian estimates of genetic parameters for cystic ovarian disease, displaced abomasum and foot and leg diseases in Iranian Holsteins via Gibbs sampling.
N. Ghavi Hossein-Zadeh*1 and M. Ardalan2, 1Department of Animal Science, Faculty of Agriculture, University of Guilan, 2Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran.

Bayesian estimates of genetic parameters for metritis, retained placenta, milk fever, and clinical mastitis in Holstein dairy cows via Gibbs sampling.
N. Ghavi Hossein-Zadeh*1 and M. Ardalan2, 1Department of Animal Science, Faculty of Agriculture, University of Guilan, 2Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran.

Genetic relationships between somatic cell count, milk production and udder conformation traits in Iranian Holsteins.
M. R Sanjabi*, A. Gholibaigi Fard*, R. Vaez Torkshiti, A. Lava, and A. H. Ahadi1, 1Iranian Research Organization for Science and Technology, Tehran, Iran, 2Azad University, Karaj, Iran.
Dairy Foods
Microbiology

W43 Microbiological quality of pasteurized milk from Minas Gerais state, Brazil.
Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brasil.

W44 The relationships between somatic cell count and bacteriology on milk quality and production in dairy goats.

W45 Biodiversity of Enterococci in Egyptian dairy products.
S. Awad*, C. Snaauwaert1,2, P. Vandamme1, A. El Attar3, and M. El Soda4, 1Department of Dairy Science and Technology, Faculty of Agriculture, Alexandria University, Egypt, 2BCCM/LMG Bacteria Collection, Ghent University, Ghent, Belgium, 3Laboratory of Microbiology, Ghent University, Ghent, Belgium.

W46 Identification, characterization, and differentiation of bifidobacteria obtained from Ukraine.

W47 Buffering capacity affects starter bacteria in nonfat probiotic yogurt.
M. Michael, R. K. Phebus, and K. A. Schmidt*, Kansas State University, Manhattan.

W48 Identification of lactic acid bacteria in Taiwanese ropy fermented milk and evaluation of their microbial ecology in different milk.
K. N. Chen1, S. Y. Wang1, and M. J. Chen*, 1Tungnan University, Taipei, Taiwan, 2National Taiwan University, Taipei, Taiwan.

W49 Summary of a 2-year study involving screening, characterization, and environmental scanning of bacteria with the potential to produce ropy milk in a farm.
A. Laubscher*, J. Guo1, H. White2, B. Rossi Paneto3, A. Cano1, R. Cano2, and R. Jiménez-Flores3, 1Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, 2Biological Sciences Department, California Polytechnic State University, San Luis Obispo.

W50 Screening of Lactobacillus casei strains for the application of yogurt starter and probiotics.
J. K. Choi*, J. H. Im, and G. B. Kim, Department of Animal Science & Technology, Chung-Ang University, Anseong 456-756, South Korea.

W51 Effect of yogurt consumption on the human intestinal microbiota.
H. J. Kim*, J. S. Eom1, Y. T. Ahn2, J. H. Lee3, C. S. Huh2, and G. B. Kim1, 1Department of Animal Science and Technology, Chung-Ang University, Anseong 456-756, South Korea, 2Research and Development Center, Korea Yakult Co., LTD., Yongin 449-901, South Korea.

W52 The effect of fermented yogurt on the prevention and treatment of diarrhea in animal models.
J. H. Im*, J. K. Choi1, M. H. Lee1, J. H. Sim1, C. S. Huh1, and G. B. Kim1, 1Department of Animal Science & Technology Chung-Ang University, Anseong 456-756, South Korea, 2Research and Development Center, Korea Yakult Co., LTD., Yongin 449-901, South Korea.

W53 Effect of milk fermented by Lactobacillus rhamnosus on an experimental infection with Salmonella enterica ssp. enterica serovar Typhimurium in gnotobiotic and conventional mice.
A. H. Mendonça1, M. M. O. P. Cerqueira2, J. R. Nicoli2, M. O. Leite1, M. R. Souza2, L. M. Fonseca2, R. M. N. Drummond1, R. M. E. Arante2, and C. F. A. M. Penna2, 1Ministry of Agriculture, Brasilia, Distrito Federal, Brazil, 2Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

W54 Influence of bovine and caprine caseinomacropeptide on the viability of E. coli and L. rhamnosus in acidic conditions.
G. Robitaille*, C. Lapointe, D. Leclerc, and M. Britten, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

W55 Screening of β-galactosidase-containing probiotic for the production of galacto-oligosaccharides and its optimal preparation conditions.
Y. Gao, X. Mi, L. Feng, R. Zhong, B. Qian, and S. Zhang*, Department of Food Science and Technology, School of Agriculture and Biology, Shanghai Jiao Tong University, Shanghai, China.

W56 Characterization and partial purification of antimutagenic peptide produced by Lactobacillus plantarum CNU 2116.
J. W. Jeong*, B. H. Yoon1, D. J. Park1, Y. S. Son1, and S. Oh1, 1Division of Animal Science, Chonnam National University, Gwangju, South Korea, 2Division of Bioscience & Technology, Korea University, Seoul, South Korea, 3Korea Food Research Institute, Gyeonggi-do, South Korea.

W57 Characterization of microorganisms isolated from biofilms formed on whey reverse osmosis membranes.
A. C. Biswas*, M. Avadhanaula, S. Anand, and A. Hassan, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.
Transcriptional analysis of a very broad spectrum lantibiotic produced by Bifidobacterium longum DJO10A.
J. H. Lee*, X. Li, and D. J. O’Sullivan, University of Minnesota, St Paul.

Comparison of the Baird-Parker agar, Baird-Parker-RPF and Petrifilm Staph Express in the detection and enumeration of Staphylococcus coagulase positive in raw milk.

Influence of low-pressure homogenization on growth of Streptococcus thermophilus.
T. Muramalla¹ and K. Aryana*¹,², ¹Louisiana State University, Baton Rouge, ²Louisiana State University Agricultural Center, Baton Rouge.

Influence of mild pulsed electric field conditions on the growth of Streptococcus thermophilus.
N. Najim¹ and K. Aryana*¹,², ¹Louisiana State University Agricultural Center, Baton Rouge, ²Louisiana State University, Baton Rouge.

Effect of mild sonication on the growth of Streptococcus thermophilus.
M. Moncada*¹,² and K. Aryana*¹,², ¹Louisiana State University Agricultural Center, Baton Rouge, ²Louisiana State University, Baton Rouge.

Low-pressure homogenization effects on bile tolerance of Streptococcus thermophilus.
T. Muramalla*¹ and K. Aryana*¹,², ¹Louisiana State University, Baton Rouge, ²Louisiana State University Agricultural Center, Baton Rouge.

Acoustical emissions generated by bacteriophages sk1 and ml3 using Lactococcus lactis ssp. lactis C2 host.
A. K. Wardani¹, C. L. Hicks*², and J. M. Stencel³, ¹University of Brawijaya, Malang, Indonesia, ²University of Kentucky, Lexington, ³Tribo Flo Separations, Lexington, KY.

Viability of bifidobacteria and lactobacilli in skim milk with shiitake mushroom extract during refrigerated storage.
O. Hassan*¹, O. S. Isikhuemhen⁴, S. A. Ibrahim⁴, A. AbuGhazaleh⁴, and D. Song⁴, ¹North Carolina A &T State University, Greensboro, ²Southern Illinois University, Carbondale.

Microbiological quality of dairy protein supplements sold in Saudi Arabia markets.
S. O. Aljaloud*¹, D. Song², A. M. Fraser¹, and S. A. Ibrahim², ¹Clemson University, Clemson, SC, ²North Carolina Agricultural and Technical State University, Greensboro.

Antimicrobial activity and composition of oregano essential oils from different climate zones of Colombia.
L. Betancourt*¹,², R. Patiño³, V. Phandanavong⁴, C. Ariza-Nieto³, and G. Afanador-Téllez³, ¹Universidad de La Salle, Bogotá, Colombia, ²CORPOICA, Bogotá, Colombia, ³Universidad Nacional de Colombia, Bogotá, Colombia.

Dairy Foods Processing

Effect of processing on the milk fat globule membrane constituents.
X. Elías-Argote* and R. Jiménez-Flores, California Polytechnic State University San Luis Obispo.

Evaluation of vacuum packaging on particle size, particle density and solubility of dry dairy powders.
H. Eshpari* and P. S. Tong, California Polytechnic State University, San Luis Obispo.

A new cold gelation method for producing calcium-fortified whey protein gels.
Y. C. Tseng and C. L. Hicks*, University of Kentucky, Lexington.

Use of caseinomacropeptide quantification by high performance liquid chromatography to estimate cheese whey addition in fermented milk beverages.

Comparison of solubility with methods for determining denaturation in whey protein.
M. D. Allen* and P. S. Tong, California Polytechnic State University, San Luis Obispo.

Whey protein fractionation with supercritical CO₂: Process optimization.
L. M. Bonnaillie* and P. M. Tomasula, US Department of Agriculture, Agricultural Research Services, Eastern Regional Research Center, Wyndmoor, PA.
W74  Effect of applying power ultrasounds during the thermal denaturation of whey proteins in the presence of buttermilk.  
M. Saffon*, M. Britten, and Y. Pouliot. 1STELA Dairy Research Center, Institute of Nutraceuticals and Functional Food (INAF), Université Laval, Québec, QC, Canada, 2Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada, St-Hyacinthe, Québec, Canada.

W75  Partitioning of minerals and protein using dialysis at different temperatures.  
N. On-Nom*, A. Grandison, and M. Lewis, University of Reading, Reading, Berkshire, UK.

W76  Measurement of pH and ionic calcium at high temperatures and their effect on the heat stability of milk supplemented with calcium chloride.  
N. On-Nom*, M. Lewis, and A. Grandison, University of Reading, Reading, Berkshire, UK.

W77  Production of single cell oil during growth of Aspergillus species on whey.  
A. Akpinar-Bayizit*, L. Yilmaz-Ersan, and T. Ozcan, Uludag University, Department of Food Engineering, Bursa, Turkey.

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Protein

W78  The effect of lysine and methionine on milk protein mRNA expression of bovine mammary epithelial cells in vitro.  

W79  Identification of bovine casein phosphorylation using TiO2 enrichment in combination with nano-ESI-MS/MS.  

W80  Developmental changes in the bovine whey proteome during the transition from colostrum to milk.  

W81  Formation of nanofibers and hydrogels from a milk-derived peptide.  
M.-M. Guy*, N. Voyer*, S. F. Gauthier, and Y. Pouliot*. 1STELA Dairy Research Center, Institute of Nutraceuticals and Functional Foods (INAF), Université Laval, Québec, Canada, 2Department of Chemistry and PROTEO Protein Structure, Function and Engineering Research Network, Université Laval, Québec, Canada.

Extension Education

W82  Assessing learning outcomes: A comprehensive dairy cattle nutrition curriculum for practicing veterinarians.  
G. M. Schuenemann*, M. L. Eastridge, W. P. Weiss, J. D. Workman, S. Bas, and P. Rajala-Schultz, The Ohio State University, Columbus.

W83  A self-powered smart wireless identification and tracking sensor prototype for production agriculture applications.  
K. Dhakal*, J. F. Keown, and H. Sharifi, 1Department of Animal Science, University of Nebraska-Lincoln, 2Department of Computer and Electronics Engineering, University of Nebraska-Lincoln.

W84  Impact of the 2009 economic crisis on Idaho dairies.  

W85  Nuisance fly production capacity of three types of manure handling systems.  
G. E. Higginbotham*, A. C. Gerry, C. C. Collar, and L. D. Reed, University of California Cooperative Extension, Fresno, University of California, Riverside, 2University of California Cooperative Extension, Hanford, 4513 Fortuna Ave., Modesto, CA.

W86  Examining the dairy workforce in order to improve labor efficiency.  

W87  Effect of bedding material on flies, and behavior and innate immunity of calves reared in hutches.  
K. D. Gay*, S. D. Eicher, C. S. Wilcox, J. A. Bridges, M. H. Rostagno, S. E. Charley, M. J. Grott, R. E. Williams, and M. M. Schutz, Purdue University, West Lafayette, IN, USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN.
W88 Management practices utilized by high-producing Kentucky dairy herds.
C. O. Coombs and J. M. Bewley*, University of Kentucky, Lexington.

W89 Organic milk production in Maine: Attributes, costs, and returns.

W90 Effectiveness of genetic evaluations in predicting daughter performance in individual herds.
H. D. Norman†, J. R. Wright*, C. D. Dechow‡, and R. C. Goodling Jr. †, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, ‡Pennsylvania State University, University Park.

W91 Winter feeding strategies for lactating organic dairy cows.

W92 A milker’s school for international refugees resettled in Idaho.
J. C. Dalton**, K. S. Jensen‡, R. Manzo‡, and L. Whiteford†, ‡University of Idaho, Caldwell, †University of Idaho, Owyhee County, ‡International Rescue Committee, Boise, ID.

W93 Limitations and opportunities of beef and dairy operations for the use of ethanol co-products.
J. I. Navarro*, L. J. Snyder†, R. P. Lemenager†, and L. S. Lake‡, †Purdue University, West Lafayette, IN, ‡University of Wyoming, Laramie.

W94 Farm animal welfare: Assessing public concern and attitudes.
D. R. Deemer*, J. A. Pempek*, L. M. Lobao†, J. C. Coleman‡, and M. L. Eastridge†, †The Ohio State University, Columbus, ‡Monash University, Clayton, Victoria, Australia.

W95 Reproductive indicators in dairy cattle enterprises with different technological level.

W96 Case study: Characterization of lying behavior in dairy cows transitioning from a freestall barn to a compost bedded pack barn.
C Gravatte*, C Combs, and J Bewley, University of Kentucky, Lexington.

W97 Composting school: An educational tool to bring together dairy producers and other community members.
M. E. de Haro Marti* and J. A. Robbins†, †University of Idaho, Gooding, ‡University of Idaho, Jerome.

Food Safety 2

W98 Efficacy of ultraviolet light systems for control of microorganisms in poultry and beef brine and marinade solutions.
K. L. Beers*, P. E. Cook, C. W. Coleman, and A. L. Waldroup, MCA Services, Rogers, AR.

W99 Antimicrobial susceptibility profile of enterotoxigenic Staphylococcus sp. recovered from foodborne outbreaks in Minas Gerais state, Brazil, from 1998 to 2002.

W100 Occurrence and antimicrobial resistance of Campylobacter jejuni isolated from poultry carcasses commercialized at the Federal District area in Brazil.
A. P. Santana*, D. C. Ruy‡, H. M. Moura‡, and S. Perecmanis‡, †Universidade de Brasilia, Brasilia, DF, Brazil, ‡Universidade de Brasilia, Brasilia, DF, Brazil, †Universidade de Brasilia, Brasilia, DF, Brazil, ‡Universidade de Brasilia, Brasilia, DF, Brazil.

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W102 Effects of dietary antimicrobials on fecal shedding of Campylobacter, Salmonella, and Shiga-toxin producing Escherichia coli in production swine.
J. E. Wells*, N. Kalchayanand, E. D. Berry, and W. T. Oliver, USDA, ARS, US Meat Animal Research Center, Clay Center, NE.

W103 Persistent effect of thymol and diphenylidonium chloride against Campylobacter coli in vitro.
N. A. Krueger*, R. C. Anderson, T. R. Callaway, T. S. Edrington, and D. J. Nisbet, USDA-ARS Southern Plains Agriculture Research Center, Food and Feed Safety Research Unit, College Station, TX.
W104  Evaluating different gas delivery methods that create a microaerophilic environment for culturing Campylobacter jejuni.
M. D. Haines*, K. N. Eberle, C. D. McDaniel, and A. S. Kiess, Mississippi State University, Mississippi State.

W105  Aflatoxicosis in Haiti: Detection and detoxification strategies.
M. E. Filbert* and D. L. Brown, Cornell University, Ithaca, NY.

W106  Conjugated linoleic acid does not modify liver histology and hepatic triglyceride content in young pigs.

Forages and Pastures
Harvested Forages

W107  Use of Pleurotus ostreatus to change the nutritional quality of maize stover.

W108  Effect of the fermented apple pomace (Manzarina) on the rumen epithelia growth with lamb feedlot diets.
C. Rodríguez-Muela*, H. E. Rodríguez-Ramírez, A. Grado, A. Corral, O. Ruiz-Barrera, A. Arzola, and R. Bocourt, Universidad Autónoma de Chihuahua, Chihuahua, México, Instituto de Ciencia Animal, La Habana, Cuba.

W109  Effects of ensiling king grass with Albizia lebeck on fermentation and nitrogenous compounds of silage mixtures.
T. Clavero* and R. Razz, Centro de Transferencia de Tecnología en Pastos y Forrajes, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.

W110  Detection of mycophenolic acid and roquefortine C mycotoxins in Canadian corn silage.
H. V. L. N. Swamy* and N. A. Karrow, *Altech Canada, Guelph, ON, Canada, *University of Guelph, Guelph, ON, Canada.

W111  Fermentation profile over nine months of storage of brown midrib and non-brown midrib hybrid corn silage.

W112  Herbage mass, botanical and chemical composition of forage sorghum and annual legumes in monoculture and intercropped.
R. W. Colbert, E. Valencia*, and J. Beaver, University of Puerto Rico, Mayaguez, Mayaguez, PR.

W113  Comparisons among predictive equations and NIR for determination of in vitro indigestible NDF of hay crop silages.
R. Ward**, S. Weaver1, and R. A. Patton1, 1Cumberland Valley Analytical Services, M au gansville, MD, 2Nittany Dairy Nutrition, M irfillburg, PA.

W114  Relating dry matter density to dry matter loss within corn silage bunker silos.

W115  Silo-King improves dry matter (DM) recovery and lowers the yeast, mold, and clostridia populations in high quality alfalfa balage.

W116  Nutritional value of corn silage associated with additives.
R. H. de Tonissi e Buschinielli Goes**, E. S. Myagi, K. A. de Souza, K. A. Guimarães Nogueira1, R. A. Patussi, M. G. de Menezes Gressler1, C. E. Dambros2, and E. R. de Oliveira1, 1Universidade Federal da Grande Dourados, Dourados, MS, Brazil, 2Universidade Federal de Goiás, Goiânia, GO, Brazil.

W117  Nutritive value and fermentation parameters of warm-season grass silage.

W118  Chemical composition and nutritive value of some cowpea (Vigna unguiculata L. Walp) haulm varieties.

W119  Silage characteristics, and nutritive value of sugar beet tops and crown harvested by two different methods.
M. Raisianzadeh*, M. Danesh2, H. Fazaeli3, and M. Nourozi3, 1Khurasan Agriculture and Natural Resources Research Center, Iran, 2Ferdosi university of mashhad, Iran, 3Animal Science Research Institute, Karaj, Iran.
W120 Dry matter of corn at harvest alters whole plant chemical composition and predicted milk yields.
P. M. Walker1, J. M. Carmack2*, L. H. Brown3, and F. N. Owens4, 1Department of Agriculture, Illinois State University, Normal, 2Pioneer Hi-Bred International, A DuPont Business, Johnston, IA.

W121 Effect of bunker silo sidewall plastic on fermentation, nutrient content and digestibility of corn silage.
K. E. Griswold1*, E. E. McDonnell2, L. Kung Jr., and P. H. Craig3, 1Penn State Cooperative Extension, Lancaster, 2University of Delaware, Newark, 3Penn State Cooperative Extension, Dauphin.

W122 Quality traits of the stem from corn hybrids for silage production according to the maturity stage.
M. Zopollato1*, L. G. Nussio1, J. O. Sartori1, C. M. M. Bittar1, P. Schmidt1, and G. B. Moura2, 1University of Sao Paulo, Piracicaba, Brazil, 2University of Nebraska, Lincoln, 3Federal University of Parana, Curitiba, Brazil.

W123 Butyric acid in commercially analyzed legume silage samples.
L. R. Jones1* and R. T. Ward2, 1American Farm Products, Inc., Ypsilanti, MI, 2Cumberland Valley Analytical Services, Inc., Maugansville, MD.

W124 Environmental factors affecting changes in dry matter content of corn planted for summer or fall silage harvest in a subtropical climate.
J. K. Bernard1*, B. T. Scully2, and J. S. Barlow3, 1University of Georgia, Tifton, 2USDA-ARS, Tifton, GA.

W125 Relationship of vomitoxin levels in corn silage to in vitro dry matter digestibility.
R. Ward4 and R. A. Patton5*, 1Cumberland Valley Analytical, Maugansville, MD, 2Nittany Dairy Nutrition, Mifflinburg, PA.

W126 Fermentation and ruminal degradability of corn silage inoculated with Lactobacillus buchneri.
F. C. Basso1, R. A. Reis1*, D. M. Figueiredo1, D. A. Mota1, K. A. Magalhães1, T. F. Bernardes1, and J. F. H. Rodrigues1, 1UNESP/FCAV, Jaboticabal, São Paulo, Brazil, 2UFAM, Parintins, Amazonas, Brazil, 3UFRA, Pará, Belém, Brazil.

W127 Dispersion of an inert marker in water on freshly chopped whole plant corn by two methods to simulate addition of an inoculant.
J. M. Lim1*, M. C. Santos, J. P. Rigueira, M. C. Der Bedrosian, and L. Kung Jr., 1University of Delaware, Newark.

W128 Treating first-cutting alfalfa in Michigan with Silo-King reduces heating during the ensiling process.

W129 Effect of harvest moisture, bale wrapping, and an organic acid on forage quality in grass.

W130 Effects of sulfite-based preservatives on preservation and aerobic stability of alfalfa haylage and corn silage.
C. J. Fu*, T. W. Clark, and D. V. Dhuyvetter, Ridley Nutrition Solutions, Ridley Inc., Mankato, MN.

W131 Effect of alfalfa entries selected to tolerate agricultural machinery traffic on forage yield and regrowth.
J. Santillano-Cázares*1 and J. L. Caddel2, 1Universidad Autónoma de Baja California, Mexicali, Baja California, México, 2Oklahoma State University, Stillwater.

W132 Influence of maturity on leaf fiber and protein fractions of different alfalfa varieties.
A. Palmonari*, M. Fustini, G. Canestrari, G. Biagi, and A. Formigoni, Università di Bologna, Bologna, Italy.

W133 Effect of a bacterial inoculant on the quality of and nutrient losses from corn silage produced in farm-scale silos.
O. C. M. Queiroz1*, A. T. Adesogan1, K. G. Arriola2, and M. F. Queiroz2, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department of Animal Sciences, UNESP, Jaboticabal, SP, Brazil.

W134 Changes in cell wall fractions and in vitro dry matter digestibility of corn silage associated with additives.

W135 Effect of oxygen barrier film on the storage temperature and top losses of corn silage in stack silo.
F. C. Basso1, R. A. Reis1*, T. F. Bernardes1, E. C. Lara1, F. B. Assis1, M. Nogueira1, and A. P. T. P. Roth1, 1UNESP/FCAV, Jaboticabal, São Paulo, Brazil, 2UFRA, Belém, Pará, Brazil.

W136 Effects of microbial inoculant on fermentation, microbial dynamics and aerobic stability of corn silage.
F. C. Basso1, R. A. Reis1*, E. C. Lara1, F. B. Assis1, M. Nogueira1, A. P. T. P. Roth1, and T. F. Bernardes1, 1UNESP/FCAV, Jaboticabal, São Paulo, Brazil, 2UFRA, Belém, Pará, Brazil.

W137 In vitro gas production and microbial protein synthesis in alfalfa-thimothy mixtures.
F. Hassanat1*, G. Tremblay2, G. Allard3, G. Bélanger1, A. Bertrand2, Y. Castonguay2, R. Michaud2, and R. Berthiaume1, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Agriculture and Agri-Food Canada, Québec, QC, Canada, 3Faculté des sciences de l’agriculture et de l’alimentation, Université Laval, Québec, QC, Canada.
W138  Prediction of Tanzânia grass dry mass production using agrometeorological parameters.
L. C. Araujo*1, P. M. Santos2, J. R. Pezzopane3, and P. G. da Cruz1, "Luiz de Queiroz" College of Agriculture/USP, Piracicaba, São Paulo, Brazil; 2Embrapa Southeast Cattle, São Carlos, São Paulo, Brazil.

W139  Effects of chemical additives on the ensilage of sugarcane.
A. F. Pedroso*, W. Barioni Jr., G. B. Souza, and V. R. Del Santo, Brazilian Agricultural Research Corporation - Embrapa, São Carlos, SP, Brazil.

W140  Effect of cutting management (PM vs. AM) and maceration on forage total nonstructural carbohydrates concentration and cattle preference.
G. Raggio*1, A. L. Tucker1, M. Mongeon2, R. Bergeron1, and R. Berthiaume3, 1Campus Alfred Université de Guelph, Alfred, Ontario, Canada; 2Ministry of Agriculture, Food and Rural Affairs, Alfred, Ontario, Canada; 3Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada, Lennoxville, Canada.

W141  Effect of leukemia inhibitory factor on feed intake and body temperature in sheep.
J. L. Sartin*1, D. L. Marks2, B. K. Whitlock1, J. A. Daniel1, and B. P. Steele2, 1Auburn University, Auburn, AL; 2Oregon Health Sciences University, Portland, 3University of Tennessee, Knoxville, 4Berry College, Mt Berry, GA.

W142  Effects of late gestation metabolizable protein (MP) supplementation on ewe organ and blood parameters.
T. J. Swanson*1, L. A. Lekatz1, T. L. Neville1, M. L. Van Enom2, C. S. Schauer2, K. R. Maddock Carlin1, C. J. Hammer1, and K. A. Vonnahme1, 1North Dakota State University, Fargo, 2Hettinger Research Extension Center, Hettinger, ND.

W143  Effect of PFKM and TFDP2 gene expression on muscle growth in sheep.
J. W. Buchanan*1, M. L. Thonney2, and R. G. Mateescu1, 1Oklahoma State University, Stillwater, 2Cornell University, Ithaca, NY.

W144  Excessive maternal selenium intake induces inflammatory response in the ovine fetal gut.
H. Wang*1, J. Zhao1, Y. Huang1, X. Yan1, A. Meyer2, M. Du1, K. Vonnahme2, L. Reynolds2, J. Caton2, and M. J. Zhu1, 1Department of Animal Science, University of Wyoming, Laramie, 2Department of Animal Science, North Dakota State University, Fargo.

W145  Serum concentrations of ghrelin, IGF-I, and prolactin in Rambouillet lambs during the preweaning period.
C. D. Felker*, M. J. Hendricks, K. A. Jurado, A. D. Stapp, L. E. Camacho, and D. M. Hallford, New Mexico State University, Las Cruces.

W146  Patterns of fat growth in the primal cuts of beef composites.
L. A. Goonewardene*1, Z. Wang1, R. W. Seneviratne1, J. A. Basarab1, J. Stewart-Smith1, J. L. Aalhus1, M. A. Price2, and E. K. Okine2, 1Alberta Agriculture and Rural Development, Edmonton, AB, Canada; 2University of Alberta, Edmonton, AB, Canada; 3BeefBooster Inc., Calgary, AB, Canada, 4Agriculture and Agri-Food Canada, Lacombe, AB, Canada.

W147  Prepartum supplementation in primiparous beef cows affected hepatic IGF-I mRNA expression in female calves.
J. Laporta*1, A. L. Astessiano1, A. Scarsi1, R. Pérez-Clariget1, G. Quintans2, and M. Carriquiry1, 1School of Agronomy, Univesidad de Chile, Santiago, Chile; 2Center for the Study of Fetal Programming, Faculty of Medicine, University of Chile, Santiago, Chile.

W148  Glucagon-like peptide 2 may mediate growth and development of the bovine gastrointestinal tract.
E. E. Connor*1, R. L. Baldwin1, A. V. Capuco2, C. M. Evock-Clover1, S. E. Ellis2, and K. S. Sciabica1, 1USDA-ARS, BARC, Beltsville, MD, 2Clemson University, Clemson, SC, 3Beckman Coulter, Inc., Brea, CA.

