Helping shape the landscape since 1954

For more than half a century, Elanco has helped shape the animal health industry around the world — from the pastures of Nebraska to the pampas of Argentina, and in dozens of nations spanning the global horizon.

Wherever they raise animals, food producers count on Elanco for groundbreaking products that keep animals comfortable and healthy so they can perform to their full potential. We are known for a service philosophy founded on integrity, and for sharing reliable advice based on decades of experience and exploration.

Looking ahead, we remain devoted to transforming animal agriculture through superior products and services—supported by people who care.
Welcome to Indianapolis! Your “race to Indy” has brought you to what promises to be one of our most memorable joint annual meetings. From the opening session that begins the celebration of the ASAS Centennial to the Joint Biology of Lactation and Triennial Lactation Symposium that closes out the meeting on Friday, you will find exciting opportunities for intellectual and professional advancement, as well as the always enjoyable prospect of renewing old friendships and developing new ones.

The ADSA-ASAS Plenary Session on Monday afternoon will provide a unique start to the meeting, when up to eight late-breaking “hot topic” abstracts will be presented. The opening session, which begins the ASAS Centennial, will certainly be a highlight of the meeting. The Bellamy Brothers will entertain us, and a video retrospective that highlights many of the accomplishments during the first century of ASAS will be premiered. As a memento of this special occasion, all attendees will receive a copy of the ASAS Centennial coffee table book. To celebrate 100 years of science in ASAS, Centennial Papers will be presented during various scientific sessions, and special Centennial displays prepared by animal science departments from around the country will be on view in the exhibit hall. On Tuesday evening, ADSA will be hosting its Town Hall meeting, and ASAS will highlight its new strategic plan at Racing to Indy: The ASAS Open Forum on Wednesday afternoon. To wrap up the celebration, please be sure to join us at the closing reception on Thursday evening.

A truly outstanding scientific program has been developed this year. Many thanks to all the chairs and members of program committees, and especially to the 2008 overall program committee comprising Steven Lonergan (chair), Ron Pearson (vice-chair), Dorian Garrick, and Leo Timms for their outstanding work on the program. Over 1,800 abstracts were submitted this year, and more than 40 outstanding symposia have been planned, along with Foundation Scholar lectures and many invited presentations in individual sessions. The ASAS Board-sponsored cell biology symposium, two companion animal symposia, three dairy foods and two meat science symposia complete a comprehensive array of symposia sure to serve the needs of every attendee. These special sessions combined with our broad assortment of discipline- and species-specific symposia together with oral and poster abstract sessions create numerous opportunities for all of us to expand our scientific horizons.

Along with great science, we plan to enjoy great camaraderie as we honor many of our members who have excelled in teaching, research, outreach, and service. The ASAS awards program will be on Tuesday evening, followed by the ADSA awards program on Wednesday evening. And no joint annual meeting would be complete without the ADSA-ASAS Ice Cream Social on Wednesday evening.

The ADSA-ASAS joint annual meeting is a big event, and it could not happen without the hard work of many people. The contributions of our program committees have already been noted, but we also want to thank our Executive and Associate Executive Directors—Peter Studney of ADSA and Meghan Wulster-Radcliffe and Paula Schultz of ASAS, along with the FASS staff, for working to make our meetings the best they can be.

So, enjoy your time in Indy. Think about the past, dream about the future, and make the most of this one-of-a-kind meeting.
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**adsa.asas.org/meetings/2008**

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### 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

ASAS Centennial Celebration
We will be celebrating the ASAS Centennial at the 2008 Joint ADSA®-ASAS Meeting in Indianapolis. To kick off the celebration we are having a party at the opening session featuring music by the Bellamy Brothers and a retrospective highlighting the major accomplishments of the last 100 years of animal science and of the Society. In addition to the celebration at the opening session, all meeting attendees will receive a free copy of the ASAS Centennial coffee table book and the video. As stated by David Ames, the ASAS Centennial coffee table book has been designed to describe pictorially, “What is Animal Science?” Within the program, papers describing the history and future of fields within animal science will be presented—look for the “ASAS Centennial” designation in the program. In addition, more than 30 historical exhibits will be on display throughout the exhibit hall. To ensure that during our Centennial we are not just looking at the past, but moving forward, we will be launching the new ASAS strategic plan during Racing to Indy: The ASAS Open Forum on Wednesday, July 9.

Location
The Indiana Convention Center & RCA Dome is located in the heart of Indianapolis and within walking distance of numerous hotels and restaurants. Skywalks link the Indiana Convention Center and RCA Dome to seven premium hotels, including the Westin (ADSA Headquarters) and the Marriott (ASAS Headquarters), which will serve as the headquarters hotels. The compactness of downtown Indianapolis puts you within steps of dozens of restaurants including Ruth’s Chris Steakhouse, St. Elmo’s, Hard Rock Café, Palomino Euro Bistro, and Shula’s. For a quicker bite, try Claddaugh, the Slippery Noodle, or the Red Eye Café. You are also steps away from theaters, nightclubs, museums, and shopping in the Circle Centre Mall.

Schedule of Events
The 2008 ADSA-ASAS Joint Annual Meeting and ASAS Centennial Celebration will be held July 7–11 (Monday through Friday). The opening session will be held on Monday evening, July 7; scientific sessions will kick off Tuesday morning, July 8, and run through noon on Friday, July 11.

The Triennial Lactation Symposium, joint with the Lactation Biology Symposium, will be held all day on Friday, July 11. Also, we welcome back the Mixed Models Workshop this year, to be held all day Thursday, July 10, and finishing up on Friday morning. Animal Breeding and Genetics will be holding a workshop for the first year on the use of an online system to help supplement graduate education in breeding and genetics. This workshop will be on Thursday evening.

The 2008 opening session will feature a video retrospective showcasing the ASAS Centennial Celebration followed by a concert with the Bellamy Brothers. The complete schedule of events can be found on page 49 of this brochure, or online at adsa.asas.org/meetings/2008/.

Program Format for 2008

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Meeting rooms will be equipped for electronic presentations and preloaded sessions. A Cyber Café will be available for attendees to keep up to date while at the meeting.
Registration Hours

Registration will be located in the Maryland Street Lobby-East of the Indiana Convention Center & RCA Dome in Indianapolis. Registration hours for the 2008 ADSA-ASAS Joint Meeting, including special symposia and other events, will be as follows:

- **Sunday, July 6 (preregistered only)**: 3:00 pm – 5:00 pm
- **Monday, July 7**: 11:00 am – 7:00 pm
- **Tuesday, July 8**: 6:30 am – 5:15 pm
- **Wednesday, July 9**: 7:00 am – 5:45 pm
- **Thursday, July 10**: 7:00 am – 5:45 pm
- **Friday, July 11**: 8:00 am – 5:15 pm

Important Phone Numbers

- Registration Desk: 317-262-1590
- Indianapolis Marriott Downtown: 317-822-3500
- The Westin Indianapolis: 317-262-8100
- Hampton Inn Downtown: 317-261-1200
- Omni Severin Hotel: 317-634-6664
- Crowne Plaza Hotel: 317-631-2221
- Indiana Convention Center & RCA Dome: 317-262-3400
- Indianapolis Convention and Visitors Bureau: 800-323-IN DY
- Time, Temperature & Weather: 317-222-2222

Online weather information is available at http://www.indy.org/indianapolis/web/jsp/common/weather.jsp

Media Check-In

Please check in at the Registration Desk in the Maryland Street Lobby of the Convention Center.

Speaker Ready Room

The Speaker Ready Room is located in Room 111 on the 1st level of the Convention Center. This room will be available for speakers from 7:00 am - 5:00 pm on each day of the meeting.

Business Center

The Indiana Convention Center & RCA Dome Business Center, in partnership with IKON Office Solutions (317-262-4496), is located on the 1st floor of the facility in the Capitol Avenue Lobby, directly across from Room 116. Limited services include black and white copy services, color copy services, large format color and black and white, document finishing/binding, fax services, copier rental, facsimile rental, basic office supplies, and shipping.

Hospitality Lounge

The hospitality lounge will be located in Room 113 on the 1st level of the 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.

Presentation Information

Oral and Invited Speakers

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

ASAS Centennial Presentations

We will be celebrating the ASAS Centennial at the 2008 Joint ADSA-ASAS Meeting this year. Within the program, papers describing the history and future of fields within animal science will be presented—look for the “ASAS Centennial Presentation” designation in the program. Please see page 61 for a complete listing of all centennial presentations.
Poster Presentations
We have dedicated a two-hour block each morning to poster presentations. The “open poster” sessions will be from 7:30 to 9:30 am Tuesday, Wednesday, and Thursday in the Convention Center, Exhibit Hall CDE.

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 open at 7:30 am, so posters must be mounted on boards by 7:00 am). The exhibit hall will open at 6:15 am, Tuesday through Thursday. 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. Tuesday posters will have a “T”, Wednesday posters a “W”, and Thursday posters a “TH” preceding 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 2008 ADSA-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)
Many of the symposia at the 2008 ADSA-ASAS 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 adsa.asas.org/meetings/2008/. Information regarding RACE can be found at www.aavsb.org.

Job Resource Center

Cyber Café
Keep in touch with work, family, and friends during the ADSA-ASAS Joint Annual Meeting at the Cyber Café. Located in Exhibit Hall CDE of the Indiana Convention Center & RCA Dome, 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

**Indianapolis Marriott Downtown – ASAS HQ**
350 West Maryland Street
Indianapolis, IN 46225
317-822-3500

**The Westin Indianapolis – ADSA HQ**
50 South Capitol Avenue
Indianapolis, IN 46204
317-262-8100

**Hampton Inn Downtown – Student HQ**
105 South Meridian Street
Indianapolis, IN 46225
317-261-1200

**Omni Severin Hotel**
40 West Jackson Place
Indianapolis, IN 46225
317-634-6664

**Crowne Plaza Hotel & Conference Center**
123 West Louisiana Street
Indianapolis, IN 46225
317-631-2221

Transportation in Indianapolis

A new shuttle service is now available at the Indianapolis International Airport. IndyGo, Indianapolis’ metropolitan transit system, has started a new round-trip shuttle service between the airport and downtown area. At a cost of only $7 per person/per trip, the shuttle can be boarded at the Ground Transportation Center directly across from the airlines’ baggage claim areas for transportation to the downtown area. The shuttle is affectionately called the Green Shuttle and has both the Indy logos on it and a green stripe. Due to the compact nature of the downtown area, drop-off points are just steps from all the hotels, Convention Center, Lucas Oil stadium, and Circle Centre Mall. Service runs every 15 to 20 minutes beginning at 5:00 am and continuing until 9:00 pm. Passengers may pay with credit card (Visa or MasterCard), exact fare on bus, or purchase fare passes in advance by calling 317-635-3344, or online at www.IndyGo.net.