W149  Effects of maternal metabolizable protein supply on fetal organ weights.
T. L. Neville*1, L. A. Lekatz1, T. J. Swanson1, M. L. Van Enom2, C. S. Schauer2, K. R. Maddock Carlin1, C. J. Hammer1, and K. A. Vonnahme1, 1Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo, 2Hettinger Research Extension Center, North Dakota State University, Hettinger.

W150  Nutrient restriction from early to mid-gestation in the cow increases offspring adipocyte size at slaughter.
C. B. Tousley1, N. M. Long*1, S. P. Ford1, 2, W. J. Means2, B. W. Hess1, and M. Du1, 1Center for the Study of Fetal Programming, University of Wyoming, Laramie, 2Department of Animal Science, University of Wyoming, Laramie.

W151  Two messenger RNA targets, programmed cell death protein 4 and phosphatase and tensin homolog, of microRNA-21 are expressed in cultured bovine adipocytes.
S. L. Pratt*1, T. A. Burns, and S. K. Duckett, Clemson University, Clemson, SC.

W152  MicroRNA-21 and its messenger RNA targets programmed cell death protein 4 and phosphatase and tensin homolog are expressed in bovine adipose tissue.
S. L. Pratt*, E. Curry, T. A. Burns, and S. K. Duckett, Clemson University, Clemson, SC.
Both growth hormone and signal transducer and activator of transcription 5b inhibit glycerol-3-phosphate dehydrogenase activity and CCAAT/enhancer binding protein α mRNA expression in differentiating bovine preadipocytes. L. Zhao*, B. A. Corl, and H. Jiang, Virginia Polytechnic Institute and State University, Blacksburg.

Primary preadipocytes can be isolated, propagated, and differentiated from bovine intermuscular fat harvested 48 h postmortem. T. A. Burns*, S. K. Duckett, and S. L. Pratt, Clemson University, Clemson, SC.

Trans-10, cis-12 conjugated linoleic acid induces adipogenic gene expression in single and co-cultures of bovine preadipocytes and myoblasts. S. H. Choi*, K. Y. Chung2, G. Go3, C. W. Choi3, B. J. Johnson2, and S. B. Smith1, 1Department of Animal Science, Texas A&M University, College Station, 2Department of Animal and Food Science, Texas Tech University, Lubbock, 3National Institute of Animal Science, Suwon, Gyeonggi, Korea.

Growth hormone stimulates liver expression of fibroblast growth factor 21 mRNA in Cattle. J. Yu*2, A. Wang1, S. Elewwarapu1, and H. Jiang2, 1Sichuan Agricultural University, Yaan, Sichuan, China, 2Virginia Polytechnic Institute and State University, Blacksburg.

Abundance of growth hormone secretagogue receptor and PPARy2 in longissimus dorsi of beef cattle. C. L. Delvaux*, J. S. Jennings, and A. E. Wertz-Lutz, South Dakota State University, Brookings.


Canonical relationships of body shape of grazing bulls under tropical conditions. H. J. Fernandes*, L. O. Tedeschi, M. F. Paulino, M. O. Porto, and L. M. Paiva, 1State University of Mato Grosso do Sul, Aquidauana, Brazil, 2Federal University of Viçosa, Viçosa, MG, Brazil, 3Texas A&M University, College Station.

Comparison of mathematical functions to describe the growth of grazing bulls in tropical conditions. H. J. Fernandes*, L. O. Tedeschi, M. F. Paulino, A. G. Silva, and L. M. Paiva, 1State University of Mato Grosso do Sul, Aquidauana, Brazil, 2Texas A&M University, College Station, 3Federal University of Viçosa, Viçosa, MG, Brazil.

Expression of specific genes regulating mammary growth in pre-pubertal Holstein heifers. F. Soberon*, M. J. Meyer, and M. E. Van Amburgh, Cornell University, Ithaca, NY.


The effect of automated feeder system feeding curves (dilution/weaning age) on growth and health of calves fed milk replacer. T. J. Earleywine*, B. L. Miller, and T. E. Johnson, Land O’Lakes, Inc., Webster City, IA.

The effect of automated feeder system feeding curves (weaning age) on growth and health of calves fed milk replacer. T. J. Earleywine*, B. L. Miller, and T. E. Johnson, Land O’Lakes, Inc., Webster City, IA.

Strategies for feeding full potential rates of calf milk replacer: Two feedings daily and weaned at 7 weeks vs. three feedings daily and weaned at 6 weeks. B. L. Miller*, T. J. Earleywine, and T. E. Johnson, Land O’Lakes, Inc., Webster City, IA.
W170 Factors affecting pregnancy rate of recipient mares to embryo transfer.  
L. D. Wallace*, K. J. Stutts, and D. W. Ricks, Sam Houston State University, Huntsville, TX.

W171 Growth models for horses differ based on date of birth.  
A. L. Graeff* and W. B. Stanier, The Pennsylvania State University, University Park.

W172 The impact of molasses-based blocks versus sweet feed on blood glucose in horses.  
C. D. Gunkel*, J. S. Drouillard, L. W. Murray, and T. L Slough, Kansas State University, Manhattan.

W173 Short term selenium depletion and oxidative stress in the horse.  
M. Brummer*, S. H. Hayes, J. E. Earing, S. M. McCown, and L. M. Lawrence, University of Kentucky, Lexington.

W174 In vivo digestibility and mean retention time estimates of young and mature horses receiving the same diet.  

W175 Effect of grazing fall pasture on indicators of hindgut pH and fermentation characteristics in horses.  
A. C. Pearson, P. D. Siciliano*, S. J. McLeod, and V. Fellner, North Carolina State University, Raleigh.

W176 Summary of equine pastures utilizing a line point transect to measure vegetative cover to reduce sediment and nutrient losses, enhancing pasture quality.  
A. Swinker*, D. Foulk1, J. Malot2, S. Truax2, J. Weld1, and M. Harper1, 1Pennsylvania State University, 2USDA Natural Resources Conservation Service, Harrisburg, PA.

W177 Segregation of AB_098561: c. 1470G>A snp of the serotonin transporter gene (SLC6A4) in Mangalarga Brazilian horses.  
Lidia Arneiro*1,2, Marcílio Mota1,2, and Rogério Curti1, 1Universidade Estadual Paulista, Jaboticabal, São Paulo, Brasil, 2Universidade Estadual Paulista, Botucatu, São Paulo, Brasil.

W178 The use of equine blood parameters to identify chronic exposure to feed-borne Fusarium mycotoxins: A field study.  
M. Mortson*, C. K. Girish, and T. K. Smith, University of Guelph, Guelph, Ontario, Canada.

W179 Influence of velocity on stride variables of the Wilbur-Cruce Mission Horse intermediate gait.  
M. Nicodemus*1 and J. Beranger1, 1Mississippi State University, Mississippi State, 2American Livestock Breeds Conservancy, Pittsboro, NC.

W180 Nutraceutical extracts affect oxidative stress and antioxidant status in intensely exercising horses.  

W181 Whole farm balance of nitrogen and phosphorus on horse farms in the Chesapeake Bay watershed.  
M. T. Harper*, A. Swinker, and K. B. Kephart, Pennsylvania State University, University Park.

W182 Effect of dietary energy manipulation on mares and their foals: Foaling parameters.  
K. N. Winsco1, J. L. Lucia*2, C. J. Hammer2,3, and J. A. Coverdale1, 1Department of Animal Science, Texas A&M University, College Station, 2Department of Animal Sciences, North Dakota State University, Fargo, 3Center for Nutrition and Pregnancy, Fargo, ND.

W183 Comparison of a commercially available glucometer to a standardized laboratory method for glucose analysis in healthy horses.  
K. O’Diam*1, J. Sylvester2, and K. Cole3, 1The Ohio State University, Columbus, 2MARS Horsecare US, Inc., Dalton, OH.

International Animal Agriculture 1

W184 Effects on lactation performance when slick hair gene is simulated in dairy cattle in the tropics.  
R. M. Mejía*1,2, J. A. Ortúño3, G. J. Lascano2, and M. Vélez1, 1Zamorano University, El Zamorano, Honduras, 2The Pennsylvania State University, University Park.

W185 Effects of a direct-fed microbial product on milk production by crossbred dairy cows in the Brazilian Cerrado.  
R. D. Sainz*1, C. U. Magnabosco1,2, R. A. Carnevali1, R. Guimaráes Jr.1, M. M. S. Mamede2,3, J. R. Costa Jr.1,2, and E. A. Filgueiras4, 1University of California, Davis, 2Embrapa Cerrados, Planaltina, DF, Brazil, 3Embrapa Arroz e Feijão, Santo Antonio de Goiâs, GO, Brazil, 4Associação Goiana de Criadores de Zebu, Goiânia, GO, Brazil, 3Universidade Estadual de Goiâs, Goiânia, GO, Brazil, 4Bioformula, Goiânia, GO, Brazil.

W187 System dynamics ex ante decision support for caprine initiatives in southern Mexico.

J. A. Rivera-Ahumada1, A. S. Juárez-Reyes1,4, H. Bernal-Barragán1, M. A. Cerrillo-Soto*1,4, F. G. Ríos-Rincón1,4, A. Estrada-Angulo3,4, and M. Guerrero-Cervantes1,4, 1Universidad Juázuel del Estado de Durango, Durango, Dgo., México, 2Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México, 3Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 4Red Internacional de Nutrición y Alimentación en Rumiantes, Durango, Dgo, México.

W188 Biomass production and nutritional value of wheat and oat hydroponic forages sowed at three densities.
J. A. Rivera-Ahumada1, A. S. Juárez-Reyes1,4, H. Bernal-Barragán1, M. A. Cerrillo-Soto*1,4, F. G. Ríos-Rincón1,4, A. Estrada-Angulo3,4, and M. Guerrero-Cervantes1,4, 1Universidad Juázuel del Estado de Durango, Durango, Dgo., México, 2Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México, 3Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 4Red Internacional de Nutrición y Alimentación en Rumiantes, Durango, Dgo, México.

W189 Growth potential of village chicken in Nigeria.

M. Bejaei* and K. M. Cheng, The University of British Columbia, Vancouver, BC, Canada.

W190 Effects of demographic characteristics and attitudes of consumers on table egg consumption.
M. Bejaei* and K. M. Cheng, The University of British Columbia, Vancouver, BC, Canada.

W191 Effect of dry ammoniation on the chemical composition and digestibility in vitro in the mesocarp of the fruit and empty bunches of african oil palm.

W192 Nutritive value of Henequen (Agave fourcroydes Lem.) pulp as ruminant feed.
E. González–García*1,2, O. Cáceres2, F. Ojeda2, and R. Delgado2, 1INRA, UMR 868, Élevage des Ruminants Regions Chaudes, Montpellier 34090, France, 2Estación Experimental de Pastos y Forrajes “Indio Hatuey”, Matanzas 44280, Cuba.

W193 Economic weight of some production and functional traits of dairy cattle.
F. Szabó*, Z. Fekete1, J. Wolf2, and M. Wollfová2, 1University of Pannonia Georgikon Faculty, Keszthely, Hungary, 2Institute of Animal Science, Uhrinéves, Prague, Czech Republic.

Lactation Biology 2

W194 Effect of feeding level and milking frequency in early lactation on milk production in dairy cattle.

W195 Expression of key metabolic indicators of energy metabolism across mammary gland development and lactation in dairy cows.
L. J. Ren, H. L. Tong, Q. Z. Li, and X. J. Gao*, Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China.

W196 Insulin stimulates glucose uptake by regulating cell viability and expression of glucose transporter 8 gene in bovine mammary epithelial cells.
K. Zhao, H. Y. Liu*, and J. X. Liu, Institute of Dairy Science, MOE Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, China.

W197 Pathogen-specific and dose-dependent response of the bovine mammary gland to lipopolysaccharide from E. coli and lipoteichoic acid from S. aureus.
R. M. Bruckmaier*, E. T. Arnold, and O. Wellnitz, Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bremgartenstr. 109a, 3001 Bern, Switzerland.

W198 Greater milk yield is related to increased DNA and RNA content but not to mRNA abundance of selected genes in sow mammary tissue.
C. Farmer*, M. F. Palin1, J. F. Trott2, and R. C. Hovey2, 1Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, QC, Canada, 2Dept. of Animal Science, University of California, Davis.
W199 5'-Untranslated region haplotypes of beta-2-microglobulin exon IV in Chinese Holstein dairy cows and its association with IgG1 concentration and mass in milk.
C. Zhang1,2, G. Liu1, J. Wang1, D. Bu1, L. Zhou1, S. Zhao1, and Y. Yang1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2College of Animal Science and Technology, Yangzhou University, Yangzhou, China.

W200 How does increased milking frequency stimulate milk production?
M. Dehghan-Banadaky*, M. Eslamizad, K. Rezayazdi, H. Kohram, and R. Heydari, University of Tehran, Karaj, Tehran, Iran.

W201 Impact of duration of milk storage in the mammary gland on milk composition throughout milking.
M. Dutreuil1,2, C. Cébo3, J. Guinard-Flament2,1, and C. Hurtaud*1,2, 1INRA UMR1080 Production du lait, Saint-Gilles, France, 2Agrocampus Ouest UMR1080 Production du lait, Rennes, France, 3Unité GABI, Jouy-en-Josas, France.

Nonruminant Nutrition
Gastrointestinal Physiology

W202 Effects of Actigen supplementation on mRNA levels of mucin and markers of gut health in the jejunum of broiler chicks.

W203 Age changes in gastrointestinal pH in broilers.
R. Angel*, B. Humphrey, and W. Saylor, 1University of Maryland, College Park, 2California Polytechnic State University, San Luis Obispo, 3University of Delaware, Newark.

W204 Adaptive response in intestinal function in species with different dietary habits.
D. J. Batchelor*, J. Brand, and S. P. Shirazi-Beechey, 1University of Liverpool, Liverpool, UK, 2Monell Chemical Senses Center, Philadelphia, PA.

Nonruminant Nutrition
Health

W205 Performance, nutrient utilization and gizzard development of broiler starters fed diets containing ground or whole corn.

W206 The effect of dietary vitamin C on growth performance, meat quality, immune function and antioxidant capacity of broilers.

W207 Quality and oxidative stability of vitamin E enriched-chicken meat.
Z. Y. Niu1, X. H. Wang1, Y. N. Min1, F. Z. Liu*, and H. Y. Wang1, 1College of Animal Science and Technology, Northwest A & F University, Yangling, Shaanxi, China, 2Yulin Municipal Animal Husbandry Bureau, Yulin, Shaanxi, China.

W208 Dietary preferences of acids and salts in piglets.
J. A. Suárez*, E. Roura, and D. Torrallardona1,1IRTA-Centre Mas de Bover, Constanti, Spain, 2Lucta S. A., Barcelona, Spain.

W209 Impact of different nutrients on the development of hyperhomocysteinemia in neonatal piglets.
M. E. Côté-Robitaille*, C. L. Girard, F. Guay, and J. J. Matte, 1Dairy & Swine R & D Centre, Agriculture and Agri-Food Canada, Sherbrooke (STN-Lennoxville), QC, Canada, 2Department of Animal Sciences, Laval University, Quebec City, QC, Canada.

W210 Effects of fermented soybean meal on growth performance, nutrient digestibility, blood profiles and fecal microorganisms in weanling pigs.

W211 Effects of probiotics (Agarie) supplementation on growth performance, nutrient digestibility, fecal microbial, fecal noxious gas emission and blood characteristics of finishing pigs.
Effect of type of grinding of barley and alfalfa hay on jejunal histology and crude mucin excretion of growing rabbits.
C. Romero¹, N. Nicodemus¹, J. D. Rodriguez², A. I. García², G. G. Mateos*¹, and C. de Blas², ¹Universidad Politecnica de Madrid, Madrid, Spain, ²Nutreco Poultry and Rabbit Research Center, Casarrubios del Monte, Spain.

Effects of freeze-dried Lactobacillus reuteri M8 on growth performance and intestinal microflora in broiler chickens.

Weaned piglet responses to Escherichia coli K88(ETEC) oral challenge when fed diets containing a Saccharomyces cerevisiae fermentation product with or without in-feed antibiotics.
E. Kiarie*¹, S. Bhandari², D. O. Krause³, M. Scott⁴, and C. M. Nyachoti⁵, ¹University of Manitoba, Winnipeg, MB, Canada, ²Diamond V Mills, Cedar Rapids, IA.

Developing an efficient E. coli expression system for producing a recombinant antimicrobial peptide plectasin.
M. Y. Xie¹, S. H. Sun¹, Z. Zhao¹, X. J. Xia¹, and X. G. Lei*¹, ¹Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China, ²Cornell University, Ithaca, NY.

In vivo evaluation of charcoal to prevent post-weaning pig diarrhea in an Escherichia coli K88 challenge experiment.
C. Ionescu*¹, S. Meshkibaf², S. Bhandari³, F. Zhu², E. Khafipoor², M. C. Nyachoti³, D. Bravo³, and D. O. Krause³, ¹Pancosma, Geneva, Switzerland, ²IDepartment of Medical Microbiology and Infectious Diseases, University of Manitoba, Winnipeg, MB, Canada, ³Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.

Effects of feed-borne Fusarium mycotoxins and an organic mycotoxin adsorbent on immune cell dynamics in the jejunum of broiler breeder pullets infected with Eimeria maxima.

The granulated barley provided during growing or finishing period improves the carcass quality and increases the intramuscular fat content in muscle of heavy pigs.
A. Daza¹, M. A. Latorre*², and C. J. López-Bote³, ¹Universidad Politécnica de Madrid, Spain, ²Universidad de Zaragoza, Spain, ³Universidad Complutense de Madrid, Spain.

Nonruminant Nutrition Management

Broiler energy choice feeding with same protein levels and ambient housing temperatures.
S. Cerrate*, R. Ekmay, C. Salas, and C. Coon, University of Arkansas, Fayetteville.

Effects of dietary creep feeding on performance, blood characteristics and behavior in sows and piglets.

Crude glycerin in market turkey diets.
S. L. Noll*¹, K. Koch², and J. Brannon³, ¹University of Minnesota, St. Paul, ²North Dakota State University, Fargo.

The effect of vetch heat treatment on free amino acids profile in plasma, muscle and liver of growing chickens.

Use of near infrared spectroscopy and color for identification of soybean meals by origin.

Nonruminant Nutrition Mineral

Bioavailability of copper sources to broiler chicks when fed below the copper requirement.
K. C. Klasing* and A. Naziripour, University of California, Davis.

Effects of tribasic copper chloride on intestinal absorption ability and mucosal immunity of broiler chickens.
Y. Ding¹, R. She*¹, H. Bao¹, D. Han¹, Z. Yue¹, J. Tian¹, P. Yu¹, R. Li¹, J. Yin¹, and C. Liang¹, ¹China Agricultural University, Beijing, China, ²Micronutrients, Indianapolis.
W226  Productive performance and egg quality of laying hens as a response to dietary copper supplementation.

W227  Effect of organic trace mineral sources on production and egg quality of white egg laying hens.

W228  Layer excreta mineral content: organic versus inorganic dietary trace mineral sources.
S. Leeson1, A. E. Sefton*, and K. A. Jacques1, 1University of Guelph, Guelph, ON, Canada, 2Alltech Inc., Nicholasville, KY.

W229  The effect of selenium source and supplementation level on vitelline membrane strength and glutathione peroxidase activity in the liver and shell gland of laying hens.
A. A. Aljamaal*, C. A. Fassbinder-orth2, and S. E. Scheidel1, 1University of Nebraska-Lincoln, Lincoln, 2Creighton University, Omaha, NE.

W230  Effects of altered calcium and phosphorus intake on growth performance and bone characteristics in growing pigs.

W231  Effect of mineral source and mannan-oligosaccharide supplementation on mineral metabolism on young growing pigs.
A. Lebel*, F. Guay1, and P. Groenewegen2, 1Université Laval, Quebec, QC, Canada, 2Alltech Canada, Guelph, ON, Canada.

W232  Enrichment of Japanese quail eggs with organic selenium.

W233  Improved piglet birth weight by feeding sows an organic trace mineral blend.
J. Zhao*, L. Greiner2, M. Vazquez-Anon1, C. D. Knight1, and R. J. Harrell1, 1Novus International Inc., 2Innovative Swine Solutions.

W234  Dietary calcium affects neonatal bone development and mesenchymal stem cell activity.
A. Mahajan1, L. S. Alexander1, B. S. Sebolt*, D. E. Catrambone1, J. P. McClung2, J. Odle1, T. W. Pfeiler3, E. G. Loboa, and C. H. Stahl3, 1Laboratory of Developmental Nutrition, N. C. State University, Raleigh, 2Military Nutrition Division, US Army Research Institute of Environmental Medicine, Natick, MA, 3Joint Department of Biomedical Engineering at University of North Carolina-Chapel Hill and North Carolina State University, Raleigh.

W235  Serum from pigs fed a high-Sea diet inhibits growth of human lung cancer cells.
J. G. Li1, J. Shi1, K. N. Wang1, G. Gao2, X. J. Xia1, and X. G. Lei*1,2, 1Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China, 2Chengdu Municipal Ctr for Disease Control and Prevention, Chengdu, China, 3Cornell University, Ithaca, NY.

W236  Effect of sodium selenite and turmeric powder on Gompertz non-linear function in broilers reared under heat stress.
A. Zeinali*, H. Kermanshahi1, H. Ziaie2, H. Farhangfar3, and A. Riasi3, 1 Ferdowsi University, Mashhad, Khorasan, Iran, 2Agriculture and Natural Resources Research Center, Birjand, South Khorasan, Iran, 3Birjand University, Birjand, Khorasan, Iran.

W237  Modelling the fate of dietary phosphorus in the digestive tract of growing pigs: A way to optimize phytase efficacy in releasing dietary P.
M. P. Letourneau-Montminy*, A. Narcy1, M. Magnin2, and C. Pomar1, 1Innovation Swine Solutions, 2INRA UR83, Nouzilly, France, 3BNA Nutrition Animale, Chateau-Gontier, France.

W238  Expression of borate transporter (NaBC1) mRNA by growing pigs is sensitive to dietary boron levels.
S. F. Liao*, J. S. Monegue, M. D. Lindemann, G. L. Cromwell, and J. C. Matthews, Department of Animal and Food Sciences, University of Kentucky, Lexington.

W239  Evaluating trace mineral level and form in diets fed gilts: Effects on ovulation rate, embryonic survival and mineral composition of conceptus products.
W. L. Pope1, B. J. Middendorf2, H. S. Cárdenas1,2, D. C. Mahan1, and K. A. Jacques*, 1OARDC, Department of Animal Sciences, The Ohio State University, Columbus, 2College of Medicine, The Ohio State University, Columbus, 3Alltech Inc., Nicholasville, KY.

W240  Cloning of porcine pancreatic α-amylase gene and characterization of the enzyme over-expressed in Pichia pastoris.
T. Qin1, H. Zhao3, X. Xia3, and X. G. Lei1,2, 1Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China, 2Cornell University, Ithaca, NY.

W241  Heterologous expression of a truncated bovine lactoferrin gene in E. coli to produce a novel antimicrobial peptide.
L. H. Sun1, Y. Liu1,2, H. Zhao1, M. Y. Xie1, J. Xing1, X. J. Xia1, and X. G. Lei1,2, 1Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China, 2Cornell University, Ithaca, NY.

W242  Cloning and expression of palustrin–OG1 in E. coli.
Y. G. Xie*, Y. F. Liu, C. Luan, F. F. Han, and Y. Z. Wang, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang, China.
Activated carbon does not reduce or prevent the effects of zearalenone in gilts.
D. Srichana1, T. Srichana2, W. Suttitham1, P. Panja1, A. Sumrit1, and D. R. Ledoux4, 1Department of Agricultural Technology, Faculty of Science & Technology, Thammasat University, Pathumtani, Thailand, 2Faculty of Pharmaceutical Sciences, Prince of Songkla University, Songkla, Thailand, 3Plant Pathology Research Group, Office of Plant Protection Research and Development, Department of Agriculture, Bangkok, Thailand, 4Division of Animal Science, University of Missouri, Columbia.

Gender effect on nutrient digestibility and reproductive organs sizes by zearalenone feeding with different levels of Calibrin-Z enterosorbent in young pigs.
Z. B. Yang1, 2, S. Z. Jiang1, and F. Chi1, 1Shandong Agricultural University, Tai-an, Shandong, PRC, 2Amlan International, Chicago, IL.

Effects of dietary Fusarium mycotoxins on intestinal lymphocyte subset populations, cell proliferation and histological changes in avian lymphoid organs.
C. K. Girish1, T. K. Smith1, H. J. Boermans, P. Anil Kumar, and G. N. Girgis, University of Guelph, Guelph, Ontario, Canada.

Effects of purified zearalenone on serum metabolites and antioxidant status in young gilts.
S. Z. Jiang1, Z. B. Yang1, and F. Chi1, 1Shandong Agricultural University, Tai-an, Shandong, China, 2Amlan International, Chicago, IL.

A survey of free and conjugated deoxynivalenol in the 2008 Ontario corn crop.
S-T. Tran1, G. Stewart2, and T. K. Smith1, 1University of Guelph, Guelph, ON, Canada, 2Ontario Ministry of Agriculture, Food and Rural Affairs, Guelph, ON, Canada.

Impact of ochratoxin A (OTA) and zearalenone (ZEA) on growth performance and pig physiology.
U. Hofsteter1 and I. Rodrigues, Biomim Holding GmbH, Herzogenburg, Austria.

Adverse effects of feed-borne Fusarium mycotoxins on performance and serum chemistry of rabbits.
M. A. Hewi1, 2, G. N. Girgis, C. K. Girish, and T. K. Smith, University of Guelph, Guelph, Ontario, Canada.

Enrichment of eggs of Japanese quail with α-tocopherol.
R. H. Marques, R. A. Gravena, J. D. T. Silva, F. H. Hada, J. Roccon, J. Picarelli, S. A. Queiroz, and V. M. B. Moraes*1, São Paulo State University, SP, Brazil.

Expression of kypnosis in young pigs is altered by carryover effects of sow vitamin D status.

Incorporating whole grain sorghum in broiler rations.
C. Marr1, C. M. Rude, M. A. Barrios, R. Riersen, and R. S. Beyer, Kansas State University, Manhattan.

Water consumption and performance of broilers receiving Mate (Ilex paraguariensis) infusions.
A. M. C. Racanici1, J. F. M. Menten2, and J. Rabello1, 1University of Brasilia (UnB), Brasilia, DF, Brazil, 2University of São Paulo (USP), Piracicaba, SP, Brazil.

Effect of fiber separation from ground corn flour on nutritional value of poultry diets.
R. Srinivasan* and A. Corzo, Mississippi State University, Mississippi State.

The effect of using different levels of corn gluten meal in free range chickens diet.

S. A. dePersio*, K. W. Koelkebeck1, C. M. Parsons1, P. L. Utterback1, C. W. Utterback1, N. O’Sullivan2, K. Bregendahl3, and J. Arango2, 1University of Illinois, Urbana, 2Hy-Line International, Dallas Center, IA.

Effect of prebiotic on performance and some blood parameters of partridge.
H. Hashemipour, V. Khaksar, H. Kermanshahi, and A. Golián*, Ferdowsi University of Mashhad, Khorasan Razavi, Iran.

Influence of diet quality on nutrient digestibility and productive performance of weanling pigs.

Effects of different levels of fish meal on growth performance, intestinal microbiology, and blood parameters of weaned pigs.

Energy value of cassava products and their use in weaning-growing pigs.
E. Sácaldo1, L. Mestra2, T. Rivero*, Y. Avellaneda3, G. Afanador4, and C. Ariza-Nieto1, 1CORPOICA, Bogota, Colombia, 2Universidad Nacional de Colombia, Bogota, Colombia.

Effect of three feeding programs on body reserves gain of gestating sows.
Effect of triticale on blood chemistry and performance of commercial growing turkeys.
H. Zarghi, A. Golian*, and H. Aghel, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

Influence of origin on in vitro protein and dry matter digestibility of soybean meal.