Currency Exchange

A currency exchange center is located in the Indianapolis Airport; it is located in the center of the main terminal. Downtown Indianapolis also offers several ATM machines.
Welcome to Indy!

Welcome to Indianapolis, the nation’s 12th largest city. Indianapolis offers big-city amenities in a convenient, easy-to-navigate package wrapped in a friendly, inviting atmosphere. Indy has undergone a dramatic revitalization and a stunning renaissance that makes it a different place than it was just a decade ago. It now strikes the perfect balance of cosmopolitan style and charm, making it a successful destination for leisure travel, conventions, and group tours, catering to more than 20 million visitors a year.

Indianapolis Activities and Sightseeing Options

With the abundance of things to do in Indianapolis, there is something for everyone at this year’s Joint Annual Meeting. Below please find a small sampling of the things to do in Indy. Please visit the Indianapolis Convention and Visitors Bureau’s website at www.indy.org for additional options.

Soldiers’ & Sailors’ Monument/Monument Circle
1 Monument Circle, Indianapolis, IN 46204
Phone: 317-232-7615
http://www.in.gov/iwm/2619.htm

The monument is located on Monument Circle in the center of downtown and has come to symbolize the city of Indianapolis and the state of Indiana. Originally designed to honor the memory of Indiana’s Civil War veterans, it now commemorates the valor of all Indiana military men and women in all wars prior to World War I. The monument stands approximately 300 feet above the surrounding streets. Allow time to look at the intricate design and statues. The War Memorial Commission offers a brochure describing all aspects of the design and symbolism. The Col. Eli Lilly Civil War Museum is housed in the lower level. Observation level is 330 steps up; you can take the elevator to step 290.
Circle Centre Shopping Mall
49 W. Maryland St., Indianapolis, IN 46204
Phone: 317-681-5615
Distance from Monument Circle: 0.19 miles

Shopping, dining, and entertainment complex, reminiscent of a European street market but located in the heart of downtown Indianapolis. With anchor stores Nordstrom and Carson Pirie Scott, 100 specialty stores, fine dining, food court, and convenient parking, Circle Centre offers you more choices. Contact us for complimentary mall directories or coupon books. Open 10 am to 9 pm Monday through Saturday, noon to 6 pm on Sunday. Department store, restaurant, and holiday hours may vary.

American Cabaret Theatre
401 E. Michigan St., Indianapolis, IN 46204
Phone: 317-631-0334
http://www.actindy.org/
Distance from Monument Circle: 0.55 miles

Indianapolis’ premier musical theatre and most exciting choice for live, quality entertainment is located in the historic Athenaeum building in downtown Indianapolis. The theatre offers cabaret-style seating in an intimate setting, complete with a cash bar and concessions.
**Indiana State Museum**  
650 W. Washington St., Indianapolis, IN 46204  
Phone: 317-232-1637  
http://www.in.gov/ism/index.aspx  
Distance from Monument Circle: 0.56 miles

The Indiana State Museum in White River State Park is the state's gathering place to explore the state's past, present, and future through exhibits inviting exploration and discovery of art, science, history, and culture. This architecturally significant complex includes permanent and changing exhibits, two restaurants, a gift shop, and Indianapolis' only IMAX Theater. Mastercard and Visa accepted.

**Eiteljorg Museum of American Indians & Western Art**  
500 W. Washington St., Indianapolis, IN 46204  
Phone: 317-636-WEST  
http://www.eiteljorg.org/  
Distance from Monument Circle: 0.57 miles

Go West, young man...west of Indianapolis' famed Monument Circle, that is. The Eiteljorg Museum is unique: one of only two museums east of the Mississippi with both Native American and Western art. Located in downtown Indianapolis, the museum is within walking distance of the Indiana Convention Center & RCA Dome, Circle Centre mall, and major downtown hotels. The building’s distinctive design was inspired by the land, people, and architecture of the American Southwest. The American Western Gallery includes works from the Taos, New Mexico Artists’ Colony, as well as pieces from such legends as Remington and Russell. Contemporary artists who tell the story of today’s West are also represented and the Native American collection includes pottery, basketry, sculpture, and other artifacts from all 10 North American native cultural areas.
White River State Park
801 W. Washington St., Indianapolis, IN 46204
Phone: 317-233-2434
http://www.in.gov/whiteriver/
Distance from Monument Circle: 0.7 miles

Located in the heart of downtown, Indiana’s only urban state park offers an awesome array of attractions, entertainment, and recreation: Indianapolis Zoo, White River Gardens, Victory Field baseball park, Eiteljorg Museum of American Indians & Western Art, IMAX Theater, Indiana State Museum, NCAA Hall of Champions & Headquarters, The Lawn performance venue, Congressional Medal of Honor Memorial, Military Park, McCormick’s Rock, Pedestrian Bridge, River Promenade, Pumphouse, Central Canal, pedal boat rentals, bike rentals, Visitor Center, and restaurants at attractions.

Indianapolis Zoo
1200 W. Washington St., Indianapolis, IN 46222
Phone: 317-630-2001
http://www.indianapoliszoo.com/
Distance from Monument Circle: 1.18 miles

Just footsteps from downtown, the zoo is open daily at 9 am. Highlights include Indiana’s largest aquarium, open exhibit areas with 350 different animal species, and seasonal pony, train, and family rollercoaster rides. The complex also includes the 3.3-acre White River Gardens, featuring hundreds of plant varieties on display in outdoor gardens, as well as entertaining and educational conservatory exhibits throughout the year. The Indianapolis Zoo’s mission is to connect animals, plants, and people.

Your pet is special.
We believe his food should be, too.

Hill’s

American Society of Animal Science
1908

Support the ASAS Foundation through the Next Century Fund:
Promoting
**Membership** **New programs** **Continued sustainability**

Contact ASAS@assoehq.org for more information
**Indianapolis Museum of Art**  
4000 N. Michigan Rd., Indianapolis, IN 46208  
Phone: 317-923-1331  
http://www.imamuseum.org/  
Distance from Monument Circle: 4.12 miles

Just 15 minutes from downtown Indianapolis on 152 acres of gardens and grounds, the Indianapolis Museum of Art (IMA) is the fifth-largest general art museum in the United States, with a collection of more than 50,000 works that spans a wide range of cultures and eras. The IMA also has significant holdings of African art, Chinese ceramics, West Asian rugs, fashion arts, and a rapidly growing contemporary collection from emerging and internationally renowned artists.

**Indianapolis Motor Speedway**  
4790 W. 16th St., Indianapolis, IN 46222  
Phone: 317-492-6747  
http://www.indianapolismotorspeedway.com/  
Distance from Monument Circle: 4.51 miles

The Indianapolis Motor Speedway, opened in 1909, is the world’s largest spectator facility and the only racetrack to host the Indy Racing League, NASCAR, and Formula One. Since 1911, the Speedway has been the home of the “Greatest Spectacle in Racing,” the Indianapolis 500 held each May. The Allstate 400 at the Brickyard (formerly Brickyard 400) has quickly become one of NASCAR’s most coveted races since the inaugural event in 1994 and heats up the track in late July. The Speedway completed the Triple Crown of Racing 2000-2007 with the addition of June’s United States Grand Prix, the only Formula One race run in the United States. Beginning in 2008, the Speedway’s infield road course will host the Red Bull Indianapolis GP motorcycle race.
Special Events
Scheduling and locations are subject to change. Please check the onsite newsletter each morning for changes.

**ADSA-ASAS Plenary Session: Late-Breaking Research**
*Monday, July 7*
*3:00 pm – 5:00 pm*
*Convention Center, Room 107-108*
The purpose of the late-breaking research session will be to highlight very recent discoveries of importance to their discipline and species. Inclusion of these papers at the Joint Annual Meeting provides the authors a venue to present results in a very timely fashion. The session also offers meeting participants a view of some of the most important discoveries made in the early part of 2008.

**SAD-Dairy Quiz Bowl Final Round**
*Monday, July 7*
*5:30 pm – 6:00 pm*
*Convention Center, Room 203*
On Monday, 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 2008 Dairy Quiz Bowl Winning Team.

**Opening Session and ASAS Centennial Celebration**
*Monday, July 7*
*7:00 pm – 8:30 pm*
*Convention Center, Sagamore Ballroom 3, 4, 5*
Come help us kick off the ASAS Centennial celebration at the opening session. We are having a party that includes music by the Bellamy Brothers and a video retrospective highlighting the major accomplishments of the last 100 years of animal science and of the Society.
Opening Reception and ASAS Centennial Celebration  
Monday, July 7  
8:30 pm – 10:00 pm  
Convention Center, 500 Ballroom and Reception Room  
Wind down the evening by joining us after the opening session for dessert and some long-awaited socializing with colleagues and friends.

ASAS Graduate Student Business Meeting  
Tuesday, July 8  
12:30 pm – 1:00 pm  
Convention Center, Room 103  
The ASAS Graduate Directors invite all ASAS graduate student members to a business meeting on Tuesday, July 8, from 12:30 pm to 1:00 pm. This business meeting has been established in response to a direct request from several graduate student members. It serves as an opportunity for graduate students to voice their opinions and concerns. The ASAS Graduate Directors are seeking graduate student members’ opinions on the direction of ASAS and how ASAS can meet their needs. All registrants interested in opportunities for ASAS and graduate students are welcome to attend.

Exhibitor Reception  
Tuesday, July 8  
4:00 pm – 6:00 pm  
Convention Center, Exhibit Hall CDE  
Relax after a high-energy first day of meeting with drinks 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.

ADSA Town Hall Meeting  
Tuesday, July 8  
5:00 pm – 6:00 pm  
Convention Center, Room 104  
The ADSA Board of Directors invites attendees to a town hall meeting on Tuesday, July 8, from 5:00 to 6:00 pm in the Convention Center. This year’s meeting will again focus on progress made in implementing ADSA’s Strategic Plan, unveiled in 2006. All registrants interested in ADSA are welcome.

ASAS Awards Program  
Tuesday, July 8  
7:00 pm – 8:30 pm  
Marriott, Ballroom 5  
All meeting participants, families, and friends are welcome to attend the 2008 ASAS awards program. Please join us at this special event to recognize and congratulate the 2008 ASAS award winners at the Marriott on Tuesday, July 8.

SAD Dance Party  
Tuesday, July 8  
8:30 pm – 12:30 am  
Westin, Capitol 3  
Ticket Price: $5.00 (free for undergrads)  
Rock the night away with old and new friends at the hottest dance party in Indy on Tuesday night! The dance floor will be packed as the crowd rocks, two-steps, and line dances their way from the first song to the last. Cash bar and free snacks will be available. This event is open to all meeting attendees, including students, advisors, and anyone else looking for a fun evening. Primary sponsors: the Dairy Clubs of ADSA.
Graduate Student Mixer  
Tuesday, July 8  
9:00 pm  
Rock Bottom Brewery  
10 West Washington  
Indianapolis, IN 46204

Join your fellow graduate students from ASAS and ADSA at a mixer at the Rock Bottom Brewery. Appetizers and beverages will be provided for those who register, but the event will be open to everyone. Free billiards will also be offered at the event. The mixer is a great opportunity to catch up with old friends and make new ones, so don’t miss it. Preregistration is highly recommended.

5K Fun Run  
Wednesday, July 9  
6:15 am  
Meet at the Convention Center

Join in the fun on Wednesday, July 9, at 6:15 am. Enjoy downtown Indianapolis while running this 5-km course. T-shirts and refreshments will be provided. Please preregister for this event; fee and waiver apply.

Spouse Event  
Wednesday, July 9  
Indianapolis Highlights Tour  
11:00 am – 2:00 pm  
Meet at the Convention Center, Maryland St. Lobby

Join us for a bus tour of downtown Indianapolis’ most popular sites. After the tour, you will be taken to the Indiana State Museum for lunch in the L. S. Ayers Tearoom. Admission to the museum is included in your ticket price, so you will have the opportunity to explore the museum for a short time after lunch. The bus will return to the convention center at 2:00 pm. If you choose to explore the museum further or visit the Eiteljorg Museum of American Indians and Western Art next door, the walk back to the convention center is an easy 15 minutes. Walking maps will be provided onsite.
**SAD Awards Luncheon**  
*Wednesday, July 9*  
11:45 am – 2:00 pm  
**Convention Center, 500 Reception Room**  
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.

**ASAS Graduate Student Lunch and Learn: An Industry Perspective on How to Get a Job**  
*Wednesday, July 9*  
12:30 pm – 2:00 pm  
**Convention Center, Room 201**  
The ASAS-sponsored Graduate Student Symposium is open to all. The Lunch and Learn is open to ASAS Graduate Students interested in an industry job. This will be an open forum featuring Jerry Weigel, an industry leader within the animal feed industry. Jerry will candidly answer questions about breaking into industry, how to land a job, negotiate, and have a successful industry career.

**Racing to Indy: The ASAS Open Forum**  
*Wednesday, July 9*  
5:00 pm – 6:00 pm  
**Convention Center, Room 103**  
Attendees are invited to the ASAS Open Forum on Wednesday, July 9, from 5:00 pm to 6:00 pm in the Convention Center. You will have the opportunity to join discussions on current ASAS issues and the new ASAS Strategic Plan.

**ADSA Awards Program**  
*Wednesday, July 9*  
7:00 pm – 8:00 pm  
**Marriott, Ballroom 5**  
All meeting participants, families, and friends are welcome to attend the 2008 ADSA awards program. Please join us at this special event to recognize and congratulate the 2008 award winners. Please note that this ADSA program will take place at the Marriott.

**2008 ADSA-ASAS Ice Cream Social**  
*Wednesday, July 9*  
8:15 pm – 9:30 pm  
**Marriott, Ballroom 6–10**  
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.

**ADSA Foundation Auction**  
*Wednesday, July 9*  
8:15 pm – 9:30 pm  
**Marriott, Ballroom 6–10**  
This year, the ADSA Foundation auction will offer a wide array of items including dairy antiques, valued collectibles, trips, and much more. Please note that this ADSA function will take place at the Marriott.

**Closing Reception**  
*Thursday, July 10*  
4:30 pm – 6:00 pm  
**Convention Center, 500 Reception Room**  
All meeting participants, families, and friends are welcome to attend the closing reception on Thursday 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.
2008 ADSA Award Donors

ABS Global Inc.
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Land O’Lakes, Purina Feed LLC
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Nutrition Professionals Inc.
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Pioneer, A DuPont Company
West Agro Inc.

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American Society of Animal Science
American Society of Animal Science Foundation
Center for Regulatory Services Inc.
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Advancing Nutrition for Healthy Animals

Healthy animals from start-to-finish in our food supply chain—it’s what you want, what we want, and what the consumer wants.

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We are advancing animal nutrition through science—from start-to-finish.

Call 800-6-PRINCE
or visit www.princeagri.com

Please Visit Booths 208-210
# Exhibit Schedule

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# Exhibit Floor Plan

Indiana Convention Center
Indianapolis, Indiana
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A special thank you to our 2008 ADSA-ASAS Joint Meeting Exhibitors!
Here in the dairy case, success starts with the cows.

The Pfizer Dairy Wellness Plan helps you make the connection between healthy cows and a healthy bottom line. This complete approach consistently addresses key management areas of your operation, from milk quality and disease prevention to fresh cow health and reproduction. Because how you care for your cows has a lot to do with how good your milk is when it hits the shelves. Start your Dairy Wellness Plan by calling your veterinarian or Pfizer Animal Health representative today.

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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 750 institutions in 30 countries have earned AAALAC accreditation.

Acadian Agritech
30 Brown Avenue
Dartmouth, NS B3B 1X8
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Phone: 902-468-2840; fax: 902-468-3474
www.tasco.ca
Booth(s): 109

Tasco is a “functional food” type of feed ingredient designed to address some of today’s production issues in different livestock industries. Tasco is a natural marine-sourced feed ingredient that helps modulate functions in the animal relevant to health, productivity, and stress resistance.

Adisseo
One Point Royal
4400 North Point Pkwy., #275
Alpharetta, GA 30022
Phone: 678-339-1502; fax: 678-339-1602
http://www.adisseo.com
Booth(s): 500, 502, 516, 518

Adisseo offers a wide range of feed additives in various forms, adapted for all types of feed and species. Our products include Microvit (full line of vitamins), Rhodimet (methionine in both powder and liquid analog forms), MetaSmart and Smartamine (ruminant methionine), and Rovabio (enzymes in both liquid and powder forms).

Advanced Genomics Technology Center
3007 Williams Drive
Fairfax, VA 22031
Phone: 866-599-2482; fax: 703-245-7128
http://www.agtcenter.com
Booth(s): 136

The Advanced Genomics Technology Center provides the academic, biotechnology, and pharmaceutical communities with comprehensive genomic services. In addition to providing high quality data, the AGTCenter team will assist you with experimental design and data analysis. All microarray studies are performed on Illumina systems, the most versatile genetic analysis platform.

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): 808

AminoPlus is the number one volume bypass protein soybean meal dairy supplement in United States. The patented AminoPlus process utilizes soybean meal to provide high amino acid quality, rumen bypass and intestinal digestibility without the addition of chemicals or non-soybean components. Learn about the benefits of AminoPlus and AGP’s third major expansion of AminoPlus processing capacity coming to AGP, Sgt. Bluff, Iowa in 2008.

Albion Advanced Nutrition
101 N. Main St.
Clearfield, UT 84015
Phone: 801-820-1155
http://www.AlbionMinerals.com
Booth(s): 1020

Albion Animal Nutrition increases profits of our customers with research-proven MAAC brand of Metal Amino Acid Chelates (AAFCO 57.142). Albion’s minerals enhance the health and performance of livestock, poultry, and pets. Albion has superior science and research dedicated to specific chelated mineral nutrition with proven efficacy, resulting in superior performance.
Alltech
3031 Catnip Hill Pike
Nicholasville, KY 40356
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http://www.alltech.com
Booth(s): 300, 301, 302, 303, 304, 305

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
Phone: 203-269-5088 x228; fax: 203-269-6075
http://www.aloka.com
Booth(s): 510

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.

American Dairy Science Association (ADSA)
1111 North Dunlap Ave
Savoy, IL 61874
Phone: 217-356-3182; fax: 217-398-4119
http://www.adsa.org
Booth(s): 400

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)
1111 N. Dunlap Avenue
Savoy, IL 61874
Phone: 217-356-3182; fax: 217-398-4119
http://www.asas.org
Booth(s): 402, 404

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.

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1.1. S. E. Alpharma Inc. 1111 North Dunlap Ave, Savoy, IL 61874
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www.alpharma.com
Ankom Technology
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Macedon, NY 14502
Phone: 315-986-8090; fax: 315-986-8091
http://www.ankom.com
Booth(s): 1012, 1014

Ankom Technology is known for Filter Bag Technology for determining ADF, NDF, and crude fiber in feedstuffs and fat in feeds and foods. Ankom products support in vitro and in situ digestibility and in vitro gas production. Ankom products are in use in over 85 countries around the world.

APC Inc.
2425 SE Oak Tree Ct.
Ankeny, IA 50021
http://www.functionalproteins.com
Booth(s): 101, 103

APC Inc. is a world leader in the development of functional proteins for animal health and nutrition. For twenty-five years, APC’s research investments have yielded safe, effective products to improve animal performance in the swine, ruminant, aquaculture, companion animal and poultry industries.