Nonruminant Nutrition
Mineral and Sow Nutrition

Cloning of the porcine selenoprotein V gene and its RNA abundance in different tissues of young pigs fed three levels of dietary selenium concentrations.
Q. S. Zhang1, H. Zhao1, J. C. Zhou1, K. N. Wang1, J. Y. Tang1, X. J. Xia1, and X. G. Lei*1,2, 1Int. Ctr. of Future Agriculture for Human Health, Sichuan Agri. Univ., Chengdu, China, 2Cornell University, Ithaca, NY.

Phosphate status impacts bone integrity and stem cell proliferation in neonatal pigs.

The effect of calcium and phosphorus supplementation on production traits of laying hens.
T. D. Knezacek*, J. P. Dahiya, K. V. Schwean-Lardner, and H. L. Classen, University of Saskatchewan, Saskatoon, Canada.

The effects of strain and dietary phosphorus level on large tom turkey performance.
B. N. West*, K. G. S. Lilly, K. R. Beaman, L. K. Shires, S. A. Loop, and J. S. Moritz, West Virginia University, Morgantown.

Impact of breeder mineral nutrition on chick development.
L. F. Araujo*, C. S. S. Araujo1, L. C. G. S. Barbosa3, L. V. B. Pereira3,1, S. Hubbard3, and M. T. Kidd2, 1University of Sao Paulo, Pirassununga, SP, Brazil, 2University of Arkansas, Fayetteville, 3Mississippi State University, Mississippi State.

The effect of feeding corn distillers dried grain with solubles to sows in gestation and lactation on sow productivity.

The effect of feeding corn distillers dried grain with solubles to sows in gestation and lactation on sow productivity.

Amino acid transporter mRNA abundance in porcine mammary tissue during pregnancy and lactation.
R Manjarin**, 1, J. P Steibel1, V. Zamora2, N. Am-in1, R. Kirkwood1, C. Ernst1, P. Weber1, N. P. Taylor1, and N. L. Trottier1, 1Michigan State University, East Lansing, MI, 2Colegio de Postgraduados, Montecillo, Estado de Mexico, Mexico, 3Chulalongkorn University, Bangkok, Thailand.

Physiology and Endocrinology
Endocrinology and Metabolism

Effects of lactation and pregnancy status on concentrations of insulin and IGF-1, and correlations with metabolic indicators in Holstein dairy cattle.
I. M. Thompson*, 1, R. L. A. Cerrii, J. H. Kim2, A. D. Ealy1, P. J. Hansen1, C. R. Staples1, and W. W. Thatcher1, 1University of Florida, Gainesville, 2Chungbuk National University, Cheongju, South Korea.

Comparison of body condition score, body weight and milk yield and composition of Holstein and crossbred dairy cows.
L. G. D. Mendonca*, C. C. Abade, E. M. da Silva, and R. C. Chebel, Department of Veterinary Population Medicine, University of Minnesota, St Paul.

Association between periparturum cortisol, haptoglobin, non-esterified fatty acid and milk yield in Holstein cows.
J. M. Huzzey1, 2, T. R. Overton1, D. V. Nydam3, and R. J. Grant3, 1Cornell University, Ithaca, NY, 2W. H. Miner Agricultural Research Institute, Chey, NY.

Relationship between IGF-I polymorphism and metabolic and endocrine profiles of dairy cows on grazing conditions during the transition period.
G. Ruprechter**, A. Meikle1, P. Nicolini1, and M. Carriquiry3, 1School of Veterinary Sciences, UDELAR, Montevideo, Uruguay, 2School of Agronomy, UDELAR, Montevideo, Uruguay.
Physiology and Endocrinology
Hormonal Regulation of the Estrous Cycle in Dairy Cattle

Effects of treatments with hCG or GnRH on serum progesterone (P4) and conception rates (CR) in lactating dairy cows submitted to timed artificial insemination (AI) or embryo transfer (ET).
P. Justolin*1, P. Morelli1, M. Reis1, O. Sá Filho1, F. Aragon2, M. Veras3, S. Soriano3, and J. L. Vasconcelos1, 1FMVZ - UNESP, Botucatu, SP, Brazil, 2Pioneiros Veterinary Clinic, Carambeí, PR, Brazil, 3Colorado Dairies, Araras, SP, Brazil.

Effect of the treatment with GnRH seven days after embryo transfer (ET) on reproductive performance in lactating dairy cows.
P. Morelli*, P. Justolin1, M. Reis1, O. Sá Filho1, F. Aragon2, M. Veras2, S. Soriano3, and J. L. Vasconcelos1, 1FMVZ - UNESP, Botucatu, SP, Brazil, 2Pioneiros Veterinary Clinic, Carambeí, PR, Brazil, 3Colorado Dairies, Araras, SP, Brazil.

Effect of moment of induced ovulation and progesterone (P4) for resynchronization on fertility of Holstein cows in a 5-d timed AI program.

Evaluation of a mechanistic, dynamic, metabolic model of regulation of reproductive processes in dairy cattle.
P. Celi1, I. Lean2, H. Raadsma2, A. Rabiee2, and J. P. McNamara*, 1Washington State University, Pullman, 2University of Sydney, Camden, NSW, Australia.

Effects of different ovulatory stimulus (GnRH vs. estradiol cypionate) on follicular dynamics of a progesterone-based timed AI protocol in Holstein cows.

Dose of equine chorionic gonadotropin necessary to cause multiple ovulation and increase in progesterone concentration following a synchronization protocol in lactating dairy cows.
A. C. Denicol*, F. A. Rivera1, L. G. D. Mendonça2, C. D. Narciso3, G. Lopes Jr1, R. G. S. Bruno1, and R. C. Chebel1,2, 1Veterinary Medicine Teaching and Research Center, University of California, Tulare, 2Department of Veterinary Population Medicine, University of Minnesota, St Paul.

Effect of presynchronization with GnRH or hCG 7 d before resynchronization of ovulation initiated 25 d after a previous timed AI on fertility of lactating dairy cows.

Milk estradiol and pedometer activity during estrus in dairy cows.
N. Kendall, D. Scholey, and G. Mann*, University of Nottingham, School of Biosciences, Division of Animal Sciences, Sutton Bonington Campus, Loughborough, UK.

Effect of treatment with human chorionic gonadotropin (hCG) and/or intravaginal progesterone (CIDR) on day 5 after AI on fertility in lactating dairy cows.

A comparison of conception rates between new and re-used Eazi-Breed CIDRs.

Progesterone concentration required for establishment of pregnancy following embryo transfer in lactating Holstein cows.
A. G. Kenyon*, L. G. D. Mendonça, G. Lopes Jr, J. R. Lima, J. E. P. Santos, and R. C. Chebel1,2, 1Veterinary Medicine Teaching and Research Center, University of California Davis, Tulare, 2Department of Animal Sciences, University of Florida, Gainesville, 3Department of Veterinary Population Medicine, University of Minnesota, St Paul.

A comparison between sexed and conventional semen and some reproduction items in Iranian Holstein dairy herds.
A. A. Naserian*, F. Karavan3, and A. Razavi3, 1Ferdowsi University of Mashhad, Mashhad, Iran, 2Nemoneh dairy farm, Gorgan, Iran, 3Karaj Islamic Azad University, Karaj, Iran.
W289  Dose reduction of fluorogestone acetate through partition of sponges in a program of estrus synchronization.
J. L. Cordero1, T. Sánchez2, P. Molina3, R. Nieto1, J. Peralta1, M. Cárdenas1, O. Mejía1, J. Nuñez3, E. García3, and J. L. Figueroa1,

Physiology and Endocrinology
Integrative Physiology and Endocrinology

W290  Neuroendocrine regulation of rearing behavior in the native Thai hen.
O. Chaiyachet1, D. Chokchaloemwong1, N. Prakobsaeng1, N. Sartsoongnoen1, S. Kosonsiriluk1, I. Rozenboim1, M. E. El Halawani1, T. E. Porter1, and Y. Chaiseha*1, 1Suranaree University of Technology, Nakhon Ratchasima, Thailand, 2Nakhon Ratchasima Rajabhat University, Nakhon Ratchasima, Thailand, 3University of Minnesota, St. Paul, 4The Hebrew University of Jerusalem, Rehovot, Israel, 5University of Maryland, College Park.

W291  Cloning and characterization of chicken 5-hydroxytryptamine (5-HT) receptors 1A and 1B.
C. F. Wong*, A. H. Y. Kwok, J. C. W. Ho, Y. Wang, and F. C. Leung, The University of Hong Kong, Hong Kong, HKSAR, China.

W292  Ergovaline and other ergopeptide alkaloids inhibit vesicular glutamate transporter (VGLUT)-mediated activity of bovine synaptic vesicles.
Y. Xue*1, J. R. Strickland2, J. A. Boling2, and J. C. Matthews2, 1University of Kentucky, Lexington, 2USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY.

W293  Comparison of the somatotropic axis of two precocial free-ranging ice seal species: Harp (Phoca groenlandica) and hooded (Cystophora cristata).
C. E. Anderson*1, J. P. Richmond1, J. M. Burns1, and S. A. Zinn1, 1University of Connecticut, Storrs, 1University of Alaska-Anchorage, Anchorage.

W294  Effects of age and sex on hematologic and serum biochemical values of broiler chickens.
A. Viveros*1, A. Brenes1, I. Arroyo1, M. Bascuñana1, A. Angosto1, and M. L. Fermin1, 1Facultad de Veterinaria, UCM, Madrid, Spain, 2Instituto Del Frio-ICTAN, CSIC, Madrid, Spain.

W295  Serum metabolite response of hens submitted to a second molt using soy hulls.
H. Mazzuco*, L. S. Lopes, A. Coldebella, and V. S. Avila, EMBRAPA Swine & Poultry, Concordia, SC, Brazil.

W296  Pulmonary vascular pressure profiles in broilers selected for susceptibility to pulmonary hypertension syndrome: Age and gender comparisons.

Physiology and Endocrinology
Lactational Physiology

W297  Regulatory effects of individual essential amino acids on casein synthesis rates in bovine mammary tissue slices.
J. A. D. R. N. Appuhamy*, T. R. Wiles, and M. D. Hanigan, Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg.

W298  In vivo effects of insulin and dietary protein level on signaling proteins for protein synthesis in the mammary glands of lactating dairy cows.
W. A. D. Nayananjali*, A. G. Rius1, D. Kirovski2, J. A. D. R. N. Appuhamy1, J. Escobar1, and M. D. Hanigan1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2University of Belgrade, Serbia.

W299  A novel multiplex real-time PCR assay for bovine liver pyruvate carboxylase 5’ UTR variants during the transition to lactation.
H. M. White*, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.
Production, Management and the Environment

Beef

W300
Embryo quality characteristics from superovulated cows receiving a blend of bioactive peptides and oligosaccharides to support immune function (Grade One).

W301
Evaluation of a distinct white Angus crossbred phenotype in southern Florida.
P. G. M. A. Martins5, R. Cassiolato1, F. Frigoni1, M. M. Salin1, D. B. Araujo1, M. Meneghetti1, G. C. Lamb1, D. G. Riley2, B. H. Carter2, T. H. Friend2, and J. D. Artvington2. 1University of Florida, Range Cattle Research and Education Center, Ocala, 2Texas A&M University, Department of Animal Science, College Station.

W302
The relationship of pulmonary arterial pressure with feed efficiency, performance, temperament, and feeding behavior in growing beef cattle.

W303
Technical and economic performance of a beef cattle production system: A case study in Bahia State, Brazil.
F. A. Barbosa*, D. S. Graça3, V. J. Andrade1, I. M. Cezar3, and R. C. Souza1. 1University of Brasilia (UnB), Brasilia, DF, Brazil, 2School of Veterinary Medicine, Federal University of Minas Gerais (UFMG), Belo Horizonte, MG, Brazil, 3Anhanguera-nderp University, Campo Grande, MS, Brazil.

W304
Economic efficiency and productivity of life-cycle beef cattle production systems in Bahia State, Brazil.
F. A. Barbosa*, D. S. Graça3, V. J. Andrade1, I. M. Cezar3, and R. C. Souza1. 1University of Brasilia (UnB), Brasilia, DF, Brazil, 2School of Veterinary Medicine, Federal University of Minas Gerais (UFMG), Belo Horizonte, MG, Brazil, 3Anhanguera-nderp University, Campo Grande, MS, Brazil.

W305
Economic viability of breed Nelore and crossbreed F1 Nelore × Brahman produced in feedlot.

W306
Monitoring diet quality and body condition in cows grazing Arizona rangeland.

W307
Influence of residual feed intake, breed of sire and dam on the performance and carcass characteristics of early weaned steers during the feedlot phase.

W308
Supplemental corn dry distillers grains plus soluble on performance of steers grazing native range.

W309
Predicted mineral intake utilizing both water and forage analysis varies by source and location of livestock water in Eastern Montana.
J. T. Mulliniks*, I. Muscha2, S. I. Lodge-Ivey3, and M. K. Petersen2. 1New Mexico State University, Las Cruces, 2USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.

W310
The environmental impact of corn-fed versus grass-fed beef finishing systems.
J. L. Capper*1 and R. A. Cady2. 1Department of Animal Sciences, Washington State University, Pullman, 2Elanco Animal Health, Greenfield, IN.

W311
Assessment of thermal signatures of nose-clip weaned calves using digital infrared thermography.
H. T. Boland*1, 2, S. Bowers2, and S. T. Willard2, 3, Mississippi State University, Prairie Research Unit, Prairie, 2Mississippi State University, Department of Animal and Dairy Sciences, Mississippi State, 3Mississippi State University, Department of Biochemistry and Molecular Biology, Mississippi State.

W312
Selenium incorporation and depletion in beef heifers grazing pastures with very high selenium levels grown in saline soils.
S. O. Juchem*1, 2, S. E. Benes2, P. H. Robinson1, P. Vasquez3, M. Brito2, G. Getachew2, and P. Chillbroste3. 1University of California, Davis, 2California State University, Fresno, 3Facultad de Agronomía, Paysandú, Uruguay.

W313
Influence of shading of feedlot pens on performance of growing bull-calves during winter in northwest Mexico.
R. Barajas*, B. J. Cervantes1, 2, M. Verdugo1, 2, M. A. Espino1, 2, E. A. Velazquez1, J. A. Romo1, and L. R. Flores1. 1FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico, 2Ganadería Los Migueneles SA de CV, Culiacan, Sinaloa, Mexico, 3Tecnología de Máxima Producción, S. A. de C. V, Culiacan, Sinaloa, Mexico.

W314
Preliminary evaluation of grandsire marbleing potential and ultrasound use on backgrounding and finishing performance, and carcass merit.
C. J. Mueller*1, 2, T. DelCurto1, 2, R. R. Mills1, C. P. Sullivan1, 2, and G. L. Tschida1, 2. 1Oregon State University, Corvallis, 2Eastern Oregon Agricultural Research Center, Union.
Production, Management and the Environment

**W315** Growth and carcass merit of purebred Jersey steer calves finished on grain-based diets at two different energy levels.
C. J. Mueller*1,2, G. L. Tschida1,2, and V. B. Cannon1, 1Oregon State University, Corvallis; 2Eastern Oregon Agricultural Research Center, Union.

**W316** Stocking rate and botanical composition effects on the physical characteristics of the streamside zones of pastures.
D. A. Bear*1, J. R. Russell1, D. G. Morrical1, M. Tufekcioglu1, T. M. Isenhart1, and J. L. Kovar2, 1Iowa State University, Ames; 2USDA-ARS National Laboratory for Agriculture and the Environment, Ames, IA.

**W317** Incidence of bovine enterovirus, coronavirus, and group A rotavirus, and concentration of total coliforms in Midwestern pasture streams.

**W318** Borax and octabor treatment of stored swine manure: Reduction in hydrogen sulfide emissions and phytotoxicity to agronomic crops.
M. Yokoyama*1, S. Hengemuhle1, D. Penner1, J. Michael1, C. Spence1, T. Whitehead1, R. von Bernuth1, D. Rozeboom1, and M. Cotta2, 1Michigan State University, East Lansing; 2United States Department of Agriculture, Agricultural Research Service, Peoria, IL.

**W319** Effect of dietary adipic acid and dried distillers grains plus solubles in combination with post-excretion amendment with sodium bisulfite on nitrogen loss from stored laying hen excreta.
T. J. Applegate*1, C. Romero2, M. E. B. Abdalllh3, R. Angel4, and W. Powers5, 1Purdue University, West Lafayette, IN; 2University Politecnica de Madrid, Madrid, Spain; 3University of Khartoum, Khartoum, Sudan; 4University of Maryland, College Park; 5Michigan State University, East Lansing.

**W320** Evaluation of a silvopastoral system with Alnus acuminata on pasture productivity, milk production and economic returns in a high tropical ecosystem.
A. Conde*1, R. Hernandez1, L. L. Betancourt1, D. A. Castañeda1, J. A. Umaña1, T. Carvajal2, and L. Sanchez3, 1Universidad de La Salle, Bogotá, Colombia; 2Universidad UDC, Bogotá, Colombia; 3Columbia, Bogotá, Colombia.

**W321** Feeding native laying hens diets containing palm kernel meal with or without enzyme supplementation: 2. Manure nitrogen and microbial counts.
Adrizal*1, Yusrizal1, S. Fakhri1, Yatno1, and C. R. Angel2, 1Faculty of Animal Husbandry, University of Jambi, Jambi 36361, Jambi, Indonesia; 2Department of Animal and Avian Sciences, University of Maryland, College Park.

**W322** Effect of dietary protein concentration on ammonia emission from dairy manure.
C. Lee*1, A. N. Hristov1, C. Dell2, G. Feyereisen3, J. Kaye4, and D. Beegle1, 1Pennsylvania State University; 2USDA-ARS, PA; 3USDA-ARS, MN.

**W323** Origin of ammonia nitrogen volatilized from dairy manure.
C. Lee*1 and A. N. Hristov, Pennsylvania State University.

**W324** Air velocities in poultry houses raising large broilers.
D. G. Overhults1, A. J. Pescatore*2, I. Lopes2, G. Morello2, J. P. Jacob1, M. Miller1, J. Earnest, Jr.1, and R. S. Gates1, 1University of Kentucky, Lexington; 2Kentucky Poultry Federation, Winchester; 3University of Illinois, Champaign.

**W325** Effect of LED lights on growth performance of broiler chicks.
R. D. Rieson*, C. M. Rude, M. A. Barrios, and R. S. Beyer, Kansas State University, Manhattan.

**W326** Comparison of nutrient and microbial profiles in foaming and non-foaming swine manure pits.
J. Rehberger*, E. Davis, A. Veldkamp, T. Parrott, and T. Rehberger, Danisco, Waukesha, WI.

**W327** The effect of dietary alfalfa silage to corn silage ratios on cow performance and ammonia nitrogen emission.
C. Arndt*, M. A. Wattiaux1, and J. M. Powell2, 1University of Wisconsin, Madison, 2US Dairy Forage Research Center, Madison, WI.

**W328** Effect of inoculant and molasses on silage fermentation quality, protein fractions, nutritive value and aerobic stability in high dry matter alfalfa.
M. Khorvash*1, F. Hashemzadeh Cigari1, G. -R. Ghorbani2, and A. Taghizadeh2, 1Isfahan University of Technology, Isfahan, Isfahan, Iran; 2Tabriz University, Tabriz, East Azarbayjan, Iran.

**W329** The effect of feed management software on whole farm nutrient balance.
B. A. Stewart*, B. E. Cox, R. E. James, K. F. Knowlton, M. L. McGilliard, and C. C. Stallings, Virginia Polytechnic Institute and State University, Blacksburg.
Production, Management and the Environment Management

Ruminant Nutrition

Beef 1

The influence of lipidic sources on the cholestrol plasma levels of beef heifers.
M. C. A. Santana*, T. T. Berchielli, R. A. Reis, G. M. P. Melo, and P. H. M. Dian, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2Camilo Castelo Branco University, Descalvado, São Paulo, Brazil.

Substitution of soybean meal by inactive dry yeast in diets of beef cattle: nutrient intake and productive performance.
A. F. Campos, O. G. Pereira*, S. C. Valadares Filho, K. G. Ribeiro, and L. O. Rosa, 1Federal University of Viçosa, Viçosa, Minas Gerais, Brazil, 2Federal University of Jequitinhonha and Mucuri Valleys, Diamantina, Minas Gerais, Brazil.

Changes on growth performance and ruminal variables of finishing Dorper × Pelibuey lambs fed a sorghum grain diet plus an exogenous phytase.

Thawed semen quality of beef bulls supplemented with calcium soaps of polyunsaturated fatty acid.

Effects of non-protein nitrogen in diets containing 15% wet distiller’s grains with solubles and steam-flaked corn on feedlot cattle performance and carcass characteristics.
C. H. Ponce*, M. S. Brown, N. A. Cole, C. L. Maxwell, J. O. Wallace, and B. Coufal, 1Feedlot Research Group, Department of Agricultural Sciences, West Texas A&M University, Canyon, 2USDA ARS Conservation and Production Research Laboratory, Bushland, TX.

Effects of nutrient restriction and ruminally undegradable protein supplementation during early to mid-gestation on beef cow offspring intestinal growth.

Time of collection affects starch losses in Nellore and crossbred cattle in commercial feedlots.
M. Caetano*, A. J. C. Nuñez, G. B. Mourão, and D. P. D. Lanna, 1University of Sao Paulo, ESALQ, Piracicaba, Brazil, 2University of Sao Paulo, FZEA, Pirassununga, Brazil.
W344  Effect of wheat distillers dried grains with solubles (DDGS) as a replacement for barley grain and barley silage on ruminal pH and fermentation in finishing beef cattle.
Y. L. Li*1,2, W. Z. Yang1, M. L. He1, T. A. McAllister1, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.

W345  Effect of levels of canola meal supplementation on intake and apparent digestibility in wethers.
F. Hentz*, G. V. Kozloski, T. Orlandi, G. F. E. Pacheco, S. C. de Avila, and P. S. Castagnino, Universidade Federal de Santa Maria, Santa Maria, RS, Brazil.

W348  Residual feed intake in progeny of Nellore bulls.
M. L. Nascimento*, R. R. Tullio2, M. M. Alencar3, J. S. Lima1, L. D. C. Vieira3, M. L. P. Silva4, and D. P. D. Lanna2, 1University of Sao Paulo, Piracicaba, Sao Paulo, Brazil, 2Embrapa Pecuaria Sudeste, Sao Carlos, Sao Paulo, Brazil, 3Federal University of Pernambuco State, Garanhuns, Pernambuco, Brazil, 4State University of Sao Paulo, Jaboticabal, Sao Paulo, Brazil.

W349  Effects of supplemental vitamin E with different oil sources on growth, health, and carcass parameters of preconditioned beef calves.
C. J. Mueller*, C. Sexson, and R. R. Mills, 1Oregon State University, Corvallis, 2Eastern Oregon Agricultural Research Center, Union.

W350  Level of ammonia-nitrogen required to maximize ruminal microbial efficiency.
Y. Liang* and M. S. Kerley, University of Missouri, Columbia.

W351  Effects of polyunsaturated fatty acid supplementation (PUFA) on forage intake and digestibility in beef cows.

W352  Use of real-time ultrasound (RTU) measurements and carcass traits to assess internal fat in residual feed intake (RFI)-indexed Brahman bulls under grazing conditions.

W353  Effects of co-ensiling direct-cut grass with corn modified wet distillers grain plus solubles on beef steer diet digestibility.

W354  Acetate utilization in young crossbred calves is age-dependent.

W355  Ergot alkaloids induce vasoconstriction of bovine foregut vasculature.

W356  Comparison of methods to predict carcass composition in grass and grain fed Angus steers.
G. Acetoze*, G. D. Cruz, and H. A. Rossov, University of California, Davis.

W357  Rumen bacterial population dynamics of steers grazing winter wheat forage and a yeast culture supplement.
D. W. Pitta*, W. E. Pinchak, S. E. Dowd, J. Osterstock, V. Gontcharova, E. Youn, K. Dorton, I. Yoon, B. R. Min, J. D. Fulford, T. A. Wickersham, and D. P. Malinsonski, 1Texas AgriLife Research, Vernon, 2Research and Testing Laboratory, Lubbock, TX, 3Texas AgriLife Research, Amarillo, 4Medical Biofilm Research Institute, Lubbock, TX, 5Texas Tech University, Lubbock, 6Diamond V Mills, Cedar Rapids, IA, 7Texas A&M University, College Station.

W358  Expression of phosphate transporter in small intestine, kidney, and parotid salivary gland of cattle fed differing levels of phosphorus from wet distillers grains.
A. P. Foote*, B. D. Lambert, J. A. Brady, M. S. Brown, J. B. Osterstock, J. C. MacDonald, and N. A. Cole, 1Texas Tech University, Stephenville, TX, 2Texas AgriLife Research, Stephenville, 3Texas A&M University, College Station, 4Texas AgriLife Research, Amarillo.
W359  Supplemental vitamin E concentration in beef finishing diets containing wet distillers grains with solubles: Feedlot performance and carcass characteristics.  
D. B. Burken*, R. B. Hicks, D. L. VanOverbeke, J. L. Wahrmund, B. P. Holland, J. J. Martin, P. K. Camfield, and C. J. Richards, Oklahoma State University, Stillwater, South Dakota State University, Brookings, Oklahoma Panhandle State University, Goodwell.

W360  Abomasal direct infusion of L-arginine and cis-10, cis-12 conjugated linoleic acid affect to lipogenic gene expression and enzymes activities in Angus steers.  

W361  Effects of different casein supplements on concentration of soluble non-ammonia nitrogen in the liquid phase of ruminal and omasal digesta in Korean native steers.  

W362  Similar performance and carcass quality of beef bulls weaned at 3 or 6 months of age when slaughtered at a fixed body weight.  
M. Vestergaard*, A. M. Graumann, F. Strudsholm, and C. F. Borsting, Aarhus University, Tjele, Denmark, Agrotech A/S, Skeby, Denmark, Danish Cattle Research Centre, Tjele, Denmark.

W363  Development of a fescue toxicosis model using a fescue seed extract.  
A. F. Koontz*, L. P. Bush, J. L. Klotz, K. R. McLeod, F. N. Schrick, and D. H. Harmon, Department of Animal and Food Sciences, University of Kentucky, Lexington, Department of Plant and Soil Sciences, University of Kentucky, Lexington, Forage-Animal Production Research Unit, USDA-ARS, Lexington, KY, Department of Animal Science, University of Tennessee, Knoxville.

W364  Flint corn grain processing and protein adequacy in rations for feedlot finished Nellore bulls.  
A. M. Pedroso*, M. S. Peres, F. A. P. Santos, G. B. Mourao, and T. G. Neri, ESALQ/USP, Piracicaba, SP, Brazil.

W365  Effects of ruminal energy–protein synchronization on intake, nutrient digestibility, performance, carcass traits and composition of carcass gain in beef heifers.  

W366  The effects of restrictive feeding over the winter on the performance of prepartum crossbred beef cows.  
K. L. Wood*, I. B. Mandell, and K. C. Swanson, University of Guelph, Guelph, Ontario, Canada.

W367  Comparison of wheat dried distillers grains with solubles, alone or in combination with barley grain, as protein and energy sources for beef stocker calves grazing fall pasture and winter field bale grazing.  
L. P. Clark* and H. A. Lardner*, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, Western Beef Development Centre, Humboldt, Saskatchewan, Canada.

W368  Carcass characteristics of Nellore heifers finished on pasture system with partial substitution of soybean meal for sunflower crushed seeds.  

W369  Changes in ruminal parameters, of steers supplemented with sunflower crushed seeds in parcial substitution of soybean meal.  

W370  Effect of supplemental fat sources on rumen fermentation of a high-concentrate diet using a dual-flow continuous culture system.  
R. C. Araújo*, S. Calsamiglia, M. Rodríguez-Prado*, S. Cavini, and A. Ferret, ESALQ, Universidade de São Paulo, Piracicaba, SP, Brazil, Universitat Autònoma de Barcelona, Bellaterra, Spain.