Arm & Hammer Animal Nutrition
469 N. Harrison
Princeton, NJ 08543
Phone: 800-526-3563; fax: 609-497-7176
http://www.ahdairy.com
Booth(s): 107

Arm & Hammer Animal Nutrition is a leading supplier of innovative dairy nutrition products designed to enhance performance and profitability during key life cycle stages. Our product portfolio improves dairy producer profitability by enhancing nutrition programs to match specific life cycle needs. For more information, please visit www.ahdairy.com.

ARPAS
1111 North Dunlap Avenue
Savoy, IL 61874
Phone: 217-356-5390; fax: 217-398-4119
Booth(s): 1004

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 and ASAS Centennial
1111 N Dunlap Ave
Savoy, IL 61874
Phone: 217-356-3182; fax: 217-398-4119
Booth(s): 131

Stop by the ASAS Centennial booth sponsored by the ASAS Foundation. The booth will have details about all of the special events and activities scheduled during the ASAS Centennial celebration in Indy!

Auburn University Dept. of Animal Sciences
108 Upchurch Hall
Auburn University, AL 36849
Phone: 334-844-1533; fax: 334-844-1519
http://www.ag.auburn.edu/ansc/
Booth(s): 429

The Department of Animal Sciences at Auburn University enhances the economic, social, and cultural development of the state of Alabama, the nation and the world through its nationally and internationally recognized programs of excellence in resident instruction, research, and outreach.

Balchem
PO Box 600
52 Sunrise Park
New Hampton, NY 10958
Phone: 845-326-5600; fax: 845-326-5742
http://www.balchem.com
Booth(s): 902, 916

The Animal Nutrition and Health Division brings the benefits of patented proprietary encapsulation and chelated trace mineral technology to the livestock, poultry and companion animal industries. Encapsulation and chelation technologies offer “protection nutrition” to sensitive compounds, making them available when and where they offer the most benefit to the animal.

Bar Diamond Inc.
PO Box 60
Parma, ID 83660
Phone: 208-722-6761; fax: 208-722-6686
http://www.bardiamond.com
Booth(s): 616

Bar Diamond provides rumen cannulae and accessories worldwide.
BIOMIN cares about natural health in animal nutrition. Our products and services offer a difference—that makes a difference—to our customers. The value proposition of our products and reliability of our services help to unlock the potential of animal nutrition † the natural way. Continuous innovation, effective services and products, and a worldwide presence make it easy for you to make BIOMIN the supplier of your choice. BIOMIN is always at your service. The global network of BIOMIN guarantees local solutions wherever you need it. In Austria the headquarters, the R&D team, and the production plant are located. From here we coordinate the activities in our regional offices in Germany, the US and Singapore and we are in direct contact with our European and African distributors. Any of your questions regarding our products can be answered by our product managers.

CABI Publishing
Nosworthy Way
Wallingford, Oxfordshire OX10 8DE
United Kingdom
Phone: +44 1491829376
http://www.cabi.org
Booth(s): 604

We are the publishers of renowned scientific information, including CAB Abstracts, our world-leading bibliographic database, multimedia compendia, books, and internet resources. Our subject areas include agriculture, animal and veterinary science, environmental sciences, human health, food and nutrition, leisure and tourism, microbiology and parasitology, and plant sciences.

CAST (Council for Agricultural Science and Technology)
4420 W. Lincoln Way
Ames, IA 50014
Booth(s): 134

CAST is a nonprofit organization composed of 37 scientific societies and many individual, student, company, nonprofit, and associate society members. CAST’s Board of Directors is composed of 38 representatives of the scientific societies and individual members representing over 170,000 member scientists, and an eight-member Executive Committee. Established in 1972, the primary work of CAST is the publication of task-force reports, commentary papers, and issue papers written by scientists from many disciplines.

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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 quality has produced products such as Probios, Biomate, Biomax, and BioPlus.

Classic Ultrasound Equipment
19900 Mona Road #105
Tequesta, FL 33469
Phone: 561-746-9527; fax: 561-746-4212
http://www.classicmedical.com
Booth(s): 216

Classic Ultrasound Equipment has digital imaging systems starting from $3,995 and the newest PC computer based ultrasound systems for a variety of animal types, sizes, and applications. The company also introduced the new PharVision Micro V6 Digital handheld linear/convex array system, weighing just three pounds, starting from $6,900.

Colorado State University
Department of Animal Science
Fort Collins, CO 80523
Booth(s): 423

Cumberland Valley Analytical Services
14515 Industry Drive
Hagerstown, MD 21742
http://www.foragelab.com
Booth(s): 914

Cumberland Valley Analytical Services Inc. is a testing laboratory providing a full complement of forage and feed evaluation services. We are one of the largest providers of wet-chemistry services in the US and have been a leader in adapting and commercializing new approaches to forage evaluation.

Dairy Cattle Reproduction Council (DCRC)
515 W North Shore Dr
Hartland, WI 53029
Phone: 262-563-5132; fax: 262-563-5101
http://www.dcrcouncil.org
Booth(s): 311

The Dairy Cattle Reproduction Council (DCRC) is a proactive organization with long-term interest in raising awareness of issues critical to reproductive performance. Through information and communication, it strives to deliver the latest in technology and resources. The Council consists of a wide array of dairy industry professionals—researchers and consultants, practitioners and producers—engaged in a collaborative effort to take cattle reproduction technology to the next level.

Dairy Records Management
313 Chapanoke Rd
Suite 100
Raleigh, NC 27603
Phone: 919-661-3100; fax: 919-661-3145
Booth(s): 622

PCDART has served the nation’s most intensively managed dairy farms over 25 years. With features like timed AI, a comprehensive protocols/chores system with treatment regimes, RFID, handheld input and review, and real-time networking, PCDART delivers well-designed solutions for herd managers and consultants. DRMS provides top-notch support by Animal/Dairy Science graduates with on-farm experience at no additional charge.

Dalex Livestock Solutions LLC
240 Industrial Blvd
Waconia, MN 55387
Phone: 952-442-4251; fax: 952-831-4251
http://www.dalex.com
Booth(s): 810

The Dalex suite of software includes The Windows Consulting Nutritionist (for Beef, Dairy, Equine and Swine), The Dalex Feed Tag and The Dairy Record Manager. We also offer the opportunity to become A Part of the Dalex Solution by entering your ingredients into our master ingredient library.
DASCOR Inc. manufactures a series of autonomous data loggers for ruminal research measurements of temperature, pH, ORP, NH4+, and pressure for use in cannulated cattle, and as boluses for use in sheep and goats. DASCOR is sponsoring a series workshops, tutorials, and “Meet the Researchers” sessions, which will be offered several times over the course of the Annual Meeting. Tutorials will review the User’s Guides for the LRCpH series of rumen loggers, while the workshops will go into more technical detail on sensor and logger performance and use, and will be adapted to the specific interests of the audience. Researchers who are actively using the LRCpH loggers will also present information on the work being done at their institutions, and lead a discussion and Q&A period. Schedules for speakers and topics will be posted in the DASCOR booth.

The US Food and Drug Administration, Center for Veterinary Medicine is a public health consumer protection organization. We foster public and animal health by approving safe and effective drugs, devices, and food additives given to over one hundred million companion animals, and millions of poultry, cattle, swine, and minor animal species.

Diamond V is the world’s leading manufacturer of fermented yeast culture products. For over 60 years, we have provided customers with YC, XP, XPC Concentrate, and XP DFM (a direct-fed microbial blend for ruminants). SelenoSource AF is our premier organic selenium yeast. We now introduce DV Aqua, our premier yeast culture designed and manufactured specifically for aquaculture.
Distillers Grains Technology Council
435 Lutz Hall
Univ. of Louisville
Louisville, KY 40292
Phone: 502-852-1575; fax: 502-852-1577
http://www.distillersgrains.org
Booth(s): 310

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, horses and combining it with other feed ingredients to reduce corn usage and costs. Stop and let’s talk about the rapidly growing availability of distillers and its feed value.

DSM Nutritional Products
45 Waterview Blvd.
Parsippany, NJ 07054
Phone: 800-677-8355; fax: 973-257-8653
http://www.nutraaccess.com
Booth(s): 512

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Philadelphia, PA 19103
Phone: 215-239-3491; fax: 215-239-3494
http://www.elsevierhealth.com
Booth(s): 800

Elsevier is a world-leading multiple media publisher of superior STM information products and services. Please visit the Elsevier booth in the exhibit area to browse our publications in animal science and related areas. Take the opportunity to collect free samples of key journals such as Livestock Science and Animal Feed Science and Technology and view a selection of our book titles.

www.elsevier.com/anivet the online resource dedicated to Elsevier products in Animal Science, Veterinary Science and Veterinary Medicine.

Evonik Degussa Corp.
1701 Barrett Lakes Blvd
Suite 340
Kennesaw, GA 30144
Phone: 678-797-4311; fax: 678-797-4313
http://www.makemilknotmanure.com
Booth(s): 910, 912

Evonik 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, L-lysine (Biolys), L-threonine, and L-tryptophan. Mepron, a rumen-protected DL-methionine, rounds off the company’s product range as part of its “one-source” strategy.

Federation of Animal Science Societies
1111 N. Dunlap Ave.
Savoy, IL 61874
Phone: 217-356-3182; fax: 217-398-4119
http://www.fass.org
Booth(s): 100, 102

The Federation of Animal Science Societies (FASS) was formed in 1998 by three founding member societies: the American Dairy Science Association® (ADSA®), the American Society of Animal Science (ASAS), and the Poultry Science Association (PSA).

FASS is unique in that we support common agricultural interests and, at the same time, streamline administrative expenses while preserving the societies’ traditions and values. We specialize in providing a wide array of management services to small- and medium-sized, not-for-profit associations. In addition, each year, PhD scientists in animal science compete for the opportunity to represent FASS in Congress through the Congressional Science Fellowship (CSF) Program. Many of these individuals stay on the Washington scene after their fellowship year and continue to serve animal agriculture in significant ways. Be sure to stop by the FASS booth to hear about DC activities from the 2008–2009 CSF.