W371  Dried distillers grains as a protein supplement to cattle consuming Bermudagrass hay.  
Z. J. Rambo*, J. E. Sawyer, C. L. Skaggs, and T. A. Wickersham, Texas A&M University, College Station.

W372  Effect of residual feed intake, gender, and breed composition on blood urea nitrogen concentration in an Angus-Brahman multibreed herd.  

W373  Body composition and tissue deposition in Nellore, F1 Simmental × Nellore and F1 Angus × Nellore steers fed at maintenance or ad libitum with two levels of concentrate in the diet.  
W374  Effect of supplementing a combination of lysine and methionine on growing cattle performance and carcass composition.
N. D. Luchini*1,2 and M. J. de Veth1, 3Adisseo, Alpharetta, GA, 3Balchem Corporation, New Hampton, NY.

W375  Effect of protein and energy supplementation on voluntary intake and ruminal parameters in steers.
F. P. Portilho* and L. F. Barros, University of Brasilia, Brasilia, DF, Brazil.

W376  Energy requirements adjusted by milk yield of beef cows in Uruguay.

W377  Productive performance during fattening phases of Nellore and F1 Nellore × Brahman fed with three different diets.
I. S. Silva*, F. A. Barbosa, J. M. S. Diogo, R. A. Mandarino, and F. C. E. Botelho, Faculty of Agronomy and Veterinary Medicine, University of Brasilia - UnB, Brasilia/DF, Brazil.

Ruminant Nutrition
Beef: Feedlot

W378  Effects of feeding monensin or polyclonal antibody preparation against lactate-producing rumen bacteria on blood lipoprotein concentrations of feedlot cattle.
J. R. Rochesel*1,2, F. S. Parra1, M. De Beni Arrigonii, C. L. Martins1, S. R. Baldini1, L. M. N. Sarti1, R. S. Barducci1, N. R. B. Consolo1, D. D. Millen1, R. D. L. Pacheco1, D. Tomazella1, A. L. Campanini1, F. A. S. Miquilini1, and A. M. Lopes1, 3 Supported by FAPESP, Piracicaba, São Paulo, Brazil, 4University of São Paulo (USP), Piracicaba, São Paulo, Brazil.

W379  Effects of feeding polyclonal antibody preparations against lactate-producing rumen bacteria on feeding behavior of feedlot cattle.
T. M. Mariani1,2, R. D. L. Pacheco1, M. De Beni Arrigonii, C. L. Martins1, S. R. Baldini1, L. M. N. Sarti1, R. S. Barducci1, T. M. Mariani1, J. R. Ronchesel1, F. S. Parra1, D. Tomazella1, J. P. S. T. Bastos1, E. S. Ogawa1, and D. D. Millen1, 3 Supported by FAPESP, Piracicaba, São Paulo, Brazil, 4University of São Paulo (USP), Piracicaba, São Paulo, Brazil.

W380  Effects of feeding polyclonal antibodies preparations against lactate-producing rumen bacteria or monensin on blood gas profile, DMI fluctuations and rumenitis incidence of feedlot cattle.
R. D. L. Pacheco1,2, D. D. Millen1, M. De Beni Arrigonii, C. L. Martins1, S. R. Baldini1, L. M. N. Sarti1, R. S. Barducci1, T. M. Mariani1, J. R. Ronchesel1, F. S. Parra1, D. P. D. Lanna1, J. P. S. T. Bastos1, and G. B. Mourão1, 3 Supported by FAPESP, Piracicaba, São Paulo, Brazil, 4University of São Paulo (USP), Piracicaba, São Paulo, Brazil.

W381  Effects of feeding polyclonal antibodies preparations against lactate-producing rumen bacteria or monensin on blood lipoproteins concentrations and fatty acid profile of feedlot cattle.
D. D. Millen1,2, R. D. L. Pacheco1, M. De Beni Arrigonii, C. L. Martins1, S. R. Baldini1, L. M. N. Sarti1, R. S. Barducci1, T. M. Mariani1, J. R. Ronchesel1, F. S. Parra1, D. P. D. Lanna1, J. P. S. T. Bastos1, G. B. Mourão1, and A. M. Lopes1, 3 Supported by FAPESP, Piracicaba, São Paulo, Brazil, 4 University of São Paulo (USP), Piracicaba, São Paulo, Brazil.

W382  Economic analysis of beef steer finishing diets containing elevated levels of wet distillers grains with solubles.
J. M. Carmack*, P. M. Walker1, J. D. Fehr1, R. L. Atkinson1, and L. A. Forster1, 3Department of Agriculture, Illinois State University, Normal, IL, 4Animal Science, Food and Nutrition, Southern Illinois University, Carbondale, IL, 5Archer Daniels Midland Co., Decatur, IL.

W383  Interactive effects of yeast and yeast cell wall material on feedlot performance during the receiving period of stressed beef cattle.
D. N. Finck1, S. L. Parr1, T. R. Young1, J. A. Carroll1, J. R. Corley1, A. G. Estefan1, and B. J. Johnson1, 3Texas Tech University, Dept. of Animal and Food Sciences, Lubbock, 2USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 4Lesaffre Feed Additives, Milwaukee, WI.

W384  Condensed tannins supplementation on feedlot performance of growing bulls.
R. Barajas*, B. J. Cervantes1,2, A. Camacho1, E. A. Velazquez1, M. A. Espino1,2, F. Juarez1, L. R. Flores1, and M. Verdugo1, 3FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico, 4Ganadera Los Migueles SA de CV, Culiacan, Sinaloa, Mexico, 5Tecnologia de Maxima Produccion, S. A. de C. V., Culiacan, Sinaloa, Mexico.

W385  Factors influencing intake: Diet composition and carcass characteristics in finishing yearling steers.
M. G. Dib*, G. E. Erickson1, T. J. Klopfenstein1, and M. L. Spangler1, 3University of Nebraska, Lincoln, 4Archer Daniels Midland, Columbus, NE.

W386  Effect of increased Rumensin dosage level and timing on performance of steers fed in confinement to harvest.
G. J. Vogel*, Elanco Animal Health, Greenfield, IN.
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Dairy 1

W387  Blood gas profile, rumenites and liver abscesses incidences of feedlot bullocks fed high-concentrate diets containing monensin or polyclonal antibodies preparations against lactate-producing rumen bacteria.
L. M. N. Sarti1,2, R. S. Barducci1, M. De Beni Arrigoni1, C. L. Martins1, S. R. Baldin1, D. D. Millen1, R. D. L. Pacheco1, T. M. Mariani1, J. R. Ronchisell1, F. S. Parra1, A. L. Campanini1, J. P. S. T. Bastos1, D. Tomazzella1, and F. A. Simão Miqulmin1, 1São Paulo State University (UNESP), Botucatu, São Paulo, Brazil, Supported by FAPESP, São Paulo, São Paulo, Brazil.

W388  Effect of intermittent roughage delivery and roughage type on intake and digestibility by beef steers fed concentrate diets.

W389  Effect of wheat straw level and processing method on site and extent of digestion by cattle consuming finishing feedlot diets.
J. A. Valdez1, J. O. Chirino1, M. F. Montaño1, N. G. Torrentera1, A. Lopez1, J. I. Arroquy1, M. Avila2, H. Coria3, and O. Hernandez3, 1Università Autónoma de Baja California, Mexicali, BC, MX, 2Università Autónoma de Tamaulipas, Victoria, TAM, MX, 3New Mexico State University, Las Cruces.

W390  Milk production response to incremental levels of crude glycerol on diets of grazing dairy cows.
R. Echeverría, A. Mackinnon, J. Rotulo, and P. Chilibroste*, Universidad de la República, EEMAC, Paysandu, Uruguay.

W391  Nutrient balances in California dairy farms. 2. Factors associated with feed conversion and nitrogen utilization efficiencies.
A. R. Castillo1, N. Silva del Rio1, and N. St-Pierre1, 1University of California Cooperative Extension, Merced, 2University of California Cooperative Extension, Tulare, 3The Ohio State University, Department of Animal Sciences, Columbus.

W392  Effects of glucose, propionate, insulin and gut peptides on neuropeptide mRNA concentrations in the ovine hypothalamus.
A. E. Relling1,2, M. Oba1,3, K. Lee1, S. C. Loerch1, and C. K. Reynolds2, 1The Ohio State University, 2University of Reading, UK, 3Universidad Nacional de La Plata, Argentina.

W393  Relationship between prolamin content and in situ starch digestibility of barley grain.
M. Oba1*, D. Gibb1, and T. McAllister2, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

W394  Effect of crude glycerin supplementation on the performance of dairy cows under high altitude tropical conditions.
L. Mestra1, Y. Avellaneda1*, P. Medina1, G. Garcia1, C. Ariza-Nieto1, D. Cifuentes1, D. Galindo1, J. Palomino1, and G. Afanador1,2, 1CORPOICA, Bogota, Colombia, 2Universidad Nacional de Colombia, Bogota, Colombia.

W395  Effect of the germinated corn on feed intake, milk production, milk quality and blood metabolites of lactating cows.
B. W. Kim1*, J. W. Ju1, J. K. Choi1, and J. S. Shin1, 1Kangwon National University, Chuncheon, Kangwon-Do, South Korea, 2Dae Han Feed Company, Incheon, South Korea.

W396  Influence of hypocalcemia on plasma biochemical parameters, lipid mobilization, and liver lipid infiltration in cows.

W397  Effects of a low energy diet prepartum on subclinical ketosis in dairy cows.

W398  Impacts of maternal selenium supply and nutritional plane on offspring intestinal vascularity.
R. D. Yunusova1*, A. M. Meyer1, T. L. Neville1, K. A. Vonnahme1, C. J. Hammer1, J. J. Reed1, D. A. Redmer1, L. P. Reynolds1, and J. S. Caton, Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo.

W399  Performance of high-yielding dairy cows supplemented with fat or concentrate under hot and humid climates.
U. Moalem1*, G. Altmark1, H. Lehrer1, and A. Ariel1, 1Agriculture Research Organization, Bet Dagan, Israel, 2Faculty of Agriculture, Hebrew University, Rehovot, Israel.

W400  Concentrations of plasma metabolites and hormones in periparturient Holstein cows fed two sources of fat.
C. Caldari-Torres1, E. D’Agostao1, M. C. Perdomo1, C. R. Staples1, and L. Badinga1*, 1University of Florida, Gainesville, 2Virginia Tech, Blacksburg.

W401  Weaning dairy cows to a new diet: The effectiveness of a gradual dry-off procedure.
W402 Effects of feeding different levels of guar meal on performance of Holstein dairy cows.
A. Vatandoust1, A. A. Naserian2, F. Boldaje1, and S. Zerhdaran1, 1University of Gorgan, Gorgan, Iran, 2University of Mashhad, Mashhad, Iran.

W403 Feed sorting and feeding behavior of transition dairy cows fed glycerol as a replacement for corn.
E. R. Carvalho*, N. S. Schmelz, H. White, and S. S. Donkin, Purdue University, West Lafayette, IN.

W404 Impact of climate on chemical composition and in vitro organic matter digestibility of semi-arid barley grain varieties determined by gas production technique.
E. Abdi Ghezeljeh1,2, M. Danesh Mesgaran1, H. Nasiri Moghaddam1, H. Fazel1, and A. R. Vakili1, 1Ferdowsi University of Mashhad, Iran, 2East Azerbaijan Research Center for Agriculture and Natural Resources, Tabriz, Iran, 1Animal Science Research Institute, Karaj, Iran.

W405 Effect of flax oil and flax hulls on mRNA abundance of antioxidant enzymes and lipogenic-related genes in the mammary gland of dairy cows.
M. F. Palin*, H. V. Petit, D. Beaudry, C. Cörtes, N. Gagnon, P. Lacasse, and C. Benchaar, Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada.

W406 An effective method for total RNA isolation from ruminal contents.
P. Wang*1,2, M. Qi1, L. B. Selinger1, T. A. McAllister2, and R. J. Forster1, 1University of Lethbridge, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

W407 Supplementation of embryo recipients heifers with rumen bypass fat.

W408 Effects of infusing different doses of free α-linolenic acid to the duodenum on the immune function of lactating dairy cows.
P. Sun, J. Q. Wang*, G. Yang, and Khas-Erdene, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

W409 Supplementation of methionine hydroxy analog, trace mineral chelates and dietary antioxidants in the diet of dairy cows for milk production, milk composition, and milk status.
G. Conti1, G. Castillo*1, M. Gallardo1, S. Toffano1, and M. Vazquez-Anon1, 1University of Veterinary Medicine - Universidad del Litoral, Santa Fe, Argentina, 2CICV National Institute for Agricultural and Livestock Technology (INTA), Buenos Aires, Argentina, 3Novus International, St. Louis, MO.

W410 Effects of Bacillus subtilis natto on the immune function of weaned calves.
P. Sun, J. Q. Wang*, and H. T. Zhang, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

W411 Nutrient balances in California dairy farms. 1. Effects of salt content in drinking water and milk yield per cow on nutrient utilization efficiency.
A. R. Castillo1, N. Silva del Rio2, and N. St-Pierre1, 1University of California Cooperative Extension, Merced, 2University of California Cooperative Extension, Tulare, 3The Ohio State University, Department of Animal Sciences, Columbus.

W412 Evaluation of estimated diet energy intake and impact on energy use of the lactating dairy cow.
K. J. Clark*, P. J. Kononoff1, and L. O. Tedeschi1, 1University of Nebraska-Lincoln, Lincoln, 2Texas A&M University, College Station.

W413 Regulation of hepatic gluconeogenic enzymes by dietary glycerol in transition dairy cows.
H. M. White*, E. R. Carvalho, and S. S. Donkin, Purdue University, West Lafayette, IN.

W414 Effects of dietary betaine on milk yield and milk composition of mid-lactating dairy cows.
S. E. Peterson1, J. K. Kinch1, J. E. Williams1, M. A. McGuire1, M. Chahine1, and P. Rezamand1, 1University of Idaho, Moscow; 2University of Idaho, Twin Falls.

W415 The effect of forage level and lipid supplement on selected strains of rumen bacteria in continuous culture fermenters.
P. Gudla*, A. Ishlak1, A. A. AbuGhazaleh1, D. Hastings1, K. Jones1, E. Gastal1, J. Trushenski1, and S. Ibrahim2, 1Southern Illinois University, Carbondale, 2North Carolina A&T University, Greensboro.

W416 Changes in the parameter estimates for the linear relationships of milk and milk component yields with dry matter intake of dairy cows during the last decade.
J. S. Lee*, S. Y. Lee2, K. S. Kii, H. S. Kim1, and S. Skeo1, 1Department of Animal Biosystem Sciences, Chungnam National University, Daejeon, South Korea, 2Institute of Agricultural Science, Chungnam National University, Daejeon, South Korea, 3Dairy Science Division, National Institute of Animal Science, RDA, Cheonan, South Korea.

W417 Effects of chemical treatment of whole barely grain with sodium hydroxide on nutrient intake and digestibility in midlactation of Holstein dairy cows.
M. Khorashadizadeh*, A. A. Naserian, and R. Valizadeh, Ferdowsi University of Mashhad, Excellence Center for Animal Science, Faculty of Agriculture, Mashhad, Khorasan Razavi, Iran.
Effect of glucogenic and ketogenic feeding strategies on metabolic status in postpartum transition cows.
M. Larsen* and N. B. Kristensen, Faculty of Agricultural Sciences, Aarhus University, Tjele, Denmark.

W419 Ruminal degradation dynamics of barley protein meal, corn distiller grains and soybean meal.
S. Arriola*, C. Blatcher, M. McGilliard, and M. D. Hanigan, Virginia Polytechnic Institute and State University, Blacksburg.

W420 Effects of storage temperature and pre-mixing on yeast cell viability.
M. L. Sullivan*, W. K. Sanchez2, I. Yoon3, and B. J. Bradford4, 1Kansas State University, Manhattan, 2Diamond V Mills, Inc, Cedar Rapids, IA.

W421 Replacement of high moisture corn or soy hulls by soy molasses in dairy cow diets.
L. L. Bitencourt1, N. M. Lopes1, V. A. Silveira1, G. Pessoa Júnior1, O. F. Zacaroni1, G. S. Dias Júnior1, C. O. Faria1, J. R. M. Silva2, R. A. N. Pereira2, and M. N. Pereira*1, 1Universidade Federal de Lavras, Lavras, Brazil, 2Empresa de Pesquisa Agropecuária de Minas Gerais, Lavras, Brazil, 3Instituto Federal de Educação Ciência e Tecnologia do Norte de Minas Gerais, Januária, Brazil, 4Better Nature Research, Ijaci, Brazil.

W422 Abomasal oligofructose infusion induced hindgut acidosis in Holstein steers.

W423 Effect of processing of corn grain on mean particle size, particle distribution and ruminal starch degradability.
S. Emanuele*, L. Carver1, L. Davis2, D. Lundquist1, and J. Firkins2, 1Quality Liquid Feed, Dodgeville, WI, 2Ohio State University, Columbus.

W424 Comparison of the effects of several nutrients on dairy cow milk fat content.
G. Maxin*1, F. Glasser2, and H. Rulquin1, 1INRA-Agrocampus Ouest, Rennes, France, 2INRA, Theix, Saint-Genes-Champanelle, France.

W425 Phosphorus feeding for primiparous cows.
V. R. Moreira*, L. K. Zeringue1, C. Leonardi2, and M. E. McCormick1, 1Louisiana State University Agricultural Center, Franklinton, 2Louisiana State University, Baton Rouge.

W426 Milk production and components of Holstein dairy cows fed diet supplemented with whole barley grain treated with sodium hydroxide.
M. Khorashadizadeh*, A. A. Naserian, and R. Valizadeh, Ferdowsi University of Mashhad, Excellence Center for Animal Science, Faculty of Agriculture, Mashhad, Khorasan Razavi, Iran.

W427 Effects of dietary cobalt supplementation and vitamin B12 injection on lactation performance by dairy cows.
M. S. Akins*, S. J. Bertics1, M. T. Socha2, and R. D. Shaver2, 1University of Wisconsin, Madison, 2Zinpro Corporation, Eden Prairie, MN.

W428 Carry-over effects reveal that late lactation dairy cows require longer than 30 d to respond to Diamond V Original XP.
W. K. Sanchez*, C. S. Dei1, J. Miller1, G. Poppy1, and N. St-Pierre2, 1Diamond V, Cedar Rapids, IA, 2The Ohio State University, Columbus.

W429 Effect of dietary OmniGen-AF on milk somatic cell count and the ability of isolated blood neutrophils to kill pathogens.
C. R. Rill**, T. Lu1, J. E. Williams1, B. Hatch1, B. Shaffi21, P. Rezamand2, J. Chapman2, and M. A. McGuire1, 1The University of Idaho, Moscow, 2Prince Agri. Products Inc., Quincy, IL.

W430 Effects of two processed grain sources in preparturient diets on health and performance of Holstein dairy cows during transition period.

W431 Influence of inoculation and storage time on in vitro gas production of high moisture corn.
P. C. Hoffman1, N. M. Esser1, R. D. Shaver2, W. K. Coblentz2, M. P. Scott1, A. L. Bodnar4, R. Schmidt4, and B. Charley1, 1University of Wisconsin, Madison, 2US Dairy Forage Research Center, Marshfield, WI, 3Iowa State University, Ames, 4Lallemand Inc., Milwaukee, WI.

W432 Comparing a 60-d dry period with far-off and close-up diets with a 40-d dry period with a single diet on milk production and body condition score.

W433 Influence of inoculation and storage time on alteration of the starch-protein matrix in high moisture corn.
P. C. Hoffman**, N. M. Esser1, R. D. Shaver2, W. K. Coblentz2, M. P. Scott1, A. L. Bodnar4, R. Schmidt4, and B. Charley1, 1University of Wisconsin, Madison, 2US Dairy Forage Research Center, Marshfield, WI, 3Iowa State University, Ames, 4Lallemand Inc., Milwaukee, WI.

W434 Amylopectin to amylose ratio in hulless barley in relation to intestinally absorbed protein supply to dairy cattle: A preliminary study.
P. Yu*, Z. Niu, and D. Damiran, Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada.
W435  Effect of flax hulls in the diet and infusion of flax oil in the abomasum on absorption of the mammalian lignan enterolactone in dairy cows.
H. V. Petit*, 1 C. Cortes1, R. Kazama1, D. da Silva-Kazama2, G. T. D. Santos2, L. M. Zeoula1, N. Gannon1, and C. Benchaar3, 1Dairy and Swine R & D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada; 2Departamento de Zootecnia, Universidad de Estadual de Maringa, Maringa, Brazil.

W436  Evaluating various meal criteria methods for analyzing chewing data.

W437  The effect of rumen-protected methionine and choline on reproductive performance of Holstein dairy cows.
M. Ardalan*, K. Rezayazdi, and M. Dehghan-Banadaky, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran.

W438  Effects of the source and amount of sulfur in prepartum diets on performance of periparturient Holstein cows.
E. Manidari, H. Amanlou, M. Frozanmehr, H. R. Mirzaei Alamouti*, and E. Mahjoubi, University of Zanjan, Zanjan, Iran.

Small Ruminant Sheep Production 2

W439  The effects of high dietary protein levels in Afshari ewes during late gestation.

W440  Fertility and prolificity of primiparous Suffolk ewes bred by fixed-time artificial insemination or artificial insemination at detected estrus.
G. Jasso-Diaz1, O. Mejia1, J. I. Aguilera-Soto*1, F. Mendez1, M. A. Lopez-Carlos1, R. Rincon1, and C. F. Arechiga1, 1Universidad Autonoma de Zacatecas, Zacatecas, Mexico; 2Universidad Nacional Autonoma de Mexico, Mexico.

W441  Intake and performance of sheep supplemented with brewer waste (ensiled and dried) grazing under the rainy season of tropical.

W442  Intake and performance of sheep supplemented with dried brewer grains, cottonseed meal and soybean meal grazing under tropic rainy season.
F. P. Portilho* and S. L. S. Cabral Filho, University of Brasilia, Brasilia, DF, Brazil.

W443  Evaluation of rhizoma peanut hay (Arachis glabrata) in sheep diets: Chemical composition, in vitro degradability, intake, and digestibility.

W444  Metabolic profile in pregnant ewes fed oat straw-based diets supplemented with wheat hydroponic forage.
E. Herrera-Torres1, M. Cerrillo-Soto*1,4, A. Juarez-Reyes1,4, H. Bernal-Barragan1,4, F. Rios-Rincón1,4, O. Reyes-Estrada1, M. Murillo-Ortiz1,4, G. Névérez-Carrasco1,4, and M. Guerrero-Cervantes1,4, 1Universidad Juárez del Estado de Durango, Durango, Dgo., México; 2Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México; 3Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México; 4Red Internacional de Nutrición y Alimentación en Rumiantes.

W445  Performance and voluntary intake of ewe lambs in integrated crop livestock systems in the dry season.
Sergio Lucio Salomon Cabral Filho*, Brummel Assumum Oliver Macedo1, Fernando Pimenta Portilho1, Helder Lovandini1, and Concepcita McMannus Pimentel1, 1University of Brasilia, Brasilia, Distrito Federal, Brazil; 2EMBRAPA CERRADO, Brasilia, Distrito Federal, Brazil.

W446  The effect of persimmon (Diospyros kaki L.) vinegar supplement on feed intake, digestibility, and ruminal fermentation indices in sheep.
J. H. Shin1,2, Y. D. Ko3, and S. C. Kim*1,3, 1Department of Animal Science, Gyeongsang National University, Jinju, South Korea; 2Department of Animal Sciences, University of Florida, Gainesville, 3Institute of Agriculture and Life Science, Gyeongsang National University, Jinju, South Korea.

W447  Prediction of rumen pH and digestibility of diets containing soybean hulls fed to ram lambs by the Small Ruminant Nutrition System.
R. S. Gentil*, I. Susin1, A. Cannas1, A. V. Pires1, C. Q. Mendes1, E. M. Ferreira1, G. H. Rodrigues1, A. S. Atzori2, and L. O. Tedeschi3, 1Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo, Piracicaba, São Paulo, Brazil; 2University of Sassari, Sassari, Sardinia, Italy; 3Texas A&M University, College Station.

W448  Okara as a protein supplement for early lactating ewes.
L. B. Harthan* and D. J. C. Cherney, Cornell University, Ithaca, NY.
**Swine Species**

**W454** Use of pinto bean waste on finishing hair-type lambs.

**W450** Effect of cull-chickpeas on apparent digestibility and energy concentration of feed in growing Pelibuey sheep.

**W451** Fiber digestibility of a finishing lamb diet supplemented with Fibrozyme.

**W452** Effect of variety and maturity state of oat hay on performance of ewe lambs.

**W453** Influence of substitution of alfalfa hay for dried grape pomace on performance and carcass characteristics of growing sheep.
Y. Petríz-Celaya*, J. F. Calderon-Cortes, C. Perez, M. F. Montaño, and A. Plascencia, *Instituto de Investigaciones en Ciencias Veterinarias*, Universidad Autónoma de Baja California, Mexicali 21100, Baja California, México.
W465  Association between lactation feed intake and wean to service interval of sows.
L. Anil*, S. S. Anil, and S. K. Baidoo, 1Southern Research and Outreach Center, University of Minnesota, Waseca, 2Veterinary Population Medicine, University of Minnesota, St Paul.

W466  Effect of terminal sire genotype and gender on growth performance and carcass traits of European-Chinese pigs destined to the dry-cured industry.
M. Sánchez*, J. Viguera, C. Carrasco, J. Peinado, F. Flamarique, and L. Alfonso, 1Imasde Agroalimentaria S. L., Madrid, Spain, 2Grupo AN, Navarra, Spain, 3Universidad Pública de Navarra, Navarra, Spain.

W467  Effect of hyperprolific Chinese sow genetic on sow performance.

W468  Influence of crowding stress during the nursery period on growth performance of gilts and barrows.

W469  Feed intake of gilts following intracerebroventricular injection of the novel hypothalamic RFamide (RFa) neuropeptide, 26RFa.

W470  Increasing productivity and disease control on swine farms trough management tools: A field study.

SYMPOSIA AND ORAL SESSIONS
World's Poultry Science Association (WPSA) Lecture
Chair: Billy Hargis, University of Arkansas
Korbel Ballroom 1cd
9:30 AM
Poultry production: Current and future challenges and opportunities.
H. M. Hafez, Institute of Poultry Diseases, Free University of Berlin, Germany.

Animal Health
Respiratory Health, Viruses
Chair: Ty B. Schmidt, Mississippi State University
Sponsors: Elanco Animal Health, Pfizer Animal Health
304

10:30 AM 767  Newly received feedlot heifers managed with three respiratory disease protocols.
J. L. Wahrmund*, D. B. Burken, B. K. Wilson, S. J. Terrill, D. L. Step, C. R. Krehbiel, C. L. Goad, and C. J. Richards, 1Oklahoma State University, Department of Animal Science, Stillwater, 2Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater, 3Oklahoma State University, Department of Statistics, Stillwater.

10:45 AM 768  Muscle gene expression in an acute model of bovine respiratory disease.

11:00 AM 769  Bovine respiratory disease related metabolic fingerprints in beef steers.

11:15 AM 770  Evaluating timing of weaning stress on response to BVD2 vaccinations in Angus calves.
E. D. Downey*, E. C. Conrad, J. F. Ridpath, R. G. Tait, Jr., and J. M. Reecy, 1Iowa State University, Ames, 2National Animal Disease Center/ARS/USDA, Ames, IA.
Alterations in the somatotrophic axis during an infectious bovine rhinotracheitis viral (IBRV) challenge in beef steers.
S. M. Falkenberg*, T. B. Schmidt, D. H. Keisler, J. L. Sartin, J. O. Buntyn, and J. A. Carroll, 1Mississippi State University, Mississippi State, 2University of Missouri, Columbia, 3Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 4Auburn University College of Veterinary Medicine, Auburn, AL.

Identification of genetic regions associated with bovine viral diarrhea-persistently infected cattle.
R. Zanella*, J. Wenz, E. Casas, J. S. Neibergs, D. Moore, and H. L. Neibergs, 1Washington State University, Pullman, 2United States Meat Animal Research Center, Clay Center, NE.

Economic analysis of persistently infected bovine viral diarrhea disease prevalence in Washington beef herds.

Pre-arrival management of newly received beef calves with or without exposure to a persistently infected bovine viral diarrhea virus type I calf affecting health, performance, bovine viral diarrhea virus type I titers, and circulating leukocytes.
J. T. Richeson* and E. B. Kegley, University of Arkansas, Fayetteville.

ASAS Western Section Symposium
Perinatal Programming of Offspring Quality 1: Basic Concepts and Experimental Evidence
Chair: Larry Reynolds, North Dakota State University
Sponsor: ASAS Western Section
Korbel Ballroom 1ab

Key principles of developmental programming of later life events: Observations in primate development.
P. W. Nathanielsz*, L. Cox, T. McDonald, S. Ford, K. Mitsuya, and M. Nijland, 1Center for Pregnancy and Newborn Research, The University of Texas Health Science Center, San Antonio, 2University of Wyoming, Laramie.

Epigenetic transgenerational actions of environmental factors on reproduction and disease: The ghosts in your genome.

Even her uterus can’t protect you. Stress in life: A multi-species review.
D. C. Lay Jr.*, USDA-Agricultural Research Service, Livestock Behavior Research Unit, West Lafayette, IN.

Beef Species
Beef Management
Chair: Matt Hersom, University of Florida
303

Fixed-time AI conception rates in beef cows resulting from reduced 2-shot prostaglandin intervals on day 5 of a 5-d CIDR-Co-synch estrus synchronization.

Effect of castration technique on beef calf performance and residual feed intake.

Effect of preconditioning average daily gain on feedlot performance and carcass characteristics of beef cattle.
J. D. Savell*, T. A. Thrift, and M. J. Hersom, University of Florida, Gainesville.

Effect of estimated brahman percentage on preconditioning performance, feedlot performance and carcass characteristics of beef cattle.
J. D. Savell, T. A. Thrift, and M. J. Hersom*, University of Florida, Gainesville.

Breed and winter nutrition effects on body weight, condition, and blood metabolite patterns of cows grazing bahiagrass pastures.
S. W. Coleman*, M. J. Williams, C. C. Chase, and D. G. Riley, USDA ARS Subtropical Agricultural Research Station, Brooksville, FL.

Breeding and Genetics
Milk and Carcass Composition
Chair: Alison Van Eenennaam, University of California-Davis
403/404


11:00 AM 786 Relationships between feedlot growth and carcass traits in Angus: Tri-County Steer Carcass Futurity. L. D. Leachman*, D. R. Notter, S. P. Greiner, and R. M. Lewis, Virginia Tech, Blacksburg.


11:45 AM 789 The economics of using DNA markers for bull selection in the seedstock sector. A. L. Van Eenennaam*, J. H. van der Werf, and M. E. Goddard, University of California-Davis, University of New England, Armidale, NSW, Australia, Victorian Department of Primary Industries, Bundoora, VIC, Australia, University of Melbourne, Parkville, VIC, Australia.

Dairy Foods
Cheese
Chair: Brandon Nelson, Daisy Brand
501/502

10:30 AM 790 Studies on the application of dielectric spectroscopy for the measurement of process cheese functionality. J. Amamcharla*, L. E. Metzger, O. Grace, and C. Jones, MidWest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings, Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater.

10:45 AM 791 The effect of NaCl/KCl substitution on Halloumi cheese during storage: Chemical composition, proteolysis, texture profile, and microstructure. M. M. Ayyash* and N. P. Shah, Victoria University, Melbourne, VIC, Australia.


11:15 AM 793 Influence of sodium gluconate on flavor and microbiology of low-fat Cheddar cheese. D. J. McMahon*, C. J. Oberg, L. Moyes, R. E. Miracle, and M. A. Drake, Western Dairy Center, Utah State University, Logan, Microbiology Department, Weber State University, Ogden, UT, Southeast Dairy Foods Research Center, North Carolina State University, Raleigh.
Optimization of the manufacture of a no-fat-added reduced-sodium processed cheese (Requeijão cremoso).

Consumer flavor preferences and level of aged Cheddar cheese flavor.
D. J. McMahon* and R. Wadhwani, Western Dairy Center, Utah State University, Logan.

Nutritional and organoleptic quality of Cheddar cheese prepared from goat and buffalo milk blends.
M. Nasir*, H. Jabeen, M. Abdullah, M. A. Jabbar, and M. A. Ali, University of Veterinary and Animal Sciences, Lahore, Punjab, Pakistan.

Dairy Foods
Chemistry-Protein
Chair: Kerry Kaylegian, Pennsylvania State University
503/504

10:30 AM 797
Ability of Smart Nose to discriminate (α) biofilms contributing to produce unique volatile compounds in inoculated milk.
S. Carpino*1, I. Stampelou2, G. Belvedere3, C. Pediliggieri1, and G. Licitra1,2, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2Wageningen University, the Netherlands, 3DACPA, University of Catania, Catania, Italy.

10:45 AM 798
Segmentation of scanning electron microscopy images using incremental learning.
G. Impoco1, L. Tuminello1, M. Caccamo*2, and G. Licitra1, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2DACPA, University of Catania, Catania, Italy.

11:00 AM 799
Improvements and validation of mid-infrared predictions of milk fatty acid.
H. Soyeurt*1, 2, S. McParland2, D. Berry1, E. Wall1, N. Gengler1, 2, F. Dehareng3, and P. Dardenne4, 1University of Liege, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Namur, Belgium, 2National Fund for Scientific Research, Brussels, Belgium, 3Teagasc Moorepark Dairy Production Research Centre, Fermoy, Cork, Ireland, 4Sustainable Livestock Systems Group, Scottish Agricultural College, Penicuik, Midlothian, UK, 5Agricultural Walton Research Centre, Quality Department, Gembloux, Namur, Belgium.

11:15 AM 800
Evaluation of a faster extraction and purification procedure for the analysis of vitamin D in fortified milk.
T. C. Schoenfuss*1 and O. Shimelis2, 1University of Minnesota, St. Paul, 2Sigma-Aldrich, Bellfonte, PA.

11:30 AM 801
Structural comparison of bovine and camel chymosin in relation to cheesemaking properties.
K. B. Qvist*, J. L. Jensen1, J.-C. N. Poulsen2, M. Harboe3, H. van den Brink1, A. Mølgaard4, and S. Larsen5, 1Chr. Hansen, Hørsholm, Denmark, 2Department of Chemistry, University of Copenhagen, Copenhagen, Denmark.

11:45 AM 802
Detection of proteolysis in milk.
A. S. Grandison*1, L. M. Chove2, and M. J. Lewis1, 1University of Reading, Reading, Berkshire, UK, 2Sokoine University, Morogoro, Tanzania.

12:00 PM 803
Genotyping of κ-casein and β-lactoglobulin genes in Chinese Holstein dairy cows, Jersey, and water buffalo.
D. X. Ren*, S. Y Miao, Y. L. Chen1, C. X. Zou, X. W. Liang1, and J. X. Liu1, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Water Buffalo Institute, Chinese Academy of Agricultural Science, Nanning, China.

12:15 PM 804
Impact of plasmin hydrolysis of caseins on the minimum coagulation temperature observed for milk during renneting.
B. Coude*, Y. Lu, and J. Lucey, University of Wisconsin, Madison.
Extension Education 2
Chair: Tamilee Nennich, Purdue University
507

10:30 AM 805  Bilingual audiovisual technology improves dairy animal care and quality assurance.
B. Butler*, S. Torres, J. Valles, C. D. Reinhardt, and D. U. Thomson, Kansas State University, Manhattan.

10:45 AM 806  Impact of a practical dairy farm management training workshop on the knowledge level of participants.
E. Ashraf*, Z. Hayat¹, M. Z. U. Khan², S. U. Ansari³, I. Hussain¹, F. A. Atif², M. Arif², and M. Luqman¹, ¹University College of Agriculture, University of Sargodha, Sargodha-40100, Pakistan; ²University of Veterinary & Animal Sciences, Lahore, Pakistan.

11:00 AM 807  A stochastic evaluation of reproductive management programs for dairy herds.
J. O. Giordano*, P. M. Fricke, M. C. Wiltbank, and V. E. Cabrera, University of Wisconsin, Madison.

11:15 AM 808  Optimization of insemination and replacement decisions under herd constraints.
A. De Vries*, University of Florida, Gainesville.

11:30 AM 809  Animals and food security: Blending land-grant missions through international engagement in Romania.
P. D. Ebner* and M. A. Russell, Purdue University, West Lafayette, IN.

11:45 AM 810  Avian embryology posters as a teaching aid.
T. A. Hess*, J. P. Blake², W. D. Berry², and R. A. Voitle², ¹School of Forestry and Wildlife Sciences, Auburn, AL; ²Auburn University, Poultry Science Department, Auburn, AL.

12:00 PM 811  Alternative fuel demonstrations on Pennsylvania turkey, broiler and duck farms burning poultry litter, wood pellets and wood chips versus propane.

12:15 PM 812  Equine rotational grazing demonstration: field observations and extension program impact.
A. O. Burk*, N. M. Fiorellino, K. M. Wilson, T. A. Shellem, and M. E. Dwyer, University of Maryland, College Park.

Forages and Pastures
Dairy Forages
Chair: Marie Krause, West Virginia University
Korbel Ballroom 2c

10:30 AM 813  Milk production and feed efficiency in dairy cows fed corn silage hybrids varying in fiber digestibility.
L. E. Chase*, Cornell University, Ithaca, NY.

10:45 AM 814  Performance of dairy cows fed high water soluble carbohydrate sorghum silage.
S. Amer* and A. F. Mustafa, McGill University, Ste-Anne-de-Belleview, QC, Canada.

11:00 AM 815  Effects of water soluble carbohydrate content of ensiling characteristics, chemical composition and in vitro digestibility of sorghum silage.
S. Amer*, P. Seguin¹, F. Hassanat¹, R. Berthiaume², and A. Mustafa³, ¹McGill University, Ste-Anne-de-Belleview, QC, Canada; ²Dairy and Swine Research and Development Centre, Lennoxville, QC, Canada.

11:15 AM 816  A meta-analysis approach to model the effect of increased organic matter digestibility on milk solids production from dairy cows fed fresh ryegrass.
D Pacheco*, R. E. Vibart¹, and B. A. Barrett², ¹Food, Metabolism & Microbiology, AgResearch Grasslands, Palmerston North, New Zealand, ²Forage Improvement, AgResearch Grasslands, Palmerston North, New Zealand.

11:30 AM 817  Effects of microbial corn silage inoculants on silage fermentation, microbial contents, aerobic stability, and milk production under field conditions.
N. B. Kristensen*, K. H. Sloth², O. Højberg², N. H. Spliid¹, C. Jensen¹, and R. Thøgersen³, ¹Aarhus University, Tjele, Denmark; ²Agro Tech A/S, Aarhus, Denmark; ³Danish Agricultural Advisory Service, Aarhus, Denmark.

11:45 AM 818  Some factors with influence on the silage acidity and the aerobic stability.
Y. Acosta Aragón*, K. Schoendorfer², S. Pasteiner¹, A. Schatzmayr², and G. Boeck³, ¹Biomin Holding GmbH, Herzogenburg, Lower Austria, Austria; ²Biomin Research Center, Tulln, Lower Austria, Austria.
12:00 PM 819 Effect of herbage mass and pasture allowance on perennial ryegrass sward structure and milk yield during the grazing season.
A. I. Roca-Fernández*, M. O'Donovan, J. Curran, and A. González-Rodríguez, Agrarian Research Centre of Mabegondo, La Coruña, Galicia, Spain, Moorepark Dairy Production Research Centre, Fermoy, Co. Cork, Ireland.

12:15 PM 820 High reliance on grass for an improved milk fatty acids composition.
A. I. Roca-Fernández*, A. González-Rodríguez, O. P. Vázquez-Yáñez, and J. A. Fernández-Casado, Agrarian Research Centre of Mabegondo, La Coruña, Galicia, Spain, Agrarian and Fitopathologic Laboratory of Galicia, La Coruña, Galicia, Spain.

12:30 PM 821 Effect of stocking rate on sward characteristics and milk performance in sustainable dairy farms from humid areas.
A. I. Roca-Fernández*, A. González-Rodríguez, and O. P. Vázquez-Yáñez, Agrarian Research Centre of Mabegondo, La Coruña, Galicia, Spain.

Growth and Development
Regulation of Adipogenesis and Adipose Tissue Development
Chair: Rodney A Hill, University of Idaho
Korbel Ballroom 3a

10:30 AM 822 Adipogenic differentiation state-specific gene expression as related to bovine carcass adiposity.

10:45 AM 823 Palmitoleic acid (C16:1) changes fatty acid profiles and alters gene expression in bovine adipocyte cultures.
T. A. Burns*, S. K. Duckett, and S. L. Pratt, Clemson University, Clemson, SC.

11:00 AM 824 Effect of fatty acids on adipocyte differentiation specific genes expression.

11:15 AM 825 Expression of genes associated with adipocyte differentiation differs with age and adipose tissue depot during growth.

11:30 AM 826 Hedgehog signaling mediates adipogenesis in C3H10T1/2 cells via down-regulation of COUP-TFI.

11:45 AM 827 Characterization of fat mass and obesity associated gene (FTO) expression in the broiler chicken.

12:00 PM 828 Effect of nutrition and chronic infusion of leptin on intake and body composition of Bos indicus heifers at puberty.

Horse Species 2
Chair: Betsy Greene, University of Vermont
Korbel Ballroom 3b

10:30 AM 829 Assessing heat load and dissipation using digital infrared thermography and serum cortisol profiles in horses during the summer months.
Y. Dupre*, A. Strohm, E. Keis, J. Harney, K. Moulton*, and P. L. Ryan, Tuskegee University, Mississippi State University.

10:45 AM 830 Effects of selenium supplementation and prolonged exercise on antioxidant gene expression in equine skeletal muscle.

11:00 AM 831 Fatty acid composition of synovial fluid in horses fed long-chain polyunsaturated fatty acids: A pilot study.
11:15 AM Break


11:45 AM 833 Proteomic analysis of synovial fluid and plasma from horses fed a high or low starch diet. E. A. Nowelsky*, J. K. Morrissey†, D. S. Gibson‡, P. A. Harris*, and W. B. Stanier¶, †The Pennsylvania State University, University Park, ‡University of Colorado Denver, Aurora, ¶Equine Studies Group, Waltham Centre for Pet Nutrition, Melton Mowbray, UK.

12:00 PM 834 Effects of a 24 h feed withdrawal on SGLT1, GLUT5 and PepT1 gene expression in the small intestine and right ventral colon of the horse. B. E. Aldridge*, T. B. Lescun, and J. S. Radcliffe, Purdue University, West Lafayette, IN.


Immunology and Pathology
Chair: Isis K. Mullarky, Virginia Tech
401/402

10:30 AM 836 Effects of an experimental feed additive on neutrophil-mediated killing of Streptococcus equi and on markers of innate immune function in horses. A. Rowson*, D. Sherwood, Y. Wang, S. Puntenney, and N. E. Forsberg, OmniGen Research LLC, Corvallis, OR, Oregon State University, Corvallis.

10:45 AM 837 Effects of OmniGen-AF on development of humoral immune responses in beef cattle and in rats following a vaccination program. S. B. Puntenney*, Y. Wang, A. Rowson, and N. E. Forsberg, OmniGen Research LLC, Corvallis, OR.

11:00 AM 838 Passive immunity to a commercial E. coli-SRP vaccine in beef cattle colostrum from cows grazing native range. B. W. Wileman*, D. U. Thomson, K. C. Olson, and L. A. Pacheco, College of Veterinary Medicine, Kansas State University, Manhattan, College of Animal Sciences and Industry, Kansas State University, Manhattan.


11:30 AM 840 Evaluation of immunological status of newborn dairy calves when respective dams were fed a stepwise moderate energy diet or a controlled energy diet during the dry period. J. S. Osorio*, P. Ji, G. Invernizzi, J. K. Drackley, and J. J. Loor, University of Illinois, Urbana, University of Milan, Milan, Italy.


Physiology and Endocrinology
Hormonal Control of Estrus in Beef Cattle
Chair: Bob Cushman, USDA Meat Animal Research Center
505/506

10:45 AM  843  Comparison of long-term progestin-based protocols to synchronize estrus prior to fixed-time AI in beef heifers.  

11:00 AM  844  Comparison of long- versus short-term progestin-based protocols to synchronize estrus and ovulation prior to fixed-time AI in postpartum beef cows.  

11:15 AM  845  Effect of PGF2α administration at CIDR insertion on AI pregnancy rates in beef heifers.  
B. L. Sparks*, S. L. Lake, J. Berry, K. Heaton, R. P. Lemenerger, L. A. Horstman, K. S. Fisher, P. J. Gunn, and G. A. Bridges, Purdue University, West Lafayette, IN, University of Wyoming, Laramie, Utah State University, Logan.

11:30 AM  846  Influence of inducing luteal regression prior to a fixed-time AI CIDR protocol in postpartum beef cows on pregnancy success.  
G. A. Perry*, B. L. Perry, and J. H. Krantz, Department of Animal & Range Sciences, Brookings, SD.

11:45 AM  847  Influence of luteal regression prior to GnRH on LH pulse frequency and synchrony of follicular growth.  
J. K. Grant*, F. M. Abreu, and G. A. Perry, Department of Animal & Range Sciences, Brookings, SD, USDA-ARS Ft. Keogh, Miles City, MT.

12:00 PM  848  The influence of two doses of PGF2α given at 2 or 12 hour intervals on luteolysis and pregnancy rate to timed AI with the 5-d CO-Synch + CIDR program.  

12:15 PM  849  Use of two coincident doses of PGF2α with the 5-d CO-Synch + CIDR estrous synchronization program.  
L. H. Cruppe*, L. A. Souto, M. Maquivar, P. Gunn, M. L. Mussard, D. Wolfenson, A. V. Pires, G. A. Bridges, and M. L. Day, The Ohio State University, Columbus, University of São Paulo, Piracicaba, SP, Brazil, Purdue University, West Lafayette, IN, The Hebrew University, Rehovot, Israel.

Production, Management and the Environment  
Beef 1

Chair: John Comerford, Pennsylvania State University
Korbel Ballroom 4def

10:30 AM  850  Evaluation of beef cow and calf separation systems to improve reproductive performance of first-calf cows.  
P. G. M. A. Martins*, D. B. Araujo, and J. D. Arthington, University of Florida, Range Cattle Research and Education Center, Ocala.

10:45 AM  851  Comparison of RFI evaluated as heifers with RFI reevaluated again as mature cows.  

11:00 AM  852  Level of maternal winter supplement and feed restriction during postweaning development influences circulating concentrations of IGF-I in heifers during the peripartum and rebreeding period.  

11:15 AM  853  Winter grazing system and supplementation of beef cows during late gestation influence heifer progeny.  
R. N. Funston*, D. M. Larson, A. F. Summers, J. L. Martin, and D. C. Adams, University of Nebraska West Central Research and Extension Center, North Platte.

11:30 AM  854  Gastrointestinal nematode egg shedding rates in temperate adapted Angus and tropically-adapted Brahman and Romosiniuan calves at weaning.  

11:45 AM  855  Effect of calving season on net returns and risk of cow-calf production in western Canada.  
T. K. Sirski, D. G. Brewin, S. L. Scott*, A. D. Iwaasa, H. A. Lardner, and H. C. Block, University of Manitoba, Winnipeg, Canada, Agriculture and Agri-Food Canada, Brandon Research Centre, Brandon, Canada, Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Canada, Western Beef Development Centre, lanigan, Canada.

12:00 PM  856  Estrous response and pregnancy rates of beef heifers exposed to bulls during an estrus synchronization protocol that included a 14-d CIDR, PGF2α, and, timed AI and GnRH.  
The relationship of cow size to calf weaning weight in a commercial cow/calf operation in the Southern Great Plains.
G. L. Mourer*, C. P. McMurphy, E. Devuyst, and D. L. Lalman, Oklahoma State University, Stillwater.

### Production, Management and the Environment

#### Dairy 2

**Chair:** Marcia Endres, University of Minnesota
Korbel Ballroom 4abc

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper Details</th>
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<tbody>
<tr>
<td>10:30 AM</td>
<td>Infrared thermography for detection of hoof lesions in dairy cattle. A. Orman and M. I. Endres*</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Relationship between udder and leg hygiene score and somatic cell count. M. Q. Shahid*, E. M. Shane, and M. I. Endres, University of Minnesota, St. Paul.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Association between stall surface and various welfare measurements on dairy herds utilizing recycled manure solids for bedding freestalls. A. W. Husfeldt* and M. I. Endres, University of Minnesota, St. Paul.</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Associations between housing systems and animal welfare measurements assessed by survival analysis. K. M. Lobeck*, M. I. Endres, S. M. Godden, and J. Fetrow, University of Minnesota, St. Paul.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>Feed management practices on California dairies. N. Silva-del-Río*, J. M. Heguy, A. Lago, University of California Cooperative Extension, Tulare County, University of California Cooperative Extension, Stanislaus and San Joaquin Counties, APC, Inc., Ankeny, IA.</td>
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### Production, Management and the Environment

#### Environment 2

**Chair:** Carl Dahlen, North Dakota State University
Korbel Ballroom 2a

<table>
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<tr>
<th>Time</th>
<th>Paper Details</th>
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<tbody>
<tr>
<td>10:30 AM</td>
<td>Effects of heating broiler hatching eggs during 6 or 11 days of storage on hatchability. J. T. Brake*, M. Güçbilmez, S. Özlu, R. Shiranjang, and O. Elibo, North Carolina State University, Department of Poultry Science, Raleigh.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Assessment of microbial communities involved in decomposition of specified risk material using a passively aerated laboratory-scale composter. S. Xu*, T. A. McAllister, J. L. Leonard, and O. G. Clark, University of Alberta, Edmonton, AB, Canada, Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, McGill University, Ste-Anne-de-Bellevue, QC, Canada.</td>
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<tr>
<td>11:00 AM</td>
<td>Effect of improved production efficiency on pork’s carbon footprint: Derived environmental benefits of ractopamine in the US swine herd. G Boyd*, D Anderson, S. A. Sutton, C. Hogan, and A. Marks-Callahan, Camco, Broomfield, CO, Colorado State University, Fort Collins, CO, Purdue University, West Lafayette, IN, Elanco Animal Health, Greenfield, IN.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Analysis of the association of number of piglets born alive with sow level and management factors. S. S. Anil*, L. Anil, J. Deen, S. K. Baidoo, E. W. Wilson, and T. L. Ward, Veterinary Population Medicine, University of Minnesota, St Paul, Southern Research and Outreach Center, University of Minnesota, Waseca, Zinpro Corporation, Eden Prairie, MN.</td>
</tr>
</tbody>
</table>
Nutritional evaluation of kernel meal from non-toxic genotype and of detoxified kernel meal from toxic genotype of *Jatropha curcas* in rat. Y. Chen1, J. X. Liu1, H. Y. Liu1*, H. P. S. Makkar1, and K. Becker2, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Institute for Animal Production in the Tropics and Subtropics (480b), University of Hohenheim, Stuttgart, Germany.

Ruminant Nutrition
Dairy: Fats and Carbohydrates
Chair: Aimee Wertz, South Dakota State University
Korbel Ballroom 2b


11:00 AM 872 Effects of different rumen inert fatty acids on fermentation, anti-oxidative status, and microbiota in the rumen, in the absence or presence of dietary antioxidant. Y. M. Wang1, J. H. Wang1, C. Wang2*, J. X. Liu1, H. Cao3, F. C. Guo3, and M. Vázquez-Añón3, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Novus International Research Center, Beijing, China, 3Novus International, Inc., St. Louis, MO.


11:30 AM 874 Effects of feeding increasing levels of concentrate on milk fatty acid composition in grazing dairy cows. L. Antonacci1, G. A. Gagliostro*1, V. I. Cejas2, and M. A. Rodriguez2, 1Instituto Nacional de Tecnología Agropecuaria (INTA), Balcarce, Provincia de Buenos Aires, Argentina, 2Instituto Nacional de Tecnología Industrial (INTI), San Martín, Buenos Aires, Argentina.


12:00 PM 876 Effects of rapidly rumen fermentable source of starch in prepurpart diet on metabolism and performance of multi-parous Holstein cows during the periparturient period. H. R. Mirzaei Alamouti*, H. Amanlou1, and K. Rezayazdi2, 1University of Zanjan, Zanjan, Zanjan, Iran, 2University of Tehran, Karaj, Tehran, Iran.

12:15 PM 877 Effects of cereal grain level in early lactating diets on metabolism and performance of Holstein cows. H. Amanlou1, N. Fazli2, S. S. Mosavi3, H. R. Mirzaei Alamouti*, and M. Moeini3, 1University of Zanjan, Zanjan, Iran, 2Abhar Islamic Azad University, Zanjan, Abhar, Iran.

Ruminant Nutrition
Chair: Alex Bach, IRTA, Spain
Korbel Ballroom 1ef

10:30 AM 878 Effects of dietary chromium propionate on glucose metabolism and insulin sensitivity in growing cattle. J. W. Spears*, C. S. Whisnant1, G. B. Huntington1, K. E. Lloyd4, K. Krafsur2, and A. Lamptey4, 1North Carolina State University, Raleigh, 2Kemin AgriFoods North America, Inc., Des Moines, IA.

10:45 AM 879 The effect of rumen-protected choline on milk yield and composition of Holstein dairy cows. M. Ardalan*, M. Dehghan-Banadaky, and K. Rezayazdi, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran.
11:00 AM 880 | Impact of biotin on production performance of lactating dairy cows: A meta-analysis.  
B. Chen* and J. X. Liu, Institute of Dairy Science, Zhejiang University, Hangzhou, China.

11:15 AM 881 | Effects of acidified by-products and pre-partum DCAD on serum calcium, post-partum health and performance when fed to prepartum transition dairy cows.  
D. J. Rezac*, E. Block², D. Weber³, M. J. Brouk¹, and B. J. Bradford⁴, ¹Kansas State University, Manhattan, ²Arm & Hammer Animal Nutrition, Princeton, NJ.

882 | Withdrawn by author

11:30 AM 883 | Effect of feeding potassium carbonate on milk fatty acids in early lactation cows.  
J. H. Harrison*, R. L. Kincaid¹, E. Block³, and T. Jenkins², ¹Washington State University, Puyallup, ²Clemson University, Clemson, SC, ³Arm & Hammer Animal Nutrition, Princeton, NJ.

12:00 PM 884 | Effects of rumen-protected choline on performance and hepatic fat metabolism in periparturient dairy cattle.  
R. Zom¹, J. van Baal¹, M. J. de Veth², R. M. A. Goselink³, H. C. A. Widjaja-Greeffkes¹, J. A. Bakker¹, and A. M. van Vuuren*, ¹Wageningen UR Livestock Research, Lelystad, the Netherlands, ²Balchem Corporation, New Hampton, NY.

12:15 PM 885 | Dietary cation-anion difference for lactating dairy cows.  
A. Schlageter, G. Caja*, M. Ben Khedim, A. A. K. Salama, S. Carné, and E. Albanell, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain.

12:30 PM 886 | Effects of feeding organic minerals (Availa-4 and 4-Plex) on milk production and reproductive performance in lactating dairy cows: A meta-analysis.  
A. R. Rabiee¹, I. J. Lean*, M. A. Stevenon², and M. T. Socha³, ¹SBSibus, Camden, NSW, Australia, ²EpiCentre, Massey University, Palmerston North, New Zealand, ³Zinpro Performance Minerals, Eden Prairie, MN.