Feed Management Systems
6120 Earle Brown Drive
Suite 300
Brooklyn Center, MN 55430
Phone: 763-560-8139; fax: 701-280-2668
http://www.feedsys.com
Booth(s): 1010

Feed Management Systems provides integrated software solutions for feed manufacturers to manage their critical formula and production data. Ensure the quality of your feed supply by automating and optimizing formulas, pricing, ordering, inventory, labeling, delivery, traceability, reporting and financials. Solutions include Feed Mill Manager, Brill Formulation, Feed Ration Balancer, and Feed Tags.
FeedAC
1111 N. Dunlap
Savoy, IL 61874
Phone: 607-749-7400; fax: 607-749-7401
http://www.feedac.org
Booth(s): 1006

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. We are pleased to announce that FeedAC and the National Forage Testing Association (NFTA, www.foragetesting.org) have reached a collaborative agreement to work together. This includes FeedAC supporting NFTA certification of all feed testing labs, NFTA using FeedAC proposed methods of feed analysis, and NFTA looking to FeedAC for recommendations on lab certification for other feeds. Be sure to stop by the FeedAC booth to get an update on FeedAC activities and to find out how you can get involved!

Feedstuffs
12400 Whitewater Drive, #160
Minnetonka, MN 55343
Phone: 985-930-4349; fax: 952-938-1832
Booth(s): 332

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.

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RR1 Site 1 Box 19
Airdrie, AB T4B2A3
Canada
Phone: 403-912-1879; fax: 403-398-1327
http://www.growsafe.com
Booth(s): 224, 226

The GrowSafe system is a sophisticated data acquisition platform that unobtrusively and automatically captures unique individual animal feed intake, behavior, and growth measurements continuously. Our systems are used in beef and dairy research, commercial seedstock test sites and feedlot and dairies worldwide. Come by booth 224/226 for a technology demonstration.
GTC Nutrition
600 Corporate Circle, Suite H
Golden, CO 80401
Phone: 800-522-4682; fax: 303-216-2477
http://fortifeed.com
Booth(s): 620

GTC Nutrition is a recognized leader in providing innovative, science-based ingredient solutions for the pet food and animal feed industries. The company’s flagship animal ingredient, FortiFeed short-chain fructooligosaccharides (scFOS) prebiotic fiber, offers numerous health and functional benefits. For more information call 800-522-4682 or visit fortifeed.com.

H.J. Baker & Bro. Inc.
228 Saugatuck Avenue
Westport, CT 06880
Phone: 203-682-9200; fax: 203-227-8351
http://www.bakerbro.com
Booth(s): 908

PRO-LAK Dairy By-Pass Protein supplement, designed to complement the protein from rumen microbial activity; 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

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Peachtree City, GA 30265
Phone: 770-486-7212; fax: 770-486-7217
Booth(s): 410, 412

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Igenity
3239 Satellite Blvd
Duluth, GA 30096
Phone: 877-IGENITY
http://www.igenity.com
Booth(s): 133, 135

Igenity provides the beef and dairy industries with the most comprehensive genetic profile of economically important traits—all from a single DNA sample. By using the power of DNA, beef and dairy producers can make more confident selection, procurement, management and marketing decisions. The inside information available from Igenity can help producers achieve their goals faster than ever before.

ILSI (International Life Sciences Institute)
One Thomas Circle NW, 9th Floor
Washington, DC 20005
Phone: 610-365-8117; fax: 202-659-3617
http://www.ilsi.org
Booth(s): 408

The ILSI International Food Biotechnology Committee (IF-BIC) supports the use of science-based criteria in the worldwide development and harmonization of science-based regulations and safety assessment of biotechnology-derived food and feed products, including best practices for animal nutrition studies. For more information, please visit www.ilsi.org.

International Ingredient Corp
150 Larkin Williams Ind. Ct.
Fenton, MO 63026
Phone: 314-776-2700; fax: 314-776-3395
http://www.iicag.com
Booth(s): 200

International Ingredient Corporation (IIC) is a manufacturer of high-quality ingredients for the feed, pet food, and aquaculture industry. IIC has nine plant locations and a dedicated staff to meet your quality standards and expectations.

Iowa Soybean Association
4554 N.W. 114th Street
Urbandale, IA 50322-5410
Phone: 515-251-8640; fax: 515-251-8657
http://www.soymeal.org
Booth(s): 714

The Soybean Meal INFOcenter website is designed to be a “center” or primary source of key information regarding soybean meal as an important supplement protein for livestock, poultry, and specialty markets. The website provides information to feed manufacturers, professional nutritionists, feed formulators, livestock and poultry producers, and the general public.

Iowa State University
119A Kildee Hall
Ames, IA 50011
Phone: 515-294-6030; fax: 515-294-0018
http://www.ans.iastate.edu/
Booth(s): 421

Iowa State University’s Animal Science department is dedicated to having a world-class program that is known for its excellent undergraduate and graduate teaching, research, and extension programs in animal agriculture. Major programs exist in animal breeding and genetics, meat science, nutrition, management, and physiology of domestic animals. Fifty world-renowned faculty provide 750 undergraduate students and 90 graduate students with opportunities for hands-on experiences with animals, cutting-edge science, and livestock management systems. The department interacts extensively with animal agriculture in the state, nationally, and throughout the world.
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 the Institute for Scientific Information (ISI), 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.

**Kahne Limited**  
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http://www.kahneanimalhealth.com  
Booth(s): 606

Kahne manufactures wireless rumen sensors for cattle, which transmit physical rumen dynamics. Our instruments measure parameters of motility, fermentation temperature and VFAs. Accordingly, we offer science effective tools to un-conceal hidden correlations between rumen activity and factors of wellbeing inclusive of livestock nutrition, health, welfare, behaviour and environmental impact.

**Kansas State University**  
232 Weber Hall  
Department of Animal Science & Industry  
Manhattan, KS 66506  
Phone: 785-532-1228; fax: 785-532-7059  
http://www.asi.k-state.edu  
Booth(s): 431

Kansas State Agricultural College was established February 16, 1863, as the first land-grant school created under the Morrill Act. Beginning as the “Department of Agriculture,” today’s Department of Animal Sciences and Industry, includes approximately 50 faculty with more than 750 undergraduate and 160 graduate students.
Lallemand Animal Nutrition offers a range of solutions for the dairy industry including Levucell SC and Levucell SB active dry yeast, Biotal forage inoculants, Alkosel organic selenium yeast, Agrimos, and other mineral enriched yeast supplements.

Michigan State University
1290 Anthony Hall
Department of Animal Science
East Lansing, MI 48824
Phone: 817-355-8384; fax: 517-353-1699
http://ans.msu.edu
Booth(s): 413

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http://www.msccompany.com
Booth(s): 320

MSC Specialty Nutrition is a leading, research-driven supplier of nutrition and health products designed to optimize animal performance. Major brands for dairy producers include Energy Booster 100 (rumen inert-fat), Excelerate and KwikMix (calf milk replacers). MSC Specialty Nutrition serves both national and international customers.

National Academies Press
500 Fifth Street, NW
Washington, DC 20001
http://www.nap.edu
Booth(s): 716

NAP publishes more than 200 books a year on a wide range of topics in science, engineering, and health, capturing the most authoritative views on important issues in science and health policy.

National Beef Cattle Consortium
Cornell University
B47 Morrison Hall
Ithaca, NY 14853
Phone: 859-257-7514; fax: 859-257-3412
http://www.nbcec.org
Booth(s): 428

The National Beef Cattle Evaluation Consortium (NBCEC) is an organization of researchers focused on beef cattle genetic evaluation. The consortium was formed at the request of the beef industry to coordinate future research in this area. Additionally, NBCEC conducts national programs in Extension and graduate student training in animal breeding.

National Institute for Animal Agriculture
1910 Lyda Avenue
Bowling Green, KY 42104
Phone: 270-782-9798; fax: 270-782-0188
http://www.animalagriculture.org
Booth(s): 706

National Institute for Animal Agriculture (NIAA) is a forum for building consensus and advancing solutions for animal agriculture and to provide continuing education and communication linkages to animal agriculture professionals. NIAA is where livestock producers, academia, government, veterinarians, regulators, and business executives meet to share issues and opportunities.

North Carolina A&T State University
Phone: 336-334-7615
http://www.ag.ncat.edu/
Booth(s): 411

The past, present, and future of Animal Science at North Carolina A&T University. North Carolina A&T State University is a cosmopolitan land-grant institution with a 3-fold mission of teaching, research and extension.

North Dakota State University
Department of Animal Sciences
Hultz 100C, PO Box 5727
Fargo, ND 58105-5727
Phone: 701-231-7426; fax: 701-231-7590
http://www.ag.ndsu.edu/ars/
Booth(s): 409

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http://www.novusint.com
Booth(s): 710, 712

Novus International Inc., headquartered in St. Louis, Missouri, serves customers in more than 80 countries. An industry leader in animal nutrition and health, Novus’s products include AGRADO feed ingredient, ALIMET feed supplement, ACTIVATE nutritional feed acid, ACIDOMIX preservative premixture, MINTREX organic trace minerals, SANTOQUIN feed preservative, and other ingredients.

Ohio State University
110 Animal Science Bldg.
2029 Fyffe Road
Department of Animal Science
Columbus, OH 43210-1095
Phone: 330-263-3900; fax: 330-263-3949
Booth(s): 405

Oklahoma State University
Rm. 114 Animal Science Bldg.
Department of Animal Science
Stillwater, OK 74078
Phone: 405-744-6077; fax: 405-744-7390
Booth(s): 403

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Oregon State University
112 Withycombe Hall
Animal Sciences
Corvallis, OR 97331-6702
Phone: 541-737-3316; fax: 541-737-4174
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Booth(s): 401

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Penn State University
324 WL Henning Bldg
Department of Dairy and Animal Science
University Park, PA 16802
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http://www.spah.com
Booth(s): 420, 422

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Texas Tech University
Department of Animal and Food Sciences
Phone: 806-742-2805
http://www.afs.ttu.edu
Booth(s): 323

The Department of Animal and Food Sciences is housed within the College of Agricultural Sciences and Natural Resources on the campus of Texas Tech University. In 2004, Animal and Food Sciences moved into a new state-of-the-art teaching and research facility. This new facility includes four multimedia classrooms, five specialized teaching and research labs, the largest retail meat cooler on a university campus, and a retail store (COWamongus). There are 22 active faculty engaged in teaching, research, and service in the department to help students expand their knowledge. Several of these faculty members are leading researchers in their respective fields, including food science, food safety, muscle biology, nutrition, animal well-being, breeding and genetics, physiology and with specialties in cattle, horse, sheep & goats, poultry and swine. The fact that these professors do their own research and teach classes guarantees that students will receive the highest quality education with the most current information.

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University of Arkansas
B111 AFLS Building
Department of Animal Science
Fayetteville, AR 72701
Phone: 479-575-3745; fax: 479-575-7294
http://animalscience.uark.edu/
Booth(s): 321

Efforts began in 1888 and the Animal Science department currently has 24 faculty in Fayetteville, Little Rock, and Hope. With 150+ students in Fayetteville and experiment stations throughout Arkansas, we strive for excellence in teaching, research, and extension to apply scientific principles to the production of livestock and companion animals.

University of Florida
Dept of Animal Sci., PO Box 110910
Shealy Drive and Ritchey Road
Gainesville, FL 32611-0910
Phone: 352-392-5590; fax: 352-392-5595
Booth(s): 132

University of Illinois
Department of Animal Sciences
1207 West Gregory Drive, 184 ASL (MC-630)
Urbana, IL 61801
Phone: 217-333-2647; fax: 217-333-7861
Booth(s): 315
Animal and Food Sciences at the University of Kentucky uses a multidisciplinary approach to address research problems from the cellular level to production systems, aiming to enhance animal production efficiency, improve health and well-being, and provide consumers with a healthy, safe food supply. Disciplines include nutrition, microbiology, physiology, and food science. Instructional efforts provide science-based education and the application of this knowledge to animal production and to the processing, preservation, and improvement of human foods. Extension programs advance sustainable agricultural and food systems and help our youth develop the character traits to be successful citizens.

University of Maryland
Animal and Avian Sciences Dept
Room 3129 Animal Sciences Bldg
College Park, MD 20742
Phone: 301-405-4243; fax: 301-314-9059
Booth(s): 906

Research contributions to animal science made during the past 100 years.

University of Nebraska
Department of Animal Science
C203 Animal Science
PO Box 830908
Lincoln, NE 68583-0908
Phone: 402-472-6406; fax: 402-472-6362
http://www.animalscience.unl.edu
Booth(s): 225

With cutting edge research, innovative teaching, and educational outreach programs, the Department of Animal Science at the University of Nebraska-Lincoln serves the state and nation. Headquartered in Nebraska’s capital city, we provide opportunities for unique educational experiences for undergraduate and graduate students focusing on the Nebraska’s animal industries. Our outreach programs support the livestock industries, the major economic engine of the Nebraska.
University of Tennessee
Department of Animal Science
206B Brehm, 2505 River Dr
Knoxville, TN 37996-4574
Phone: 865-974-3130; fax: 865-974-7297
Booth(s): 219

University of Wisconsin Department of Animal Sciences
1675 Observatory Drive
Madison, WI 53706
Phone: 608-263-7698; fax: 608-262-5157
http://www.anisci.wisc.edu
Booth(s): 217

University of Wyoming
Department of Animal Science
Dept. 3684, 1000 E. University Ave.
Laramie, WY 82071-3684
Phone: (307) 766-3100; fax: (307) 766-2355
Booth(s): 211

USDA–Animal Welfare Information Ctr
10301 Baltimore Ave, Room 410
Beltsville, MD 20705
Phone: 301-504-6212; fax: 301-504-7125
http://awic.nal.usda.gov
Booth(s): 218

Varied Industries Corporation
905 S. Carolina Ave
PO Box 1483
Mason City, IA 50401
Phone: 641-423-1460; fax: 641-423-0832
http://www.vi-cor.com
Booth(s): 324

Varied Industries Corporation (Vi-Cor) is a manufacturer of specialty fermentation feed ingredients located Mason City, Iowa. Vi-Cor distributes and markets their products in over 25 international markets. Vi-Cor has expanded to a company with a global focus, manufacturer of world-class fermentation products and providing custom manufacturing services.

Virginia Tech
Animal and Poultry Sciences Dept.
3470 Litton-Reaves Hall
Blacksburg, VA 24061-0306
Phone: 540-231-4732; fax: 540-231-3010
http://www.apsc.vt.edu/
Booth(s): 203

The Department of Animal Husbandry was established at VPI in 1904 and developed balanced, nationally and internationally recognized teaching, research, and extension programs by the early 1960s. In 1993, Animal and Poultry Sciences were combined into one of the largest, most productive, and best respected academic programs at Virginia Tech.

Washington State University
Animal Sciences Department
116 Clark Hall
Pullman, WA 99164-6310
Phone: 509-335-5523; fax: 509-335-1082
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- Zook Nutrition & Management Inc.

**ASAS**
- Ajinomoto Heartland LLC
- Akey
- Archer Daniels Midland Co
- Babcock Genetics Inc.
- Darling International Inc.
- Diamond V Mills Inc.
- Elanco Animal Health
- Global Pig Farms Inc.
- International Ingredient Corporation
- Kent Feeds Inc.
- Land O’Lakes, Purina Feed LLC
- MIN-AD Inc.
- Monsanto Company
- National Pork Board
- Nutra-Flo Protein and Biotech Products
- PCS Sales (USA) Inc.
- Pfizer Animal Health
- PIC North America
- Pioneer, A DuPont Company
- Ralco Nutrition Inc.
- Trouw Nutrition USA
- West Central Coop
- Zinpro Corporation

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(as of April 21, 2008)

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South Dakota State University
University of Kentucky
Indiana Convention Center
Exhibit Hall Floor Plan
Halls C, D, & E
Thank you to the 2008 ADSA®-ASAS Joint Meeting Sponsors!

<table>
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# Schedule of Events

Scheduling and locations are subject to change. Please check the onsite newsletter each morning for changes.

## Saturday, July 5

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>6:00 pm – 9:00 pm</td>
<td>ADSA Executive Committee Meeting</td>
<td>Westin, Council</td>
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## Sunday, July 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>7:30 am – 9:30 am</td>
<td>ASAS New Board Orientation</td>
<td>Marriott, Denver</td>
</tr>
<tr>
<td>10:00 am – 11:30 am</td>
<td>ASAS Membership Committee Meeting</td>
<td>Marriott, Denver</td>
</tr>
<tr>
<td>7:30 am – 5:00 pm</td>
<td>ADSA Board of Directors Meeting</td>
<td>Westin, House</td>
</tr>
<tr>
<td>12:30 pm – 9:00 pm</td>
<td>ASAS Board of Directors Meeting</td>
<td>Marriott, Lincoln</td>
</tr>
<tr>
<td>12:30 pm – 2:45 pm</td>
<td>SAD Speedway Tour</td>
<td>Meet in the Hampton Inn lobby</td>
</tr>
<tr>
<td>3:00 pm – 5:00 pm</td>
<td>Registration Open</td>
<td>(preregistered, badge and material pick-up only)</td>
</tr>
<tr>
<td>3:30 pm – 8:00 pm</td>
<td>SAD Night at the Indianapolis Indians Ballpark</td>
<td>Meet in the Hampton Inn lobby</td>
</tr>
<tr>
<td>7:30 pm – 5:00 pm</td>
<td>Utilization PD Reception</td>
<td>Marriott, Denver</td>
</tr>
<tr>
<td>7:30 pm – 9:00 pm</td>
<td>ARPAS Executive Committee Meeting</td>
<td>Westin, Congress 1</td>
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## Monday, July 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:30 am – 10:00 am</td>
<td>ADSA New Board Orientation</td>
<td>Westin, Cameral</td>
</tr>
<tr>
<td>7:30 am – 5:30 pm</td>
<td>CSREES NRI Animal Growth and Nutrient</td>
<td>Marriott, Indiana Ballroom A &amp; B</td>
</tr>
<tr>
<td>8:00 am – 3:00 pm</td>
<td>Animal Science Modelers Group</td>
<td>Westin, Capitol 1</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Exhibit Set-Up</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Student Dairy Clubs Set Up Exhibits</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>ARPAS Governing Board Meeting</td>
<td>Westin, Capitol 3</td>
</tr>
<tr>
<td>8:30 am – 12:30 pm</td>
<td>ASAS Board of Directors Meeting</td>
<td>Marriott, Lincoln</td>
</tr>
<tr>
<td>10:00 am – 11:00 am</td>
<td>SAD Officers and Advisor Meeting</td>
<td>Convention Center, Room 201</td>
</tr>
<tr>
<td>11:00 am – 7:00 pm</td>
<td>Registration Open</td>
<td>Convention Center, E. Maryland St. Lobby</td>
</tr>
<tr>
<td>11:00 am – 12:00 pm</td>
<td>SAD Quiz Bowl Officials Meeting</td>
<td>Convention Center, Room 201</td>
</tr>
<tr>
<td>11:30 am – 12:00 pm</td>
<td>SAD Quiz Bowl Seating Test</td>
<td>Convention Center, Room 202</td>
</tr>
<tr>
<td>12:00 pm – 5:00 pm</td>
<td>Hospitality Lounge Open</td>
<td>Convention Center, Room 113</td>
</tr>
<tr>
<td>12:00 pm – 1:00 pm</td>
<td>ADSA-SAD Midday Mixer</td>
<td>Convention Center, Room 116</td>
</tr>
<tr>
<td>12:00 pm – 1:00 pm</td>
<td>ADSA JDS Editors and Journal Management</td>
<td>Westin, Capitol 2</td>
</tr>
<tr>
<td>1:00 pm – 3:00 pm</td>
<td>2008 and 2009 Program Committee Meeting</td>
<td>Convention Center, Room 105-106</td>
</tr>
<tr>
<td>1:00 pm – 5:00 pm</td>
<td>ADSA Journal Management Committee Meeting</td>
<td>Westin, Capitol 2</td>
</tr>
<tr>
<td>1:00 pm – 5:00 pm</td>
<td>ADSA-SAD Quiz Bowl Seating/Preliminary Rounds</td>
<td>Convention Center, Rooms 202 &amp; 203</td>
</tr>
<tr>
<td>2:00 pm – 3:00 pm</td>
<td>ADSA Production Division Council Meeting</td>
<td>Convention Center, Room 103</td>
</tr>
<tr>
<td>2:00 pm – 3:30 pm</td>
<td>ADSA Foundation Board of Trustees Meeting</td>
<td>Westin, Cameral</td>
</tr>
<tr>
<td>2:00 pm – 5:00 pm</td>
<td>ASAS Retirees Gathering</td>
<td>Convention Center, Room 117</td>
</tr>
<tr>
<td>3:00 pm – 4:00 pm</td>
<td>ADSA Production Division Nominating Committee</td>
<td>Convention Center, Room 103</td>
</tr>
<tr>
<td>3:00 pm – 5:00 pm</td>
<td>Late-Breaking Original Research Session</td>
<td>Convention Center, Room 107-108</td>
</tr>
<tr>
<td>5:00 pm – 6:00 pm</td>
<td>ADSA Dairy Foods Division Council Meeting</td>
<td>Convention Center, Room 104</td>
</tr>
<tr>
<td>5:30 pm – 6:00 pm</td>
<td>ADSA-SAD Quiz Bowl Final Round</td>
<td>Convention Center, Room 203</td>
</tr>
<tr>
<td>7:00 pm – 8:30 pm</td>
<td>2008 ADSA-ASAS Opening Session &amp; ASAS Centennial Celebration</td>
<td>Convention Center, Sagamore Ballroom 3, 4, 5</td>
</tr>
<tr>
<td>8:30 pm – 10:00 pm</td>
<td>2008 ADSA-ASAS Opening Reception</td>
<td>Convention Center, 500 Ballroom &amp; Reception Rooms</td>
</tr>
</tbody>
</table>
Tuesday, July 8