Sexed Semen Symposium  
Applying Sexed Semen in Cattle  
Chair: George Seidel, Colorado State University  
Sponsor: XY Inc.  
301/302

10:30 AM 887 | Current status of sexed semen technology.  
G. Seidel*, Colorado State University, Fort Collins.

11:00 AM 888 | The evolution of sex-sorted semen in the US dairy industry.  
J. M. DeJarne†, Select Sires, Inc., Plain City, OH.

11:30 AM 889 | Implications of sex-sorted dairy semen for genetic change.  
B. G. Cassell*, Virginia Polytechnic Institute and State University, Blacksburg.

12:00 PM 890 | Economic aspects of the use of sexed semen in dairy heifers and cows considering herd constraints.  
A. De Vries*, University of Florida, Gainesville.

Small Ruminant  
Sheep Production  
Chair: R. R. Cockrum, University of Wyoming  
Korbel Ballroom 3c

10:30 AM 891 | Use of n-alkanes to estimate intake and digestibility of vegetative crops by young sheep.  
H. Dove* and W. M. Kelman, CSIRO Plant Industry, Canberra, ACT, Australia.

10:45 AM 892 | Effect of level of intake on digestibility of NDF of soybean hull diets in sheep.  
### Teaching/Undergraduate and Graduate Education Symposium

#### Beyond PowerPoint: Use of Technology in the Classroom

**Chair:** Jacquelyn Hoffman, North Carolina State University

#### 10:00 AM 893

<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
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<tbody>
<tr>
<td>10:30 AM</td>
<td>AG*IDEA: A national consortium of universities for offering distance education program in agriculture.</td>
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<td>K. L. Esbenshade*, D. L. Boggs, North Carolina State University, Raleigh, Kansas State University, Manhattan.</td>
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<td>10:45 AM</td>
<td>Using cell phones to engage your audience.</td>
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<td>P. A. Curtis* and M. O. Kloppe, Auburn University, Auburn, AL.</td>
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<tr>
<td>11:00 AM</td>
<td>Use of e-portfolios for outcomes assessment in the animal sciences.</td>
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<tr>
<td>11:15 AM</td>
<td>Use of Soft Chalk to create professional appearing content that will creatively engage students.</td>
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<td>M. O. Kloppe*, P. A. Curtis, Auburn University, Auburn, AL.</td>
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<tr>
<td>11:30 AM</td>
<td>Using Second Life for poultry science.</td>
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<td>M. O. Kloppe* and P. A. Curtis, Auburn University, Auburn, AL.</td>
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<tr>
<td>11:45 AM</td>
<td>On-line text, a new technology use in animal science courses.</td>
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<td>G. M. Hill* and J. E. Link, Michigan State University, East Lansing.</td>
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</table>

#### 11:00 AM 893

**Evaluation of feeding value of corn distillers dried grains with solubles for sheep.**

G. Abdelrahim*, J. Khatiwada, N. Gurung, J. Vizcarra, and C. Kerth, Alabama A&M University, Normal, Tuskegee University, Tuskegee, AL, Auburn University, Auburn, AL.

#### 11:15 AM 894

**The effect of processing type of feedstuff on the fattening performance of Awassi ram lambs.**

H. Ustuner*, S. Dikmen, and I. I. Turkmen, University of Uludag, Bursa, Turkey.

#### 11:30 AM 895

**Effect of anaerobic enzyme matrix on fiber digestibility.**

H. M. Gado*, B. E. Borhami, Ain Shams University, Department of Animal Production, Faculty of Agriculture, Cairo, Egypt, Alexandria University, Department of Animal Production, Faculty of Agriculture (El-Shatby), Alexandria, Egypt.

### Animal Behavior and Well-Being

**Dairy, Sheep, and Beef**

**Chair:** Rick Grant, William H. Miner Agricultural Research Institute

#### 2:00 PM 903

**Behavioural changes of dairy cows during drying-off using abrupt cessation of milking.**

K. A. Painter, K. E. Leslie*, and E. H. Tatone, University of Guelph, Guelph, ON, Canada.

#### 2:15 PM 904

**Short-term overcrowding affects the lying and social behavior of lactating Holstein dairy cows.**


#### 2:30 PM 905

**Early detection of lameness through pedometric activity and lying behaviour of dairy cattle.**

J. H. Higginson*, S. T. Millman, G. Cramer, K. E. Leslie, A. M. B. de Passille, T. F. Duffield, and D. F. Kelton, University of Guelph, Guelph, ON, Canada, Iowa State University, Ames, Cramer Mobile Bovine Veterinary Services, Stratford, ON, Canada, Agriculture and Agri-Food Canada, Agassiz, BC, Canada.

#### 2:45 PM 906

**Behavioral responses to feeding regimens, housing and heat stress in dairy calves.**

Behavior of two cow genotypes (Holstein vs. Jersey) in two milk production systems (grazing vs. confinement).
A. I. Roca-Fernández*, C. P. Ferris, E. R. Vance, and A. González-Rodríguez, Agrarian Research Centre of Mabegondo, La Coruña, Galicia, Spain, Agri-Food and Biosciences Institute, Hillsborough, Co. Down, UK.

Break

Diet palatability influences the feeding behavior of sheep.
I. R. Ipharraguerre and J. J. Villalba, Lucta SA, Barcelona, Spain, Utah State University, Logan.

Early experience to flavor diversity influences food selection and intake by sheep.
J. J. Villalba and I. R. Ipharraguerre, Utah State University, Logan, Lucta SA, Barcelona, Spain.

Preference in cattle offered a ground switchgrass and alfalfa hay blend flavored with sucrose or citric acid.
S. J. Chavez*, S. Freeman, and G. B. Huntington, North Carolina State University, Raleigh.

Characterization of feeding behavior traits and associations with feed efficiency in beef heifers fed a high-grain diet.
E. Mendes*, G. Carstens, and L. Tedeschi, Texas A&M University, College Station.

Approaches for assessing temperament in calves post-weaning.

Relationship of temperament at calving and distribution of beef cows grazing foothill rangeland.

ASAS Western Section Symposium
Perinatal Programming of Offspring Quality 2: Evidence for Impacts of Maternal Nutrition on Livestock Production
Chair: Rick Funston, University of Nebraska
Korbel Ballroom 1ab

Maternal malnutrition induces metabolic reprogramming in offspring.
S. P. Ford, L. Zhang, L. A. George, Y. Ma, N. M. Long, A. B. Uthlaut, and P. W. Nathanielsz, Center for the Study of Fetal Programming, Department of Animal Science, University of Wyoming, Laramie, Center for Pregnancy and Newborn Research, University of Texas Health Sciences Center, San Antonio.

Impacts of maternal nutrition in farm animal species on growth characteristics of their offspring.

Maternal nutrition and developmental programming: Impacts on development and function of the gastrointestinal system in offspring.

Programming reproductive tract development.
F. F. Bartol and C. A. Bagnell, Auburn University, Auburn, AL, Rutgers, The State University of New Jersey, New Brunswick.
Beef Species Symposium
Upcoming Environmental Policies and Their Effects on Beef Production
Chair: Jason Rowntree, Michigan State University
Korbel Ballroom 2a

2:00 PM
Introduction

2:05 PM 918
Environmental issues: What every beef producer needs to know.
T. McCann Thies*, National Cattlemen’s Beef Association, Washington, DC.

3:05 PM 919
Alberta’s experiences with greenhouse gases: The beef protocols.
J. Basarab*, Department of Agricultural, Food and Nutritional Science, University of Alberta, LaCombe, AB, Canada.

4:05 PM 920
Integration of environmental mandates into ranching and farming operations.
P. Genho*, FMC, Salt Lake City, UT.

Breeding and Genetics
Functional Traits and Fitness
Chair: Selma Forni, Pig Improvement Company/Genus plc
405

2:00 PM 921
Telomere maintenance mechanisms in normal, immortalized, and transformed chicken cells.
T. H. O’Hare* and M. E. Delany, Department of Animal Science, University of California, Davis.

2:15 PM 922
Genetic analysis of walking ability and mortality in the turkey.
C. D. Quinton1, B. J. Wood*1,2, and S. P. Miller1,1 Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, Canada, 2Hybrid Turkeys, Kitchener, Canada.

2:30 PM 923
Factors affecting spermatozoa morphology in beef bulls.

2:45 PM 924
Bayesian QTL inference and gene identification for first-service conception rate in Brangus heifers.
S. O. Peters*1,2, K. Kizilkaya*1,2, D. J. Garrick1, R. L. Fernando1, J. M. Reecy2, Z. L. Hu1, R. L. Weaber3, G. A. Silver1, and M. G. Thomas1,1 New Mexico State University, Las Cruces, 2Iowa State University, Ames, 3University of Missouri, Columbia, 4Adnan Menderes University, Turkey, 5University of Agriculture, Abeokuta, Abeokuta, NGR.

3:00 PM 925
Impact of sire birth weight potential on birth and weaning traits when mated to virgin heifers.
G. K. Mantz* and P. Nyren, North Dakota State University Central Grasslands Research Extension Center, Streeter.

3:15 PM 926
Use of random regression models for the genetic analysis of farrowing survival in pigs.
C. Y. Chen*1, I. Misztal2, S. Tsuruta1, W. O. Herring1, J. Holll, and M. Culbertson2, 1Department of Animal and Dairy Science, University of Georgia, Athens, 2Smithfield Premium Genetics Group, Rose Hill, NC.

3:30 PM 927
Effectiveness of genetic predictions of Holstein gestation length and relationship to lactation yield for the subsequent lactation.
H. D. Norman*, J. R. Wright, and R. H. Miller, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

3:45 PM 928
Estimation of genetic parameters for measures of calf survival and health in a population of Holstein dairy calves in New York state.
L. Henderson*, F. Miglior2,3, A. Sewalem2,3, D. Kelton1, A. Robinson*, and K. E. Leslie1,1 Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 2Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, Ontario, Canada, 3Canadian Dairy Network, Guelph, Ontario, Canada.

4:00 PM 929
Estimation of genetic parameters for workability traits.
A. Sewalem*,1, F. Miglior1,2,3, and G. Kistemaker1,1 Agriculture and Agri-Food Canada, Guelph Food Research Center, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada.

4:15 PM 930
Health treatment rates of Holstein cows selected for large versus small body size.
Sequential evaluation of longitudinal conformation data in dairy cows.
N. Gengler*1,2, S. Vanderick1, and C. Bastin1. 1University of Liège - Gembloux Agro-Bio Tech, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

Fitness of Boer, Kiko, and Spanish does managed on humid, subtropical pasture in central Tennessee.
R. Browning Jr. *1 and M. L. Leite-Browning1, 1Tennessee State University, Nashville, 2Alabama A&M University, Huntsville.

Companion Animals Symposium
Comparative Enrichment: Implications for Health and Behavior
Chair: Cheryl L. Morris, Omaha’s Henry Doorly Zoo
Sponsors: Hill’s Science Diet, P&G

4:30 PM 931 The role of training and enrichment.
C. Dikeman*, Omaha’s Henry Doorly Zoo, Omaha, NE.

4:45 PM 932 Animals make us human: A look at the emotional lives of animals.
T. Grandin*, Colorado State University, Fort Collins.

4:50 PM 933 Bird enrichment—Above and beyond.
E. Insalaco*, Denver Zoo, Denver, CO.

5:15 PM Reception

CSAS Symposium
Issues in North American Livestock Transport
Chair: Luigi Faucitano, Agriculture & Agri-Food Canada
Sponsors: Animal Transportation Association, Alberta Farm Animal Care, CSAS

2:00 PM 940 Effects of vehicle design on the welfare and meat quality of pigs under Canadian transport conditions.
L. Faucitano*1, S. Torrey1, R. Bergeron2, T. Widowski2, T. Crowe2, J. A. Correa2, J. P. Laforest2, E. Tamminga2, and H. W. Gonyou3, 1Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 2University of Guelph, Guelph, ON, Canada, 3Laval University, Quebec City, QC, Canada, 4University of Saskatchewan, Saskatoon, SK, Canada, 5Prairie Swine Centre, Saskatoon, SK, Canada.

2:30 PM 941 Contributions of research to the practical aspects concerning long-term road transport of horses.
C. L. Stull*, University of California, Davis.

3:00 PM 942 Cattle transport in North America—Current welfare research and future directions.
K. S. Schwartzkopf-Genswein*1, L. A. González2, and T. Crowe3, 1Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2University of Alberta, Edmonton, Canada, 3University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

3:30 PM 943 Conditions within B-train trailers transporting broiler chickens in Western Canada.
Fatigue: A major cause of commercial livestock truck accidents.
J. A. Woods*, J. Woods Livestock Services, Blackie, Alberta, Canada.

**Dairy Foods**
Foods and Products
Chair: **Kerry Kaylegian**, Pennsylvania State University
503/504

2:00 PM 945
**Renneting properties of milk containing high molecular weight oat β-glucan.**
N. Sharaafi1, S. M. Tosh1, M. Alexander1, and M. Corredig1, 1University of Guelph, Guelph, Ontario, Canada, 2Agri Culture Agri Food Canada, Guelph, Ontario, Canada.

2:15 PM 946
**Interactions of milk proteins with tea polyphenols.**
S. Haratifar*, G. Paliyath, and M. Corredig, University of Guelph, Ontario, Canada.

2:30 PM 947
**Anticarcinogenic properties of milk fat globule membrane.**
R. Zanabria1, A. M. Tellez1,2, M. Griffiths2,3, and M. Corredig1, 1University of Guelph, Guelph, ON, Canada, 2Canadian Research Institute for Food Safety (CRIFS), Guelph, ON, Canada.

2:45 PM 948
**Gelation properties of casein micelles during combined renneting and mesophilic bacterial fermentation: Effect of concentration by ultrafiltration.**
E. Salvatore1,2, M. Alexander1, A. Pirisi1, and M. Corredig2, 1Agris Sardegna, Dipartimento per la Ricerca nelle Produzioni Animali, Olmedo, Italy, 2Department of Food Science, University of Guelph, Guelph, Ontario, Canada.

3:00 PM 949
**Production of α-lactalbumin enriched concentrate from serum whey.**
C. Marella*, P. Salunke, L. E. Metzger, and K. Muthukumarappan, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

3:15 PM 950
**Evaluation of correlations between chemical compositions and sensory properties in Turkish set-type yoghurts.**
Z. Guler1 and Y. W. Park*, 1Mustafa Kemal University, 31034 Antakya, Hatay, Turkey, 2Fort Valley State University, Fort Valley, GA.

**Dairy Foods**
Microbiology
Chair: **Stephanie Clark**, Iowa State University
501/502

2:00 PM 951
**Wooden vat to produce PDO Ragusano cheese is a living system.**
G. Licitra1,2, L. Tuminello2, N. Fucà2, P. Campo2, S. Lortal3, and S. Carpino2, 1DACP A, University of Catania, Catania, Italy, 2CoRFiLaC, Regione Siciliana, Ragusa, Italy, 3UMR Science et Technologie du Lait et de l’Oeuf, Rennes Cedex, France.

2:15 PM 952
**Survival of Lactobacillus acidophilus in Boursin-like cheese after gastric and enteric conditions in vitro.**
A. M. Liserre*, P. B. Zacarchenco1, K. M. O. dos Santos1, F. C. A. Buriti1, L. S. Gonçalves1, and L. R. Monteiro1, 1Instituto Tecnologia Alimentos. Av. Brasil, Campinas, SP, Brazil, 2EMRAP A, Centro Nacional de Pesquisa de Caprinos e Ovinos, Sobral, Ceará, Brazil.

2:30 PM 953
**Addition of probiotic bacteria modifies the biodiversity of other lactic acid bacteria in Cheddar cheese.**
B. Ganesan1,2, P. C. Weimer3, G. Rompato4, J. Pinzon1, P. Desal5,6, C. Brotherson7,8, and D. J. McMahon9,7, 1University of California, Davis, 2Center for Integrated BioSystems, Utah State University, Logan, 3Department of Nutrition, Dietetics, and Food Sciences, Utah State University, Logan, 4Western Dairy Center, Utah State University, Logan.

2:45 PM 954
**Production of microcapsules of Lactobacillus acidophilus to add in dairy products.**
A. M. Liserre*, P. B. Zacarchenco1, C. R. Meneze1, A. E. C. Antunes2, G. M. B. Q. Cardozo1, and I. Moreno1, 1Tecnolat/Instituto de Tecnologia de Alimentos, Campinas, São Paulo, Brazil, 2UNICAMP; Universidade Estadual de Campinas – Limeira, Limeira, São Paulo, Brazil, 3Universidade de Santa Maria, Rio Grande do Sul, Brazil.
Lactation Biology 2
Chair: Wendie Cohick, Rutgers University
Korbel Ballroom 3b

2:00 PM 958
Regulation of mammary epithelial cell proliferation and gene expression by *Semen vaccariae* active monomer.
Z. Y. Wan, H. L. Tong, Q. Z. Li, and X. J. Gao*, Key Laboratory of Dairy Science of Education Ministry, Northeast Agricultural University, Harbin, China.

2:15 PM 959
Deletion of thyroid hormone responsive spot 14 exacerbates the anti-lipogenic effect of trans-10, cis-12 conjugated linoleic acid (CLA) in the mammary gland.
K. J. Harvatin*1, Y. R. Boisclair2, and D. E. Bauman2, 1Penn State University, University Park, 2Cornell University, Ithaca, NY.

2:30 PM 960
The role of SREBP-1 in lipogenesis in bovine mammary epithelial cells.
L. Ma* and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.

2:45 PM 961
Effects of t10,c12 CLA dose on mammary gland development, adiposity, and inflammation in mice.

3:00 PM 962
Impact of time of milk storage in the udder on fat.
M. Dutreuil1,2, C. Cébo3, J. Guinard-Flament1,1, and C. Hurtaud*1,2, 1INRA UMR1080 Production du lait, Saint-Gilles, France, 2Agrocampus Ouest UMR1080 Production du lait, Rennes, France, 3INRA Unité GABI, Jouy-en-Josas, France.

3:15 PM 963
IGF-I regulates the expression of GLUT12 in bovine mammary epithelial cells.
Y. Shao* and F-Q. Zhao, Department of Animal Science, University of Vermont, Burlington.

3:30 PM 964
Mammary mitochondrial function is associated with lactation performance in inbred mice.
J. Wei*, S. Kiser, J. George, D. Anderson, and D. Hadsell, Baylor College of Medicine, Houston, TX.

3:45 PM 965
Temporal changes in the mammary mitochondrial proteome of the mouse suggest that increases in a limited number of proteins is necessary to support increased ATP synthesis during early lactation.
D. Hadsell*1, W. Olea1, R. Matsunami6, and D Engler*, 1Baylor College of Medicine, Houston, TX, 2The Methodist Hospital Research Institute, Houston, TX.
Nonruminant Nutrition
Feed Additives
Chair: Scott Radcliffe, Purdue University
Korbel Ballroom 3c

2:00 PM 970
Benefits of a synthetic antioxidant on improving growth performance in broiler chicks.
J. Zhao*, F. Yan, C. Atwell, D. Macaraeg, M. Vazquez-Anon, J. D. Richards, R. J. Harrell, S. Carter, and T. Hampton,
Novus International Inc.

2:15 PM 971
Probiotic, prebiotic and yeast supplementation in broiler diets from 1 to 42 days of age: 1. Productive performance and economic efficiency.
S. A. Riad1, H. M. Safaa*, F. R. Mohamed1, S. S. Siam2, and H. A. El-Minshawy3, 1Animal Production Department, Faculty of Agriculture, Cairo University, Giza 12613, Giza, Egypt, 2Poultry Breeding Department, Animal Production Research Institute, Dokki, Giza, Egypt, 3Ministry of Agriculture, Dokki, Giza, Egypt.

2:30 PM 972
Starter feed supplementation level effects of coated sodium butyrate (Adimix) on growth performance of broilers.
R. D. Malheiros* and P. R. Ferket, North Carolina State University, Raleigh.

2:45 PM 973
Investigation on the effects of antibiotic growth promoters alternatives on broiler performance.
M. Shivazad1, 2, N. Ghazvini2, and S. N. Mousavi1, 1University of Tehran, Tehran, Iran, 2Varamin-Pishva branch, Islamic Azad University, Varamin, Iran.

3:00 PM 974
Dietary supplementation of Spirulina platensis in Austra-White chicken improves proximate composition of meat.
A. Kollanoor Johny1, 2, K. P. Sreekumar3, S. S. Nair1, and P. Kuttinarayanan4, 1Department of Animal Nutrition, College of Veterinary and Animal Sciences, Kerala Agricultural University, Mannuthy, Kerala, India, 2Department of Animal Physiology, College of Veterinary and Animal Sciences, Kerala Agricultural University, Mannuthy, Kerala, India, 3Center of Excellence in Meat Science and Technology, College of Veterinary and Animal Sciences, Kerala Agricultural University, Mannuthy, Kerala, India.

3:15 PM
Break

3:30 PM 975
Increased fiber digestion and decreased fecal output in pigs fed fibrolytic bacteria.
C. Ziemer*, S. Arcidiacano2, A. Ragauskas3, and M. Morrison4, 1National Laboratory for Agriculture and the Environment, ARS, USDA, Ames, IA, 2US Army Natick Soldier Center, Natick, MA, 3Institute of Paper Science and Technology, Georgia Institute of Technology, Atlanta, 4Department of Animal Science, Ohio State University, Columbus. 4CSIRO Livestock Industries, St. Lucia. QLD, Australia.

3:45 PM 976
Effects of dietary reseratrol supplementation on egg production and egg yolk lipid peroxidation.
K. Sahin*, F. Akdemir2, C. Orhan3, M. Tuzcu4, A. Hayirl5, and N. Sahin1, 1Department of Animal Nutrition & Nutritional Disorders, Faculty of Veterinary Medicine, Firat University, Elazig, Turkey, 2Department of Animal Nutrition & Nutritional Disorders, Faculty of Veterinary Medicine, Dicle University, Diyarbakir, Turkey, 3Department of Food Science, Faculty of Science, Firat University, Elazig, Turkey, 4Department of Animal Nutrition & Nutritional Disorders, Faculty of Veterinary Medicine, Ataturk University, Erzurum, Turkey.

4:00 PM 977
The effect of feeding Original XPC to turkey breeder hens and progeny on starter poult performance and early breast muscle development.
P. R. Ferket*, R. D. Malheiros1, M. J. Wineland2, J. L. Grimes1, and D. T. Moore2, 1North Carolina State University, Raleigh, 2Diamond V Inc., Cedar Rapids, IA.

4:15 PM 978
Use of a Bacillus amylovoricae probiotic in broiler farms.

4:30 PM 979
Chemical and nutritive composition of low-fiber canola: The effects of seed coat color and enzyme supplementation.
W. Jia*, M. Mogielinicka1, A. Rogiewicz2, G. Rakow3, D. Hickling4, and B. A. Slominski1, 1University of Manitoba, Winnipeg, Manitoba, Canada, 2Agriculture and Agri-Food Canada, Saskatoon, Saskatchewan, Canada, 3Canola Council of Canada, Winnipeg, Manitoba, Canada.
Nonruminant Nutrition
Health 2
Chair: Marcos Rostagno, Virginia Tech
301/302

2:00 PM 980
Pre-hatch colonization of the chick gut with probiotic bacteria.

2:15 PM 981
Methionine hydroxy-analogue as antioxidant defence enhancer.

2:30 PM 982
Comparative in vitro antimicrobial activity and mechanism of bovine lactoferricin-derived synthetic peptides.

2:45 PM 983
Microbial programming in the gut of neonatal pigs.
D. Petri, A. G. Van Kessel, University of Saskatchewan, Saskatoon, Canada.

3:00 PM 984
Efficacy of water-soluble antioxidants on chicken embryos challenged by hypoxia.
J. E. de Oliveira*, Y. Li, H. Willemsen, E. Decuyper, and T. A. Scott. Provimi, Velddriel, the Netherlands.

3:15 PM 985
Growth response, carcass evaluation and haematology of broilers fed graded levels of enzyme treated cocoa bean shell based diets.
M. D. Olumide, O. A. Ogunwole, and O. A. Adebiyi, Department of Animal Science, University of Ibadan, Ibadan, Nigeria.

3:30 PM 986
Evaluation of the efficacy of Myco-Ad in preventing aflatoxin toxicity in broiler chicks.
C. A. Mallmann, P. Dilkin, L. Giacomini, R. H. Rauber, and D. Zaviezo. Universidade Federal de Santa Maria, Laboratorio de Analises Micotoxicologicas (LAMIC), Santa Maria, RS, Brazil.

3:45 PM 987
Efficiency of feed additives to reduce the effects of chronic exposure to aflatoxin and deoxynivalenol on growth and immune status of pigs.

4:00 PM 988
Discrepancies between in vitro and in vivo fumonisin binding with organoclays.

Physiology and Endocrinology
Sperm Fertility, Embryos and Development
Chair: David Miller, University of Illinois
505/506

2:00 PM 989
Comparison study of alternative cryoprotectants for cryopreserving bull spermatozoa.
M. M. Awad*, Animal Production Dept. Faculty of Agriculture, Suez Canal University, Ismailia, Egypt.

2:15 PM 990
Effects of anti-lipid peroxidation supplements on frozen-thawed boar spermatozoa.
B. D. Whitaker*, R. Taupier, and S. J. Casey, Ferrum College, Ferrum, VA.

2:30 PM 991
Reproductive performance of sows inseminated with various doses of frozen-thawed semen.
K. S. Fisher*, T. S. Stewart, P. H. Purdy, H. D. Blackburn, W. L. Singleton, B. L. Sparks, P. J. Gun, and G. A. Bridges. Purdue University, West Lafayette, IN, National Animal Germplasm Program, NCGRP, ARS, USDA, Fort Collins, CO.

2:45 PM 992
Analysis of proteomic changes during sperm capacitation associated with sperm fertility.
Prognosis of bull fertility using sperm penetration assay.

Semen quality index of broiler breeder cockerels subjected to different collection techniques.
A. Ijaz*, M. U. Sohail, H. Rehman, M. Aleem, A. Riaz, and M. S. Yousaf, University of Veterinary and Animal Sciences, Lahore, Pakistan.

Effect of supplemental sialic acid on the fertility of in vitro stored turkey semen.
J. A. Long* and T. Conn, Beltsville Agricultural Research Center, Beltsville, MD.

Vitrification of bovine blastocysts: Effects of cooling with an aluminum block submerged in liquid nitrogen versus liquid nitrogen cooled air and lowering sodium and calcium concentrations in vitrification media.
S. G. Kruse* and G. E. Seidel, Colorado State University, Fort Collins.

Efficacy of embryo transfer in lactating dairy cows during summer using fresh or vitrified embryos produced in vitro with sex-sorted semen.
B. M. Stewart1, J. Block2,4, P. Morelli3, A. E. Navarrette1,3, M. Amstalden1, L. Bonilla4, P. J. Hansen1, and T. R. Bilby*1,3, 1Texas AgriLife Research and Extension, Texas A&M System, Stephenville, 2OvaTech, LLC, Gainesville, FL, 3Texas A&M University, College Station, 4University of Florida, Gainesville.

The importance of fibroblast growth factors on bovine embryo development in vitro.

Changes in cotyledonary vascular architecture with advancement of placental (PLAC) type during gestation in the ewe.
S. Hein*1, A. Uthlaut1, P. W. Nathanielsz1,2, and S. P. Ford1, 1Center for the Study of Fetal Programming, Dept. of Anim. Sci., University of Wyoming, Laramie, 2Center for Pregnancy and Newborn Research, Dept. of OB/GYN, University of Texas Health Sciences Center, San Antonio.

Production, Management and the Environment
Beef 2
Chair: Carl Dahlen, North Dakota State University
Korbel Ballroom 4def

Effects of anabolic implants on growth and carcass traits of feedlot steers and heifers: A meta-analysis.
C. D. Reinhardt*1 and L. R. Corah2, 1Kansas State University, Manhattan, 2Certified Angus Beef, Manhattan, KS.