6:30 am – 8:00 am  
UI Breakfast  
Marriott, Ballroom 3 & 4

6:30 am – 8:00 am  
ADSA Production Division Extension Breakfast  
Westin, State

6:30 am – 5:15 pm  
Registration Open  
Convention Center, E. Maryland St. Lobby

7:00 am – 8:15 am  
ADSA-SAD Exhibit Set-Up  
Convention Center, Exhibit Hall CDE

7:00 am – 8:00 am  
Kentucky Breakfast  
Marriott, Ballroom 7

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

7:30 am – 6:00 pm  
Commercial Exhibits & ADSA-SAD Exhibits Open  
Convention Center

7:30 am – 5:00 pm  
Job Resource Center  
Convention Center, Exhibit Hall CDE

8:00 am – 5:00 pm  
Hospitality Lounge Open  
Convention Center, Room 113

8:30 am – 9:15 am  
ADSA-SAD Business Meeting  
Convention Center, Room 203

9:30 am – 10:30 am  
ADSA-SAD Judging of Yearbooks and Scrapbooks, Annual Reports  
Convention Center, Room 201

9:30 am – 10:30 am  
ADSA-SAD Interviews for Outstanding Student and Advisor Awards  
Convention Center, Room 202

9:30 am – 10:45 am  
ADSA-SAD Activities Symposium  
Convention Center, Room 203

9:30 am – 6:00 pm  
Scientific Sessions  
Convention Center

10:30 am – 12:30 pm  
ARPAS Exam  
Convention Center, Room 115

11:00 am – 5:00 pm  
ADSA-SAD Undergraduate Paper Presentations  
Convention Center, Room 203

12:00 pm – 2:00 pm  
ASAS Past Presidents’ Luncheon  
Marriott, Santa Fe

12:30 pm – 1:00 pm  
ASAS Graduate Student Business Meeting  
Convention Center, Room 103

12:30 pm – 2:00 pm  
ADSA Past Presidents’ Luncheon  
Westin, State

12:30 pm – 2:00 pm  
ACAN Annual Meeting  
Convention Center, Room 115

12:30 pm – 2:00 pm  
ASAS Publications Committee Luncheon  
Marriott, Denver

12:30 pm – 2:00 pm  
Michigan State University Lunch  
Convention Center, Room 116

2:00 pm – 4:00 pm  
ARPAS Exam  
Convention Center, Room 115

2:00 pm – 3:30 pm  
Discover Steering Committee Meeting  
Convention Center, Conference Room East

2:00 pm – 5:30 pm  
The Southern Branch ADSA Symposium and Business Meeting  
Convention Center, Room 206

4:00 pm – 6:00 pm  
Exhibitor Reception  
Convention Center, Exhibit Hall CDE

5:00 pm – 7:00 pm  
Informal Calf Gathering  
Westin, Capitol 2

5:00 pm – 6:00 pm  
ADSA Town Hall Meeting  
Convention Center, Room 104

5:30 pm – 7:00 pm  
ASAS Award Winners Reception & Photo Session  
Marriott, Ballroom 6-10

7:00 pm – 8:30 pm  
ASAS Awards Program  
Marriott, Ballroom 5

8:00 pm – 11:00 pm  
Iowa State Reception  
Marriott, Ballroom 3 & 4

8:30 pm  
Matsushima Graduate Student Reception  
Marriott, Lincoln

8:30 pm – 12:30 am  
SAD Dance Party  
Westin, Capitol 3

9:00 pm  
Graduate Student Mixer  
Rock Bottom Brewery

Wednesday, July 9

6:15 am  
Fun Run  
Meet at the Convention Center

6:30 am  
Pancosma Breakfast  
Marriott, Denver

6:30 am – 8:00 am  
Virginia Tech Breakfast  
Westin, Council

6:30 am – 8:00 am  
ADSA Dairy Foods Division Extension Breakfast  
Westin, Cabinet

6:30 am – 8:00 am  
JDS Editorial Board Breakfast/Meeting  
Westin, Cameral

6:30 am – 8:00 am  
PSU Breakfast  
Marriott, Ballroom 7 & 8

7:00 am – 5:45 pm  
Registration Open  
Convention Center, E. Maryland St. Lobby

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

7:30 am – 5:00 pm  
Commercial Exhibits & ADSA-SAD Exhibits Open  
Convention Center, Exhibit Hall CDE

7:30 am – 5:00 pm  
Job Resource Center  
Convention Center, Exhibit Hall CDE

8:00 am – 5:00 pm  
Hospitality Lounge Open  
Convention Center, Room 113

8:30 am – 9:30 am  
ADSA-SAD Business Meeting–Election of Officers  
Convention Center, Room 203

9:30 am – 5:00 pm  
Scientific Sessions  
Convention Center

9:30 am – 11:00 am  
ADSA-SAD Student Career Symposium  
Convention Center, Room 203
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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>9:30 am – 11:30 am</td>
<td>ASAS Foundation Board of Trustees Meeting</td>
<td>Marriott, Santa Fe</td>
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<tr>
<td>9:30 am – 11:30 am</td>
<td>ARPS Exam.</td>
<td>Convention Center, Room 206</td>
</tr>
<tr>
<td>11:00 am – 2:00 pm</td>
<td>Spouse Event: Indianapolis Bus Tour and Lunch</td>
<td>Meet at the Convention Center</td>
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<tr>
<td>11:30 am – 12:30 pm</td>
<td>ADSA Production Division Business Meeting</td>
<td>Convention Center, Room 203</td>
</tr>
<tr>
<td>11:30 am – 12:30 pm</td>
<td>ADSA Dairy Foods Division Business Meeting</td>
<td>Convention Center, Room 121</td>
</tr>
<tr>
<td>11:45 am – 2:00 pm</td>
<td>ADSA-SAD Awards Luncheon</td>
<td>Convention Center, 500 Reception Room</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>NE ASAS/ADSA Business Meeting &amp; Awards Luncheon</td>
<td>Convention Center, Room 116</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA DF Division Milk Proteins &amp; Enzyme Committee</td>
<td>Convention Center, Room 202</td>
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<td>12:30 pm – 2:00 pm</td>
<td>ARPSAS Business Meeting.</td>
<td>Convention Center, Room 206</td>
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<td>12:30 pm – 2:00 pm</td>
<td>ASAS Graduate Student Lunch and Learn: An Industry Perspective on How to Get a Job</td>
<td>Convention Center, Room 201</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA DF Division Program Planning Luncheon</td>
<td>Convention Center, Room 202</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS Editor’s Luncheon</td>
<td>Marriott, Denver</td>
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<td>2:00 pm – 3:00 pm</td>
<td>ADSA-SAD Award and Club Photos</td>
<td>Convention Center, 500 Reception Room</td>
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<tr>
<td>2:30 pm – 3:30 pm</td>
<td>ADSA-SAD Committee Meeting – Old and New Officers and Advisors</td>
<td>Convention Center, Room 202</td>
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<tr>
<td>3:30 pm – 5:00 pm</td>
<td>ASAS JAS Forum (Division/Associate Editors and Authors)</td>
<td>Convention Center, Room 120</td>
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<td>5:00 pm – 6:00 pm</td>
<td>Racing to Indy: The ASAS Open Forum</td>
<td>Convention Center, Room 103</td>
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<td>5:00 pm – 6:00 pm</td>
<td>USDA-ARS Staff Update Session</td>
<td>Convention Center, Room 203</td>
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<tr>
<td>5:00 pm – 6:30 pm</td>
<td>ADSA Award Donor Dinner</td>
<td>Marriott, Ballroom 3 &amp; 4</td>
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<td>7:00 pm – 8:00 pm</td>
<td>ADSA Awards Program</td>
<td>Marriott, Ballroom 5</td>
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<tr>
<td>8:15 pm – 9:30 pm</td>
<td>2008 ADSA-ASAS Ice Cream Social</td>
<td>Marriott, Ballroom 6-10</td>
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<tr>
<td>8:15 pm – 9:30 pm</td>
<td>ADSA Foundation Auction</td>
<td>Marriott, Ballroom 6-10</td>
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**Thursday, July 10**