Factors affecting Certified Angus Beef acceptance in spring-born, black-hided beef calves.
G. D. Fike*,1 M. E. King1, L. R. Corah2, and W. D. Busby3, 1Certified Angus Beef LLC, Wooster, OH, 2Iowa Tri-County Steer Carcass Futurity, Lewis.

Effect of time of birth within the spring calving season on performance and carcass traits of beef calves fed in the Iowa Tri-County Steer Carcass Futurity.
G. D. Fike*,1 M. E. King1, L. R. Corah2, and W. D. Busby3, 1Certified Angus Beef LLC, Wooster, OH, 2Iowa Tri-County Steer Carcass Futurity, Lewis.

Effects of roughage source and dried corn distillers grains concentration on feedlot performance and carcass characteristics.
C. L. Maxwell*1, M. S. Brown1, N. A. Cole2, B. Coufal3, J. O. Wallace1, J. Simroth-Rodriguez1, and S. Pratt1, 1West Texas A&M University, Canyon, 2USDA ARS Conservation and Production Research Laboratory, Bushland, TX.

The relative importance of weaning management and vaccination history on finishing performance and carcass characteristics of beef calves.
M. J. Macek*1, K. C. Olson1, J. R. Jaeger2, T. B. Schmidt3, D. U. Thomson1, J. W. Iliff1, and L. A. Pacheco2, 1Kansas State University, Manhattan, 2Western Kansas Agricultural Research Center, Hays, 3Mississippi State University, Starkville.

Effects of degree of respiratory disease vaccination on health and growth performance of ranch-direct beef calves during weaning and receiving.
M. J. Macek*1, J. R. Jaeger2, T. B. Schmidt3, D. U. Thomson1, J. W. Bolte4, L. A. Pacheco2, N. A. Sproul5, L. R. Hibbard1, G. J. Ecklerle1, and K. C. Olson1, 1Kansas State University, Manhattan, 2Western Kansas Agricultural Research Center, Hays, 3Mississippi State University, Starkville.
Influencing steer performance through maternal nutrition.
A. F. Summers*1, K. H. Ramsay2, and R. N. Funston1, 1University of Nebraska West Central Research and Extension Center, North Platte, 2Rex Ranch, Ashby, NE.

Withdrawn by author

Incidence of quality defects in market beef and dairy cows and bulls sold through livestock auction markets in the western United States.

Effects of quality defects in market beef and dairy cows and bulls on selling price at auction in the western United States.

Performance of medium and small frame steers under pasture and pasture-feedlot finishing.
G. K. Mantz* and P. Nyren, North Dakota State University Central Grasslands Research Extension Center, Streeter.

Comparing the environmental impact of the US beef industry in 1977 to 2007.
J. L. Capper*, Department of Animal Sciences, Washington State University, Pullman.

Production, Management and the Environment
General
Chair: David Bravo, Pancosma, Switzerland

A mobile modified atmosphere killing unit for small flock depopulation.
A. B. Webster* and S. R. Collett, University of Georgia, Athens.

Overview of lighting in Kentucky broiler houses.
D. G. Overhults1, A. J. Pescatore1, I. Lopes1, G. Morello1, J. P. Jacob*1, J. Earnest Jr.1, M. Miller2, and R. S. Gates3, 1University of Kentucky, Lexington, 2Kentucky Poultry Federation, Winchester, 3University of Illinois, Champaign.

Evaluation of the effect of supplementing complex trace minerals on the development of claw lesions in stall-housed sows.
S. S. Anil*1, L. Ani2, J. Deen1, S. K. Baidoo2, M. E. Wilson3, and T. L. Ward1, 1Veterinary Population Medicine, University of Minnesota, St Paul, 2Southern Research and Outreach Center, University of Minnesota, Waseca, 3Zinpro Corporation, Eden Prairie, MN.

Correlation between production traits and sexual behavior in white-faced yearling rams.

Optimal livestock gross margin for dairy insurance contract design.
M. Valvekar, V. E. Cabrera*, and B. W. Gould, University of Wisconsin, Madison.

Do hyphenated techniques permit the speciation of metal glycinate complexes?

Determination of metal glycinate in premixes using capillary electrophoresis coupled with an inductively coupled plasma mass spectrometry detector (CE-ICP-MS).

Determining the optimal age for recording the retinal vascular pattern image of lambs.
M. A. Rojas-Olivares1, G. Caja*, S. Carné1, A. A. K. Salama1, N. Adell1, and P. Puig1, 1Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, 2Universitat de Girona, Girona, Spain.

Predicting probability of pregnancy using all activity signals prior to pregnancy diagnosis.
A. H. Sanders*, A. De Vries, and J. Block, University of Florida, Gainesville.
E. A. Coate*, M. C. Lucy, P. A. Eichen, and D. E. Spiers, University of Missouri-Columbia.

PSA Emerging Issues Symposium
Social Sustainability of Egg Production
Chair: Joy Mench, UC-Davis
Korbel Ballroom 1cd

The egg industry—Market context and sustainability issues.
J. A. Mench*, D. A. Sumner, and J. T. Rosen-Molina, University of California, Davis.

Economic and market issues on the sustainability of egg production in the United States: Analysis of alternative production systems.
D. A. Sumner*, H. R. Gow2, D. R. Hayes3, W. A. Matthews2, F. B. Norwood2, J. T. Rosen-Molina2, and W. N. Thurman3,
1University of California, Davis, 2Michigan State University, East Lansing, 3Iowa State University, Ames, 4Oklahoma State University, Stillwater; 5University of Missouri, Columbia.

The impact of different housing systems on egg safety and quality.
1USDA/ARS Egg Safety and Quality Research Unit, Athens, GA; 2Veterinary Laboratory Agencies, Weybridge, UK; 3Veterinary Epidemiology, Ghent University, Ghent, Belgium; 4USDA/ARS Animal Metabolism Research Unit, Fargo, ND.

Environmental impacts and sustainability of egg production systems.
H Xin*, R. S. Gates4, A. R. Green2, F. M. Mitloehner3, P. A. Moore, Jr. 4, and C. M. Watth6,
1Iowa State University, Ames, 2University of Illinois, Urbana-Champaign, 3University of California, Davis, 4USDA-ARS, Fayetteville, AR, 5University of London, UK.

Values and public acceptability dimensions of sustainable egg production.
P. B. Thompson*, M. Appleby1, L. Busch4, L. Kalof1, M. Miele3, B. Norwood4, and E. Pajor4,
1Michigan State University, East Lansing, 2Lancaster University, Lancaster, UK; 3Cardiff University, Cardiff, Wales, UK; 4Calgary University, Calgary, AL, Canada; 5World Society for the Protection of Animals, London, UK, 6Oklahoma State University, Stillwater.

Hen welfare in different housing systems.
1USDA-Agricultural Research Service, Livestock Behavior Research Unit, West Lafayette, IN; 2Michigan State University, East Lansing; 3Purdue University, West Lafayette, IN; 5Fed. Agri. Res. Centre, Celle, Germany; 6University of California, Davis; 7University of California, Riverside; 8Washington State University, Pullman; 9University of Bristol, UK; 10Hy-Line International, Des Moines, IA, 20University of Minnesota, St. Paul.

Valuing stakeholder input in setting research priorities for sustainable egg production.
J. C. Swanson*, Michigan State University, East Lansing.

Ruminant Nutrition
Beef 2
Chair: John Wagner, Colorado State University
Korbel Ballroom 2b

Characterization of physical factors affecting ruminal lipolytic activity in vitro.
H. D. Edwards*, M. D. Hardin1, R. K. Miller1, N. A. Krueger2, R. C. Anderson2, and D. J. Nisbet2,
1Texas A&M University, College Station, 2USDA/ARS, Southern Plains Agriculture Research Center, Food and Feed Safety Research Unit, College Station, TX.

Potential for water intake to predict dry matter intake in finishing beef steers.
M. H. Ramos*, M. S. Kerley1, M. Brankovic1, J. Gillespie1, and C. Huisma1,
1University of Missouri, Columbia, 2GrowSafe, Airdrie, CA.

Effect of calving season and finishing system on performance of beef steers in western Canada.
H. C. Block1, A. D. Iwasa2, L. C. Thompson1, H. A. Lardner3, and S. L. Scott3,
1Agriculture and Agri-Food Canada, Brandon Research Centre, Brandon, MB, Canada, 2Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, SK, Canada, 3Western Beef Development Centre, Lanigan, SK, Canada.
Effects of a bacterial inoculant on fermentation of barley or corn silage and on the growth performance of steers fed the ensiled crop.
W. Addah1,2, J. Baah2, P. Groenewegen3, E. K. Okine4, and T. A. McAllister5, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada, 3Alltech Canada, Inc., Calgary, AB, Canada.

Interactions between animal age and media fatty acids on subcutaneous and intramuscular adipose tissue explants from Angus steers.
D. T. Silvey1, G Go1, L. A. Gilmore2, S. B. Smith3, B. J. Johnson3, and M Doumit2, 1Intercollegiate Faculty of Nutrition, Texas A&M University, College Station, 2University of Idaho, Moscow, 3Department of Food and Animal Science, Texas Tech University, Lubbock.

Characterization of feed efficiency traits and relationships with serum metabolites, cortisol and IGF-I in growing Brangus heifers.

Effects of source and level of dietary roughage and ractopamine (Optaflexx) supplementation on growth performance, carcass traits, and beef quality.
D. Glanc1, K. Swanson, C. Campbell, and I. Mandell, University of Guelph, Guelph, Ontario, Canada.

Natural and conventional diet and management effects on steer feedlot performance, carcass traits and economics.
M. M. Thompson1, C. S. Schauer1, V. L. Anderson2, B. R. Ilse2, R. J. Maddock3, and K. K. Karges4, 1Hettinger Research Extension Center, North Dakota State University, Hettinger, 2Carrington Research Extension Center; North Dakota State University, Carrington, 3Department of Animal Sciences, North Dakota State University, Fargo, 4Poet Nutrition, Inc., Sioux Falls, SD.

Effect of calving season and wintering system on cow performance.
W. A. Griffin1, T. J. Klopfenstein1, D. C. Adams2, G. E. Erickson1, L. A. Stalker2, J. A. Musgrave2, and R. N. Funston2, 1University of Nebraska, Lincoln, 2University of Nebraska West Central Research and Extension Center, North Platte.

Eating pattern of Holstein bulls and steers fed high-concentrate rations using a computerized concentrate feeder.
M. Devant1, S. Marti1, and A. Bach2,1, 1Department of Ruminant Production, IRTA, Barcelona, Spain, 2ICREA, Barcelona, Spain.

Formation of trans-18:1 and CLA isomers in rumen and digesta of bulls fed different polyunsaturated fatty acid diets.
D. Dannenberger1, K. Nuernberg1, X. Shen2, G. Nuernberg2, and R. Zhao2, 1Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany, 2Nanjing Agricultural University, Nanjing, China.

Ruminant Nutrition
Beef: Forages and Grazing
Chair: Pablo Gregorini, Dairy-NZ, New Zealand
Korbel Ballroom 2c

Effects of self-fed byproducts on animal performance, carcass traits and fatty acid profiles of pasture reared finishing cattle.

Diets containing thirty percent wheat straw or orchard grass hay fed at either ad libitum or restricted intake prepartum have modest effects on postpartum performance.
N. B. Litherland1, M. L. Raeth-Knight, and J. G. Linn, University of Minnesota, St Paul.

In situ digestibility of grass hay after heifer diets were abruptly switched from 35 or 70% concentrate to 100% forage.
L. A. Voigt1, R. L. Endecott2, R. C. Waterman2, and J. A. Paterson1, 1Montana State University, Bozeman, 2USDA-ARS, Miles City, MT.

Evaluation of annual ryegrass (Lolium multiflorum) in two fall grazing systems on forage quality and beef heifer performance.
J. M. Kelzer1, R. S. Walker2, S. L. Bird3, and R. D. Mathison3, 1University of Minnesota, St Paul, 2Extension Regional Center, University of Minnesota, Andover, 3North Central Research and Outreach Center, University of Minnesota, Grand Rapids.
3:00 PM 1044  Effects of pen cleaning frequency and feeding high distillers grains and wheat straw on nutrient mass balance and performance of feedlot steers.  

3:15 PM 1045  Restricting intake of replacement heifers by limiting hay access time.  
W. J. Sexten* and D. K. Davis, University of Missouri, Columbia.

3:30 PM 1046  Effect of stocking rate on nutrient quality of cornstalk residue.  

3:45 PM 1047  Ruminal pressure and pH dynamics of bloated steers grazing winter wheat forage.  
W. E. Pinchak*, D. W. Pitta1, D. P. Malinowski1, J. D. Fulford1, T. A. Wickersham1, and J. Coverdale2, 1Texas AgriLife Research, Vernon, 2Texas A&M University, College Station.

4:00 PM 1048  Rumen bacterial diversity dynamics associated with changing from bermudagrass hay to grazed winter wheat diets.  
D. W. Pitta*, W. E. Pinchak1, S. E. Dowd1, J. Osterstock1, V. Gontcharova2, E. Youn4, K. Dorton5, I. Yoon5, B. R. Min1, J. D. Fulford1, T. A. Wickersham1, and D. P. Malinowski1, 1Texas AgriLife Research, Vernon, 2Research and Testing Laboratory, Lubbock, TX, 3Texas AgriLife Research, Amarillo, 4Medical Biofilm Research Institute, Lubbock, TX, 5Texas Tech University, Lubbock, 6Diamond V Mills, Cedar Rapids, IA, 7Texas A&M University, College Station.

4:15 PM 1049  Fermentable fiber levels in diets for natural beef cattle markets.  

4:30 PM 1050  Chemical composition and in situ digestion kinetics of fodder tree leaves.  
J. I. Sultan*, U. B. Cheema1, A. Javaid1, and M. Yaqoob2, 1Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan, 2Department of Livestock Management, University of Agriculture, Faisalabad, Pakistan.

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Ruminant Nutrition
Dairy 2
Chair: Allen Young, Utah State University
Sponsor: West Central
Korbel Ballroom 1ef

2:00 PM 1051  Productivity of lactating dairy cows as impacted by feeding lysine in a ruminally protected form.  
P. H. Robinson*, S. Juchem1, and I. Shinzato2, 1University of California, Davis, 2Ajinomoto Co. Inc., Tokyo, Japan.

2:15 PM 1052  The application of reliable wireless sensor provides better understanding of the rumen environment.  

2:30 PM 1053  Top-dressing soybean meal in fresh cow, an end to the risks of dry matter intake decreases: Dry matter intake, milk production and nitrogen metabolism.  
M. Ghelich Khan*, H. Amanlou, and E. Mahjoubi, Zanjan University, Zanjan, Iran.

2:45 PM 1054  Leucine had the highest regulatory effects on protein synthesis in bovine mammary epithelial cells when added to media deprived of other essential amino acids.  
N. A. Knoebel*, J. A. D. R. N. Appuhamy1, J. Escobar1, and M. D. Hanigan1, 1Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 2Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg.

3:00 PM 1055  Hypophagic effects of propionate relative to acetate decrease as days in milk increase and plasma NEFA concentration decreases.  
S. E. Stebulis* and M. S. Allen, Michigan State University, East Lansing.

A. B. Strathe*, J. Dijkstra1, J. France1, and E. Kebrab2, 1University of California, Davis, 2Wageningen University, Wageningen, the Netherlands, 3University of Guelph, Guelph, Ontario, Canada.

3:30 PM 1057  Carbon dioxide, a greenhouse gas, is sequestered by dairy cattle.  
D. P. Casper* and D. R. Mertens2, 1Agri-King, Inc., Fulton, IL, 2USDA-ARS Dairy Forage Research Center, Madison, WI.

3:45 PM 1058  The variation in milk production by lactating dairy cows in a whole herd compared to groups within that herd.  
Reduced protein responses to sugar feeding may be due to microbial glycogen production.
M. B. Hall*, US Dairy Forage Research Center, USDA-ARS, Madison, WI.

Liver transcriptomics in Holstein cows fed lipid supplements during the peripartal period.
M. J. Khan*,1, S. M. Ballou2, E. J. DePeters3, N. L. Rodriguez-Zas3, R. E. Everts3, H. A. Lewin5, J. K. Drackley1, and J. J. Loor1,1University of Illinois, Urbana, 2Texas Tech University, Lubbock, 3University of California, Davis.

Cattle differ in ability to adapt to small intestinal digestion of starch.
H. A. Bissell1 and M. B. Hall*, 1University of Wisconsin, Madison, 2US Dairy Forage Research Center, USDA-ARS, Madison, WI.

Physiological effects of season and parity on production and nutritional quality of milk in camel (Camelus dromedarius) under pastoral environment of Pakistan.
S. Ahmad*, M. Yaqoob1, M. Qamar Biilal1, G. Muhammad1,2, M. Younas1, and J. I. Sultan1,3,1Department of livestock management, University of Agriculture, Faisalabad, Pakistan, 2Department of Clinical and Medicine, University of Agriculture, Faisalabad, Pakistan, 3Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan.

Swine Species Symposium
Optimizing Swine Production for Lactating Sows and Young Pigs
Chair: Vern Pearson, Land O’Lakes/Purina, Shoreview, MN
Korbel Ballroom 3a

Nutritional management of sows during the perinatal period.
S. W. Kim*, A. Saraiva, and Y. Zhao, North Carolina State University, Raleigh.

Proper nutrition to optimize performance for lactating sows and young pigs.
V. J. Pearson*, Land O’Lakes Purina Feed LLC, Shoreview, MN.

Gene x environment interactions affecting litter phenotype in commercial sows.
G. R. Foxcroft*, University of Alberta, Edmonton, Alberta, Canada.

Decision-making using swine records.
J. Deen* and S. S. Anil, University of Minnesota, St Paul.

Teaching/Undergraduate and Graduate Education
Graduate and Undergraduate Teaching 2
Chair: Michel Wattiaux, University of Wisconsin
503/504

Engaging agriculture students in the publication process through popular press magazines.
E. L. Walker*, Missouri State University, Springfield.

Teaching and experiencing entrepreneurialism in animal sciences.
M. E. Benson*, A. B. Culham1, and G. M. Hill3, 1Washington State University, Pullman, 2Michigan State University, East Lansing.

The role of animals in societies of the world: When culture and roles clash.
M. Russell2, H. Frigola1, K. Kanne2, and S. Damron3, 1Purdue University, West Lafayette, IN, 2Northwestern University, Evanston, IL, 3Oregon State University, Stillwater.

Enhanced learning of lactation physiology by undergraduates conducting a class-based research project.
R. L. Wrenn*, S. J. P. Lee, and R. C. Hovey, University of California, Davis.

Frameworks for learning: A case study of approaches for building capacity for distance education.

Trends in distance education and technologies in higher education: A call for adaptive leadership.
D. R. Mulvaney1,2, P. A. Curtis1, and M. O. Kloepper4, 1Coll. of Agr., Auburn Univ., Auburn, AL, 2Dept. Anim. Sci., Auburn, AL, 3Dept. Poult. Sci., Auburn, AL, 4IT Specialist, Auburn, AL.
Thursday, July 15

SYMPOSIA AND ORAL SESSIONS

Animal Health
Probiotics, Performance and Antioxidants
Chair: Jeffery Escobar, Virginia Polytechnic Institute and State University
Sponsors: Elanco Animal Health, Pfizer Animal Health

057

8:30 AM 1073 Thiamine status of feedlot cattle fed high concentrate diet.
T. Karapinar*, M. Dabak, and O. Kizil, University of Firat, Faculty of Veterinary Medicine, Elazig, Turkey.

8:45 AM 1074 The effect of five herbal extracts on performance, carcass characteristics and immune system in broilers.
M. Alempour1, S. Rahimi*, M. A. Karimi Torshizi1, and A. Rahimi3, 1Tarbiat Modares University, Tehran, Tehran, Iran, 2Islamic Azad University, Tehran, Tehran, Iran.

9:00 AM 1075 Comparison the effect of five herbal extracts and virginiamycin on serum lipids and immune system in broilers.
M. Alempour1, S. Rahimi*, M. A. Karimi Torshizi1, and A. Rahimi3, 1Tarbiat Modares University, Tehran, Tehran, Iran, 2Islamic Azad University, Tehran, Tehran, Iran.

A. Ganner*, S. Masching2, M. Pelz2, and G. Schatzmayr1, 1Biomin Research Center, Tulln, Austria, 2Biomin Holding GmbH, Herzogenburg, Austria.

9:30 AM 1077 Effect of several feed additives on growth performance and microbial load in Escherichia coli challenged broilers.
A. R. Valipouri1, S. Rahimi*, T. Zahraei Salehi2, and A. Rahimi3, 1Tarbiat Modares University, Tehran, Tehran, Iran, 2Tarbiat Modares University, Tehran, Tehran, Iran, 3University of Tehran, Tehran, Tehran, Iran, 4Islamic Azad University, Tehran, Tehran, Iran.

9:45 AM 1078 Improvement of microbial flora of broilers digestive system by medicinal plants supplementation.
A. Niknam1, S. Rahimi*, J. Azimi1, K. Seifi1, M. Hoseinzadeh2, and M. Moradi Nejad3, 1Tarbiat Modares University, Tehran, Tehran, Iran, 2Tarbiat Modares University, Tehran, Tehran, Iran, 3Tarbiat Modares University, Tehran, Tehran, Iran.

10:00 AM 1079 Peripartal intravaginal probiotics lowered uterine infections and improved reproductive performance of Holstein dairy cows.
B. N. Ametaj*, Q. Zebeli1, S. Iqbal1, M. Gänzle1, Y. Wang1, D. J. Ambrose2, and S. M. Dunn1, 1University of Alberta, Edmonton, Alberta, Canada, 2Alberta Agriculture and Rural Development, Edmonton, Alberta, Canada.

10:15 AM 1080 Changes in ruminal-rectal temperature relationship associated with consumption of endophyte infected tall fescue.

10:30 AM 1081 Effect of dietary antioxidants and prepartum cooling on oxidative status and neutrophil function of periparturient Holstein cows during summer in Florida.

10:45 AM 1082 Isolation, characterization, and antioxidative activity of an exopolysaccharide produced by Enterobacter cloacae Z0206.
M. L. Jin*, Y. M. Wang1, Z. Q. Lu1, M. Huang1, C. L. Xu1, and Y. Z. Wang1, 1Zhejiang University, Hangzhou, China, 2Northwestern Polytechnical University, Xi’an, China.

11:00 AM 1083 Chinese medical plants and extracts moderating effects on antioxidant status of small intestinal mucous and IEC-6 cells under heat stress.
K. J. Guo1, X. Z. Song3, G. L. Cheng1, W. L. Luan1, F. H. Liu*1, and J. Q. Xu4, 1Department of Animal Science and Technology, Beijing University of Agriculture, Beijing, China, 2College of Animal Science and Technology, Jiangxi Agricultural University, Nanchang, China, 3Beijing Key Laboratory of TCVM, CAU-BUA TCVM Teaching & Research Team, Beijing, China, 4TCVM Laboratory, CAU-BUA TCVM Teaching & Research Team, College of Veterinary Medicine, China Agricultural University, Beijing, China.

11:15 AM 1084 Immune responses and gene expression in red swamp crayfish (Procambarus clarkii), induced by selenium-enriched exopolysaccharide (Se-ECZ-EPS) from Enterobacter cloacae Z0206.
Food Safety
General Aspects
Chair: Todd R. Callaway, USDA/Agricultural Research Service
505/506

8:30 AM 1085 C-di-GMP signaling pathways are critical for acid resistance of E. coli O157:H7.
M. J. Zhu1, B. L. Wang1, W. Yue1, V. K. Koseoglu1, H. Wang1, X. Fang1, W. J. Means1, R. J. McCormick1, and M. Gomelsky2, 1Department of Animal Science, University of Wyoming, Laramie, 2Department of Molecular Biology, University of Wyoming, Laramie.

8:45 AM 1086 Monensin level, supplemental urea, and administration of ractopamine on fecal shedding of Escherichia coli O157:H7 in feedlot cattle.
Z. D. Paddock*, C. E. Walker, J. S. Drouillard, D. G. Renter, and T. G. Nagaraja, Kansas State University, Manhattan.

9:00 AM 1087 Alternatives to antibiotic treatment for necrotic enteritis.
C. L. Hofacre*, M. Lee1, and G. Mathis2, 1The University of Georgia, Athens, 2Southern Poultry Research, Athens, GA.

9:15 AM 1088 Effect of feeding rumen undegradable intake protein on gut Campylobacter concentrations in fed cattle.
R. C. Anderson*, T. A. Wickersham1, W. E. Pinchak2, N. A. Krueger3, T. R. Callaway1, T. S. Edrington4, R. B. Harvey1, and D. J. Nisbet1, 1USDA/ARS, Southern Plains Agricultural Research Center, Food and Feed Safety Research Unit, College Station, TX, 2Texas A&M University, College Station, 3Texas AgriLife Research, Vernon.

9:30 AM 1089 Development of a broader spectrum phage cocktail to decrease Salmonella shedding in livestock.
J. Zhang1, B. L. Kraft2, Y. Pan2, S. K. Wall1, A. C. Saez1, and P. D. Ebner1, 1Purdue University, West Lafayette, IN, 2Zhejiang University, Hangzhou, China.

9:45 AM 1090 Use of a biophotonic E. coli XEN-14 to determine time of contamination in the life cycle of the house fly, Musca domestica L. (Diptera: Muscidae).
G. Schuster*, K. E. Moulton1, P. R. Broadway1, S. Willard2, J. Behrends3, and T. B. Schmidt1, 1Department of Animal, Mississippi State University and Dairy Sciences, Mississippi State, 2Department of Biochemistry, Mississippi State University, Mississippi State, 3Agronomy, Texas A&M University-Kingsville, Kingsville, 4Food Science, Nutrition, and Health Promotion, Mississippi State University, Mississippi State.

10:00 AM 1091 Effect of crust freezing on the survival of Escherichia coli and Salmonella Typhimurium in raw poultry products.
B. D. Chaves*, Y. Han, and P. L. Dawson, Clemson University, Clemson, SC.

10:15 AM 1092 Heating wash water for shell eggs... Is it necessary?
S. L. Christian*, P. A. Curtis1, L. K. Kerth1, M. T. Musgrove2, and K. E. Anderson3, 1Auburn University, Auburn, AL, 2USDA-ARS, Athens, GA, 3North Carolina State University, Raleigh.

10:30 AM 1093 Multiplication of Salmonella Enteritidis in egg yolks after inoculation outside, on, and inside vitelline membranes and storage at different temperatures.
R. K. Gast*, R. Guraya, J. Guard, and P. S. Holt, Egg Safety and Quality Research Unit, USDA-ARS, Athens, GA.

10:45 AM 91 Genome-wide analysis of cecal gene expression in Salmonella-challenged and probiotic-treated neonatal chicks.
S. E. Higgins*, A. D. Wolfenden1, G. I. Tellez2, B. M. Hargis3, and T. E. Porter4, 1University of Maryland, College Park, 2University of Arkansas, Fayetteville.

11:00 AM 1094 Microbiological difference of eggs from traditional cage and free range production.
D. R. Jones*, K. E. Anderson2, and M. T. Musgrove1, 1Egg Safety and Quality Research Unit, USDA-ARS, Athens, GA, 2Department of Poultry Science, North Carolina State University, Raleigh.

Horse Species Symposium
Pathogenic and Reproductive Dysfunction in Horses
Chair: Peter Ryan, Mississippi State University
Sponsor: EAAP
401/402

8:30 AM 1095 Introduction
Peter Ryan.

8:40 AM 1095 Monitoring pathogen progression during uterine infection in the mare using biophotonic imaging technology and lux-modified bacteria.
9:10 AM Discussion

9:20 AM Contagious equine metritis: An insidious threat to the US horse breeding industry.
P. J. Timoney*, Maxwell H. Gluck Equine Research Center, Lexington, KY.

9:50 AM Discussion

10:00 AM Break

10:10 AM Use of fluorescent in situ hybridization (FISH) to identify endometritis pathogens in the mare.
M. R. Petersen*, H. Lehn-Jensen, and A. M. Bojesen, Faculty of Life Sciences, Copenhagen, Denmark.

10:40 AM Discussion

10:50 AM Chronic equine endometritis: What is missed with traditional diagnostics.
M. M. LeBlanc*, Rood and Riddle Equine Hospital, Lexington, KY.

11:20 AM Discussion

International Animal Agriculture 1
Chair: Alex Bach, IRTA

8:30 AM Challenges for the Mexican animal industry.

9:00 AM Effect of varying dietary energy levels during last trimester of pregnancy on the performance of Sahiwal heifers.
M. Abdullah*, M. Fiaz, M. E. Babar, J. A. Bhatti, T. N. Pasha, and M. A. Jabbar, University of Veterinary and Animal Sciences, Lahore, Pakistan.

9:15 AM Development of the organic beef foodchain in the Mexican tropics—Eight years of experience.
P. Fajersson*1 and P. Parada2, 1Colegio de Postgraduados, Campus Veracruz, Veracruz, Veracruz, Mexico, 2Carnes La Rumorosa, Poza Rica, Veracruz, Mexico.

9:30 AM Wool comfort factor variation in Australian crossbred sheep.
A. E. O. Malau-Aduli* and D. J. Deng Akuoch, School of Agricultural Science/TIAR, University of Tasmania, Hobart, Tasmania 7001, Australia.

9:45 AM Supplementation of Starbio probiotic and yeast on milk production and nutrient digestibility of lactating Holstein cows fed a ration containing cassava meal.
E. Sulistyowati*, I. Badarina, and E. Soetrisno, Animal Science Dept., College of Agriculture, University of Bengkulu (UNIB), Bengkulu, Indonesia.

Nonruminant Nutrition
Enzymes 2
Chair: Ryan Dilger, University of Illinois

8:30 AM Effects of protease supplementation on growth performance of broilers fed corn-soy-DDGS based diets.

8:45 AM Effects of a novel phytase on phosphorus digestibility in corn-soybean meal diets fed to weanling and growing pigs.
F. N. Almeida* and H. H. Stein, University of Illinois, Urbana.
Enzyme complex containing NSP-enzymes and phytase improves the growth performance and bone mineralisation of piglets fed wheat and barley-based diet.

Effect of dietary calcium concentration and microbial phytase addition on P utilisation and growth performance in weaned pigs.
A. Narcy, M. P. Letourneau Montminy**, E. Bouzouagh, N. Meme, M. Magnin, and J. Y. Dourmad, INRA UR83, Nouzilly, France, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3BNA Nutrition Animale, Chateau-Gontier, France, 4INRA UMR1079 Agrocampus, St-Gilles, France.

The role of sodium in the physiological response of growing broilers to phytate and phytase.
A. J. Cowieson*, M. R. Bedford, P. H. Selle, and V. Ravindran, AB Vista, Marlborough, Wiltshire, UK, 2Massey University, Palmerston North, New Zealand, 3University of Sydney, Sydney, New South Wales, Australia.

Effect of a thermo-tolerant xylanase on performance in broilers fed diets with different energy and amino acid densities.

Additions of glucanase, xylanase, and phytase to low-energy low-lysine diets for broilers including canola meal and DDGS as alternative ingredients.
S. Gómez and M. L. Angeles, INIFAP, Ajuchitlán, Colón, Qro, México, 2FESC-UNAM, Ajuchitlán, Colón, Qro, México.

Allzyme SSF increased AME of the corn-soy diet and improved performance of boilers.

Effects of multiple dietary manipulations on the mass balance of N and P during the swine finishing phase.
T. Walraven*, S. Carter, J. Jarret, M. Bible, and H. Kim, Oklahoma State University, Stillwater.

Prediciting variations in total and phytic phosphor in raw materials of plant origin.
C. Gady, S. Virden, and P. A. Geraert, Adisseo SAS, Antony, France, 2Adisseo USA Inc, Alpharetta, GA.

H. Y. Hsiao*, D. M. Anderson, L. Liu, and M. E. Jackson, ChemGen Corp., 211 Perry Parkway, Gaithersburg, MD.

Nonruminant Nutrition Symposium
Nutrient and Non-Nutrient Sensing and Signaling in the Gastrointestinal Tract
Chair: Soraya Shirazi-Beechey, University of Liverpool
Sponsors: EAAP, Pancosma

Introduction
8:30 AM

Bitter taste receptors and gastrointestinal chemosensing.
C. Sternini*, H. E. Raybould, L. M. Rinaman, and E. Rozegurt, UCLA, School of Medicine, Los Angeles, 2UC Davis, School of Veterinary Medicine, Davis, 3University of Pittsburgh, Pittsburgh, PA.

T1R-mediated taste transduction mechanisms.
S. C. Kinnamon*, University of Colorado Denver, Aurora.

Gut sensors for spices and odorants.
T. Braun, P. Voland, L. Kunz, C. Prinz, and M. Gratzi, Institute of Anatomy, Ludwig Maximilian University Munich, Munich, Germany, 2Med. Dept., Technical University Munich, Munich, Germany.

Break
### Amino acid sensing in the gut epithelium.
D. G. Burrin* and B. Stoll, USDA Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX.

### Nutrient sensors expressed in gut enteroendocrine cells regulate nutrient-responsive secretion of satiety hormones.
S. Shirazi-Beechey*, K. Daly, A. Moran, and J. Dyet, University of Liverpool, Liverpool, UK.

### Effect of artificial sweeteners on the expression of swine intestinal Na/glucose co-transporter 1, SGLT1.
A. Moran*, D. Batchelor1, I.onescu1, D. Bravo1, and S. Shirazi-Beechey1, 1University of Liverpool, Liverpool, UK, 2Pancosma, Geneva, Switzerland.

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#### Physiology and Endocrinology

**Feed Intake, Metabolism and Maternal Nutrition**

**Chair:** Brian Crooker, University of Minnesota

<table>
<thead>
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<th>Time</th>
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| 8:30 AM | **Expression of neuropeptide Y and its receptors as affected by nutrition and leptin infusion in Zebu heifers.**
| 8:45 AM | **Blocking μ-ohipid receptors alters short-term feed intake and oro-sensorial preferences of weaned calves.**
C. Montoro*, I. Ipharraguerre1, and A. Bach1, 1Ruminant Production, IRTA, Càldes de Montbui, Barcelona, Spain, 2Lucia S. A., Barcelona, Spain, 3ICREA, Barcelona, Spain. |
| 9:00 AM | **Evidence that nesfatin-1 is a satiety factor in the pig and that the hypothalamus controls its expression in adipose tissue.**
C. A. Lents*, C. R. Barb1, G. J. Hausman2, L. Lee-Rutherford1, C. J. Rogers1, N. L. Heidorn1, R. S. Cisse1, and M. J. Azain1, 1University of Georgia, Athens, 2USDA-ARS Richard B. Russell Agriculture Research Center, Athens, GA. |
| 9:15 AM | **Endocannabinoid and PPARα signaling gene network expression in liver of peripartal cows fed two levels of dietary energy prepartum.**
M. J. Khan*, D. E. Graugnard, and J. J. Loor, University of Illinois, Urbana. |
| 9:30 AM | **Endoplasmic reticulum (ER) stress gene network expression in liver of peripartal cows fed two levels of dietary energy prepartum.**
M. J. Khan*, D. E. Graugnard, and J. J. Loor, University of Illinois, Urbana. |
| 9:45 AM | **Effects of a hyperinsulemic euglycemic clamp administered during heat stress or pair feeding on plasma ghrelin concentrations of lactating dairy cattle.**
| 10:00 AM | **Effects of heat stress on insulin action in lactating Holstein cows.**
| 10:15 AM | **The effect of insulin glargine on the metabolism of lactating Holstein cows.**
| 10:30 AM | **The effects of maternal obesity and overnutrition on ovine fetal adipose tissue lipid composition.**
N. M. Long*, D. C. Rule1, P. W. Nathanieliz1, and S. P. Ford1, 1Center for the Study of Fetal Programming, University of Wyoming, Laramie, 2Department of Animal Science, University of Wyoming, Laramie, 3Department of Obstetrics and Gynecology, University of Texas Health Sciences Center, San Antonio. |
| 10:45 AM | **Influence of metabolizable protein supplementation during late gestation on vasoreactivity of maternal and fetal placental arteries in sheep.**
L. A. Lekatz*, M. L. Van Emon1, P. K. Shukla1, S. T. O’Rourke1, C. Schauffer1, K. M. Carlin1, and K. A. Vonnahme1, 1Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo, 2Hettinger Research Extension Center, North Dakota State University, Hettinger, 3Department of Pharmaceutical Sciences, North Dakota State University, Fargo. |
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<td>11:00 AM</td>
<td>1131</td>
<td>Maternal nutrient restriction (NR) upregulates phosphoenolpyruvate carboxykinase (PEPCK) expression in the livers of aged female offspring.</td>
<td>L. Zhang*, Y. Ma, N. Tuersunjiang, L. A. George, S. P. Ford, and P. W. Nathanielsz, *Center for the Study of Fetal Programming, Univ. of Wyoming, Laramie; †Center for Pregnancy and Newborn Research, Univ. of Texas Health Sciences Center, San Antonio.</td>
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<tr>
<td>11:15 AM</td>
<td>1132</td>
<td>Maternal nutrient restriction (NR) from early to mid-gestation increases pancreatic β-cell number at mid-gestation but pancreatic weight and β-cell numbers are reduced by late-gestation.</td>
<td>L. Zhang*, L. A. George, S. P. Ford, and P. W. Nathanielsz, *Center for the Study of Fetal Programming, Univ. of Wyoming, Laramie; †Center for Pregnancy and Newborn Research, Univ. of Texas Health Sciences Center, San Antonio.</td>
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**Ruminant Nutrition**

**By-Products and Supplements**

Chair: Stacey Gunter, USDA/ARS-SPRRS

Sponsor: West Central

**403/404**

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<td>8:30 AM</td>
<td>1133</td>
<td>Effects of supplementing transition cow diets with different levels of dietary glycerol on performance, efficiency, and blood metabolites.</td>
<td>J. Boyd*, J. Bernard†, and J. West†, ‡The University of Georgia, Tifton; †US Dairy Forage Research Center, Madison, WI.</td>
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<td>8:45 AM</td>
<td>1134</td>
<td>The influence of Bacillus pumilus 8G-134 on milk production of dairy cows in early lactation.</td>
<td>J. D. Ferguson*, Z. Wu, D. W. Remsburg‡, and K. Mertz†, ‡University of Pennsylvania, School of Veterinary Medicine, Kennett Square; †Danisco Animal Nutrition, Waukesha, WI.</td>
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<td>9:00 AM</td>
<td>1135</td>
<td>Utilization of wet brewers grains as a replacement for corn silage in lactating dairy cow diets.</td>
<td>C. L. Mahnken*, B. J. Bradford, T. G. Rozell, and M. J. Brouk, Kansas State University, Manhattan.</td>
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<td>9:15 AM</td>
<td>1136</td>
<td>Methane suppressing effect of flaxseed in diets containing hay or silage.</td>
<td>Y. -H. Chung*, M. L. He, S. M. McGinn, T. A. McAllister, and K. A. Beauchemin, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.</td>
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<td>9:45 AM</td>
<td>1138</td>
<td>Effect of supplemental corn dry distiller grains plus solubles on digestibility of steers grazing native range during summer growing season.</td>
<td>M. F. Martínez-Pérez, D. Calderón-Mendoza, N. J. Dupass, A. Islas, J. Armendariz, A. M. Encinias, F. Loya-Olguín, and S. A. Soto-Navarro*, ‡New Mexico State University, Las Cruces; †Universidad Autónoma de Baja California, Mexicali, BC, Mexico.</td>
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<td>10:00 AM</td>
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<td>Effect of replacing grain and silage with wheat distiller grain on intake, digestibility, and urine purine derivatives in finishing beef cattle.</td>
<td>Y. L. Li*, W. Z. Yang, T. A. McAllister†, and K. A. Beauchemin‡, †Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada; ‡Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.</td>
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<td>10:15 AM</td>
<td>1140</td>
<td>Feeding wheat distillers grains compared with corn distillers grains in diets for lactating dairy cows: Effect on milk production and rumen fermentation.</td>
<td>M. M. Abdelgader‡ and M. Oba, University of Alberta, Edmonton, AB, Canada.</td>
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<td>10:30 AM</td>
<td>1141</td>
<td>Megasphaera elsdenii effects on adaptation to concentrate diets.</td>
<td>L. K. Thompson*, P. H. Henning‡, and J. S. Drouillard†, †Kansas State University, Manhattan; ‡MS-Biotech, Centurion, South Africa.</td>
</tr>
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</table>
The effect of rumen-protected methionine and choline on productive performance of Holstein dairy cows.
M. Ardalan*, M. Dehghan-Banadaky, and K. Rezayazdi, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran.

Ruminant Nutrition Symposium
Acidosis: New Insights Into the Persistent Problem
Chair: Masahito Oba, University of Alberta
Sponsor: West Central
501/502

8:30 AM 1143
Introduction.
Masahito Oba, University of Alberta.

8:35 AM 1144
Role of fermentation acid absorption in the regulation of ruminal pH.
J. R. Aschenbach*, G. B. Penner2, F. Stumpff3, and G. Gäbel4, 1University of Veterinary Medicine Vienna, Vienna, Austria, 2University of Saskatchewan, Saskatoon, Canada, 3Free University of Berlin, Berlin, Germany, 4University of Leipzig, Leipzig, Germany.

9:15 AM 1145
Molecular adaptation of ruminal epithelia to highly fermentable diets.
G. B. Penner*, M. A. Steele2, and B. W. McBride2, 1University of Saskatchewan, Saskatoon, Canada, 2University of Guelph, Guelph, Ontario, Canada.

9:55 AM 1146
Animal productivity and health responses to hind-gut acidosis.
T. F. Gressley*, M. B. Hall2, and L. E. Armentano3, 1University of Delaware, Newark, 2US Dairy Forage Research Center, Madison, WI, 3University of Wisconsin, Madison.

10:35 AM 1147
Bovine endotoxicosis: Does acidosis cause inflammatory responses?
P. H. Andersen*, Copenhagen University, Copenhagen, Denmark.
## Author Index

Numbers following names refer to abstract numbers: a number alone indicates an oral presentation, an M prior to the number indicates a Monday poster, a T indicates a Tuesday poster, and a W indicates a Wednesday poster.

The author index is created directly and automatically from the submitted abstracts. If an author’s name is typed differently on multiple abstracts, the entries in the author index will reflect these discrepancies. Efforts have been made to make this index consistent; however, error from author entry contributes to inaccuracies.

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<td>(3:00-5:00 pm) Late-Breaking Abstracts</td>
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<td>Speaker Ready Open 7:00 am - 5:00 pm</td>
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<td>(5:00-6:00 pm) ADSA Dairy Foods Division Council Meeting</td>
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<td>12:30 pm - 2:00 pm</td>
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<td>Korbel Ballroom 1e</td>
<td>Horse Species 1</td>
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<td>Companion Animals: Microbes and Health</td>
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<tr>
<td>Korbel Ballroom 1f</td>
<td>Production, Management and the Environment: Poultry 1</td>
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<td>(5:30-7:00 pm) ASAS Photo Session (1F)</td>
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<td>Korbel Ballroom 2a</td>
<td>Ruminant Nutrition-Dairy: Protein and Fat</td>
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<tr>
<td>Korbel Ballroom 2b</td>
<td>Ruminant Nutrition-Beef: By-Product Feeds</td>
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<td>Korbel Ballroom 2c</td>
<td>Nonruminant Nutrition: Amino Acids 1</td>
<td>ASAS Graduate Student Open Forum</td>
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<td>(5:30-7:00 pm) ASAS Awards Dinner</td>
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<td>Korbel Ballroom 3a</td>
<td>Alpharma Beef Cattle Nutrition Symposium: “Parameterizing” Health and Performance Expectations of Feedlot Cattle</td>
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<td>ADSA Southern Section Symposium: Dairy Cattle Grazing in the Southern USA</td>
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<td>Korbel Ballroom 3b</td>
<td>Contemporary and Emerging Issues and International Animal Agriculture Joint Symposium: Global Livestock Production to 2050: Challenges and opportunities</td>
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<td>Ruminant Nutrition-Dairy: Calves</td>
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<td>Nonruminant Nutrition: Health 1</td>
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<td>Korbel Ballroom 4abc</td>
<td>Graduate Student Symposium: Transitions: Preparing for Your Future</td>
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<td>(7:00-8:30 pm) ASAS Awards Program</td>
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<td><strong>Monday, July 12</strong></td>
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<td><strong>Korbel Ballroom 4def</strong></td>
<td>Breeding and Genetics: Feed Intake and Utilization</td>
<td>Breeding and Genetics: Bridging the Gap Between Physiology and Genomics</td>
<td>Breeding and Genetics: Bridging the Gap Between Physiology and Genomics</td>
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<td><strong>301/302</strong></td>
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<td>Nonruminant Nutrition: Dietary Fat</td>
<td>Nonruminant Nutrition: Enzymes 1</td>
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<td><strong>303</strong></td>
<td></td>
<td>(9:30-10:15 am) ADSA Southern Section: Graduate Student Paper Competition /</td>
<td>Meat Science and Muscle Biology: Fresh Meat Quality and Muscle Biology</td>
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<td>(11:00 am-12:00 pm) Teaching/Undergraduate and Graduate Education 1</td>
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<td><strong>304</strong></td>
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<td>Forages and Pastures: Grazing and Forage Management</td>
<td>Lactation Biology: Novel Mechanisms Regulating Milk Secretion and Mammary Involution</td>
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<td><strong>401/402</strong></td>
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<td>Food Safety: Probiotics</td>
<td>Animal Health: Immunity, Probiotics, and Health Status</td>
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<td><strong>403/404</strong></td>
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<td>Animal Behavior and Well-Being: Animal Welfare Assurance: Science and Application</td>
<td>Small Ruminant: Sheep and Goat Production 1</td>
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<td>Presentation by Dr. Roger Beachy, NIFA</td>
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<td><strong>405</strong></td>
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<td>(9:30 am-12:00 pm) ADSA-ASAS Northeast Section: Graduate Student Paper Competition</td>
<td>Animal Behavior and Well-Being: Poultry 1: Ducks, Layers, and Turkeys</td>
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<td>Animal Health-Johnes Disease (JDIP): Basic Biology/Immunology/Vaccine Development</td>
<td>Animal Health-Johne’s Disease (JDIP): Epidemiology and Transmission</td>
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<td><strong>505/506</strong></td>
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<td>Physiology and Endocrinology: Dairy Cow Synchronization and Fertility</td>
<td>Physiology and Endocrinology: Poultry Physiology</td>
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<td>Extension Education 1</td>
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<td>701</td>
<td>(10:30 am-12:30 pm) ARPAS Exam</td>
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<td>(2:00-4:00 pm) ARPAS Exam</td>
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<td>702</td>
<td>(9:30-10:30 am) ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports</td>
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<td>(5:00-7:00 pm) Companion Animal Reception</td>
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<td>704</td>
<td>(9:30-10:30 am) ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports</td>
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<td>705</td>
<td>(8:30-9:30 am) SAD Business Meeting / (9:30-10:45 am) Activities Symposium / (11:00 am-12:30 pm) ADSA-SAD Undergraduate Competition: Dairy Foods</td>
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<td>(2:00-3:45 pm) ADSA-SAD Undergraduate Competition: Dairy Production</td>
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<td>706</td>
<td>(9:30-10:30 am) ADSA-SAD Interviews for Outstanding Student and Advisor Awards</td>
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<td>707</td>
<td>(2:00-4:30 pm) ADSA-SAD Undergraduate Competition: Original Research</td>
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<td>711</td>
<td>(7:30-11:00 am) WSASAS Executive Board Pre-Conference Meeting</td>
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<td>(2:00-3:30 pm) Discover Steering Committee</td>
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* Hospitality Room will be closed from 11:30 am to 3:00 pm today to accommodate a scheduled lunch.

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<th>Room</th>
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<tr>
<td>Exhibit Hall F</td>
<td>Poster Presentations</td>
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<td>Korbel Ballroom 1ab</td>
<td>Ruminant Nutrition-Dairy: Forages and Heifers</td>
<td>Ruminant Nutrition-Dairy: Rumen Metabolism</td>
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<td>Korbel Ballroom 1cd</td>
<td>Forages and Pastures: Harvested Forages and Forage Quality</td>
<td>Nonruminant Nutrition: DDGS</td>
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<tr>
<td>Korbel Ballroom 1ef</td>
<td>Meat Science and Muscle Biology: How does pre- and postnatal muscle development affect meat composition, quality and value?</td>
<td>Nonruminant Nutrition: Models for disease x nutrition evaluation and the impact of nutrition on health, disease, and/or recovery</td>
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<td>Korbel Ballroom 2a</td>
<td>Ruminant Nutrition-Beef: Vitamins and Minerals</td>
<td>Breeding and Genetics: Whole Genome Selection</td>
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<td>Production, Management and the Environment: Environment 1</td>
<td>Growth and Development: Early Development and Fetal Programming</td>
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<td>Korbel Ballroom 2c</td>
<td>Physiology and Endocrinology: Sperm-Oviduct Interactions in Livestock and Poultry</td>
<td>Forages and Pastures: Environmental impact of forage based livestock production systems</td>
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<td>Nonruminant Nutrition: Mineral Nutrition</td>
<td>Nonruminant Nutrition: Vitamins and Management</td>
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<td>Nonruminant Nutrition: Feed Ingredients</td>
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<td>Animal Behavior and Well-Being: Sow housing, management, and stress</td>
<td>Animal Behavior and Well-Being: Poultry 2: Broilers</td>
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<td>Korbel Ballroom 4abc</td>
<td>Food Safety: Poultry Aspects</td>
<td>Ruminant Nutrition-Beef: Proteins and Carbohydrates</td>
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<td>Korbel Ballroom 4def</td>
<td>Nonruminant Nutrition: Amino Acids 2</td>
<td>Production, Management and the Environment: Dairy 1</td>
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<tr>
<td>301/302</td>
<td>ARPAS-Ruminant Nutrition Joint Symposium: Nutrition Models -- Where Are We Going in the Next Decade?</td>
<td>ARPAS Business Meeting</td>
<td>(2:00-3:00 pm) ADSA Foundation Awards Presentation: Production / (3:30-5:30 pm) ADSA Production Division Symposium: Dairy products and human health: The Facts</td>
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<td>Room</td>
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<td>303</td>
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<td>Immunology and Pathology: Immunity, nutrition, genomics, and gut microbiota</td>
<td>Bioethics: Should Animal Welfare be Law or Market Driven?</td>
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<td>304</td>
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<td>Lactation Biology 1</td>
<td>Animal Health: Management, Disease, and Performance</td>
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<td>401/402</td>
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<td>Small Ruminant Symposium: “Going, going, gone!” How curtailment of livestock grazing on federal lands could alter the US Sheep Industry</td>
<td>ASAS Cell Biology Symposium: Receptors and Signaling</td>
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<td>403/404</td>
<td></td>
<td>Breeding and Genetics: Cross-breeding</td>
<td>Swine Species</td>
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<td>405</td>
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<td>Teaching/Undergraduate and Graduate Education: Teaching Symposium: Surviving Promotion and Tenure with a Teaching Appointment</td>
<td>(2:00-4:00 pm) Small Ruminant: Sheep and Goat Production Session 2 / (4:30-5:00 pm) The ASAS Open Forum</td>
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<td>406</td>
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<td>501/502</td>
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<td>(9:30-10:30 am) Danisco International Dairy Science Award Lecture / (10:30-11:30 am) ADSA Foundation Awards Presentation: Foods / (11:30 am -12:30 pm) ADSA Dairy Foods Division Business Meeting</td>
<td>Dairy Foods: Towards a mechanistic understanding of probiotic function in man and animals</td>
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<td>503/504</td>
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<td>(9:30-11:05 am) Animal Health Symposium: Accounting for diseased animals in research trials (outliers, treatments, interactions)/ disease induction by treatment? / (11:30 am-12:30 pm) ADSA Production Division Business Meeting</td>
<td>Immunology and Pathology: Poultry Immunology and Diseases</td>
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<td>505/506</td>
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<td>Physiology and Endocrinology: Animal Physiology</td>
<td>Physiology and Endocrinology: Neuroendocrinology and Hormone Receptors</td>
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* Hospitality Room will be closed from 11:30 am to 3:00 pm today to accommodate a scheduled lunch.
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<tr>
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<tr>
<td>7:30 am - 9:30 am</td>
<td>507</td>
<td>National ADSA Production PhD Oral: Graduate Student Paper Competition - PhD Students</td>
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<td>9:30 am - 12:30 pm</td>
<td>705</td>
<td>ADSA Dairy Foods Division: Milk, Protein &amp; Enzymes Committee</td>
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<td>12:30 pm - 2:00 pm</td>
<td>707</td>
<td>ADSA-SAD Awards Luncheon</td>
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<td>2:00 pm - 5:00 pm</td>
<td>704</td>
<td>ADSA-DF Division Program Planning Luncheon</td>
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<td>5:00-6:00 pm</td>
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<td>ADSSA-SAwards Luncheon</td>
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<td>701</td>
<td>ASAS Foundation Emeritus/Retiree Luncheon</td>
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<td>WSAAS Awards Luncheon</td>
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<td>708/710/712</td>
<td>Michigan State University Luncheon</td>
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<td>NE ASAS/ADSA Business Meeting &amp; Awards Luncheon</td>
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<td>Poster/Exhibit Teardown</td>
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<td>Quality I: Basic Concepts</td>
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<td>Sexed Semen Symposium: Applying Sexed Semen in Cattle</td>
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<td>Immunology and Pathology</td>
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<td>Companion Animals: Comparative Enrichment: Implications for Health and Behavior</td>
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<td>ADSA Business Meeting &amp; Open Forum</td>
<td>Breeding and Genetics: Milk and Carcass Composition</td>
<td>Animal Health and Well-Being: Dairy, Sheep, and Beef</td>
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<td>405</td>
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<td>Teaching/Undergraduate and Graduate Education: Beyond PowerPoint: Use of Technology in the Classroom</td>
<td>Breeding and Genetics: Functional Traits and Fitness</td>
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<td>Dairy Foods: Cheese</td>
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<td>Dairy Foods: Chemistry-Protein</td>
<td>(2:00-3:30 pm) Dairy Foods: Foods &amp; Products / (3:30-5:00 pm) Teaching/Undergraduate and Graduate Education 2</td>
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<td>Physiology and Endocrinology: Hormonal Control of Estrus in Beef Cattle</td>
<td>Physiology and Endocrinology: Sperm Fertility, Embryos and Development</td>
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<td>Production, Management and the Environment: General</td>
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<td>FeedAC Business Meeting</td>
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<td>WSASAS Executive Committee Post Conference Meeting</td>
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<td>Hospitality Room</td>
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<td>(6:30-7:30 pm) ASAS-PSA Joint Executive Committee Meeting</td>
<td>(11:20 am-12:30 pm) ADSA-ASAS Joint Executive Committee Meeting</td>
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<td>(4:30-6:00 pm) Johne’s Disease Interest Group</td>
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<td>Physiology and Endocrinology: Feed Intake, Metabolism and Maternal Nutrition</td>
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<td>Horse Species: Pathogenic and Reproductive Dysfunction in Horses Symposium</td>
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<td>Ruminant Nutrition: By-products and supplements</td>
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<td>Food Safety: General Aspects</td>
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<td>Animal Health: Probiotics, Performance, and Antioxidants</td>
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Future Meeting Dates

2011
New Orleans, Louisiana
ADSA®-ASAS
July 11–14

2011
St. Louis, Missouri
PSA - AAAP - AVMA
July 16–19

2012
Phoenix, Arizona
ADSA®-ASAS
July 15–19

2012
University of Georgia, Athens
PSA
July 9–12