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<tbody>
<tr>
<td>6:30 am – 8:00 am</td>
<td>Purdue University Breakfast</td>
<td>Marriott, Ballroom 3 &amp; 4</td>
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<tr>
<td>7:00 am – 5:45 am</td>
<td>Registration Open</td>
<td>Convention Center, E. Maryland St. Lobby</td>
</tr>
<tr>
<td>7:30 am – 9:30 am</td>
<td>Poster Presentations</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>7:30 am – 5:00 pm</td>
<td>Job Resource Center</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>7:30 am – 3:00 pm</td>
<td>Commercial Exhibits Open</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Hospitality Lounge Open</td>
<td>Convention Center, Room 113</td>
</tr>
<tr>
<td>9:30 am – 10:30 am</td>
<td>ASAS Business Meeting</td>
<td>Convention Center, Room 203</td>
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<tr>
<td>9:30 am – 10:00 am</td>
<td>ADSA Business Meeting</td>
<td>Convention Center, Room 206</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>10:30 am – 5:00 pm</td>
<td>Mixed Models Workshop</td>
<td>Convention Center, Room 103</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA Board of Directors Meeting</td>
<td>Westin, House</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS Board of Directors Meeting</td>
<td>Marriott, Ballroom 9 &amp; 10</td>
</tr>
<tr>
<td>12:30 pm – 2:30 pm</td>
<td>Feed Analysis Consortium</td>
<td>Convention Center, Room 203</td>
</tr>
<tr>
<td>2:00 pm – 4:00 pm</td>
<td>ARPSAS Exam.</td>
<td>Convention Center, Room 115</td>
</tr>
<tr>
<td>3:00 pm – 6:00 pm</td>
<td>Commercial Exhibits Dismantle</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>4:30 pm – 6:00 pm</td>
<td>2008 Closing Reception</td>
<td>Convention Center, 500 Reception Room</td>
</tr>
<tr>
<td>6:00 pm</td>
<td>Animal Breeding and Genetics Graduate</td>
<td></td>
</tr>
<tr>
<td>7:00 pm – 9:00 pm</td>
<td>CSREES NRI Animal Reproduction PD Reception</td>
<td>Marriott, Ballroom 5</td>
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**Friday, July 11**

<table>
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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 am – 5:30 pm</td>
<td>CSREES NRI Animal Reproduction PD Meeting</td>
<td>Marriott, Ballroom 1 &amp; 2</td>
</tr>
<tr>
<td>8:30 am – 10:30 am</td>
<td>ADSA-ASAS Joint Executive Committee Breakfast</td>
<td>Marriott, Denver</td>
</tr>
<tr>
<td>8:00 am – 5:15 pm</td>
<td>Registration Open</td>
<td>Convention Center, E. Maryland St. Lobby</td>
</tr>
<tr>
<td>8:30 am – 11:30 am</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
</tr>
<tr>
<td>8:30 am – 11:30 am</td>
<td>Mixed Models Workshop</td>
<td>Convention Center, Room 103</td>
</tr>
<tr>
<td>8:30 am – 5:00 pm</td>
<td>Triennial Lactation Symposium</td>
<td>Convention Center, Room Sagamore 3</td>
</tr>
</tbody>
</table>
ADSA Student Affiliate Division Program

SAD Special Events

Scheduling and locations are subject to change. Please check the onsite newsletter each morning for changes.

Sunday, July 6

*SAD Speedway Tour*
12:30 pm – 2:45 pm
*Meet in the Hampton Inn lobby*
Tour begins at 1:15 pm. Students can register for one of two tours: The Grounds Tour ($25) includes a behind-the-scenes look at the track facilities and a ride around the track. The Hall of Fame Museum ($3) is a self-guided tour of the Indy 500 museum.

*SAD Night at the Indianapolis Indians Ballpark*
3:30 pm – 8:00 pm
*Meet in the Hampton Inn lobby*
Event includes picnic dinner and your ticket to the ballpark. Meet in the lobby of the Hampton Inn at 3:30 pm to walk as a group to the ballpark. Event begins at 4:00 pm with a picnic at the ballpark that includes food and drinks. First pitch is at 5:00 pm.

Monday, July 7

*SAD Midday Mixer*
12:00 pm – 1:00 pm
*Convention Center, Room 117*
Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends. Lunch includes pizza, salad, and drinks. Registration is limited to undergraduate students and advisors.

*SAD-Dairy Quiz Bowl*
1:00 pm – 6:00 pm
*Convention Center, Rooms 202 and 203*
On Monday, 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 2008 Dairy Quiz Bowl Winning Team.

Tuesday, July 8

*SAD Dance Party*
8:30 pm – 12:30 am
*Westin Indianapolis (ADSA Headquarters Hotel), Capitol 3*
*Ticket Price: $5.00 (free for undergrads)*
Rock the night away with old and new friends at the hottest dance party in Indy on Tuesday night! The dance floor will be packed as the crowd rocks, two-steps, and line dances their way from the first song to the last. Cash bar and free snacks will be available. This event is open to all meeting attendees, including students, advisors, and anyone else looking for a fun evening. Primary sponsors: the Dairy Clubs of ADSA.

Wednesday, July 9

*SAD Awards Luncheon*
11:45 am – 2:00 pm
*Convention Center, 500 Reception Room*
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.
**SAD Schedule of Events**

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

### Sunday, July 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:30 pm – 2:45 pm</td>
<td>SAD Speedway Tour.</td>
<td>Meet in the Hampton Inn lobby</td>
</tr>
<tr>
<td>3:00 pm – 5:00 pm</td>
<td>Registration Open (preregistered, badge and material pick-up only)</td>
<td>Convention Center, E. Maryland St. Lobby</td>
</tr>
<tr>
<td>3:30 pm – 8:00 pm</td>
<td>SAD Night at the Indianapolis Indians Ballpark.</td>
<td>Meet in the Hampton Inn lobby</td>
</tr>
</tbody>
</table>

### Monday, July 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Student Dairy Clubs Set Up Exhibits</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>10:00 am – 11:00 am</td>
<td>SAD Officers and Advisor Meeting</td>
<td>Convention Center, Room 201</td>
</tr>
<tr>
<td>11:00 am – 7:00 pm</td>
<td>Registration Open.</td>
<td>Convention Center, E. Maryland St. Lobby</td>
</tr>
<tr>
<td>11:00 am – 12:00 pm</td>
<td>SAD Quiz Bowl Officials Meeting.</td>
<td>Convention Center, Room 201</td>
</tr>
<tr>
<td>11:30 am – 12:00 pm</td>
<td>SAD Quiz Bowl Seating Test.</td>
<td>Convention Center, Room 202</td>
</tr>
<tr>
<td>12:00 pm – 1:00 pm</td>
<td>ADSA-SAD Midday Mixer.</td>
<td>Convention Center, Room 116</td>
</tr>
<tr>
<td>1:00 pm – 5:00 pm</td>
<td>ADSA-SAD Quiz Bowl Seating/Preliminary Rounds</td>
<td>Convention Center, Rooms 202 &amp; 203</td>
</tr>
<tr>
<td>5:30 pm – 6:00 pm</td>
<td>ADSA-SAD Quiz Bowl Final Round.</td>
<td>Convention Center, Room 203</td>
</tr>
<tr>
<td>7:00 pm – 8:30 pm</td>
<td>2008 ADSA-ASAS Opening Session &amp; ASAS Centennial Celebration</td>
<td>Convention Center, Sagamore Ballroom 3, 4, 5</td>
</tr>
<tr>
<td>8:30 pm – 10:00 pm</td>
<td>2008 ADSA-ASAS Opening Reception</td>
<td>Convention Center, 500 Ballroom &amp; Reception Rooms</td>
</tr>
</tbody>
</table>

### Tuesday, July 8

<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, E. Maryland St. Lobby</td>
</tr>
<tr>
<td>7:00 am – 8:15 am</td>
<td>ADSA-SAD Exhibit Set-Up.</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>7:30 am – 9:30 am</td>
<td>Poster Presentations.</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>7:30 am – 6:00 pm</td>
<td>Commercial Exhibits &amp; ADSA-SAD Exhibits Open.</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>8:30 am – 9:15 am</td>
<td>ADSA-SAD Business Meeting.</td>
<td>Convention Center, Room 203</td>
</tr>
<tr>
<td>9:30 am – 10:30 am</td>
<td>ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports.</td>
<td>Convention Center, Room 201</td>
</tr>
<tr>
<td>9:30 am – 10:30 am</td>
<td>ADSA-SAD Interviews for Outstanding</td>
<td>Convention Center, Room 202</td>
</tr>
<tr>
<td>9:30 am – 10:45 am</td>
<td>ADSA-SAD Activities Symposium.</td>
<td>Convention Center, Room 203</td>
</tr>
<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, Room 203</td>
</tr>
<tr>
<td>4:00 pm – 6:00 pm</td>
<td>Exhibitor Reception.</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>5:00 pm – 6:00 pm</td>
<td>ADSA Town Hall Meeting.</td>
<td>Convention Center, Room 104</td>
</tr>
<tr>
<td>8:30 pm – 12:30 am</td>
<td>SAD Dance Party.</td>
<td>Westin, Capitol 3</td>
</tr>
</tbody>
</table>

### Wednesday, July 9

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>6:15 am</td>
<td>Fun Run.</td>
<td>Meet at the Convention Center</td>
</tr>
<tr>
<td>7:00 am – 5:45 pm</td>
<td>Registration Open.</td>
<td>Convention Center, E. Maryland St. Lobby</td>
</tr>
<tr>
<td>7:30 am – 9:30 am</td>
<td>Poster Presentations.</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>7:30 am – 5:00 pm</td>
<td>Commercial Exhibits &amp; ADSA-SAD Exhibits Open.</td>
<td>Convention Center, Exhibit Hall CDE</td>
</tr>
<tr>
<td>8:30 am – 9:30 am</td>
<td>ADSA-SAD Business Meeting–Election of Officers.</td>
<td>Convention Center, Room 203</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 Symposium.</td>
<td>Convention Center, Room 203</td>
</tr>
<tr>
<td>11:45 am – 2:00 pm</td>
<td>ADSA-SAD Awards Luncheon.</td>
<td>Convention Center, 500 Reception Room</td>
</tr>
<tr>
<td>2:00 pm – 3:00 pm</td>
<td>ADSA-SAD Award and Club Photos.</td>
<td>Convention Center, 500 Reception Room</td>
</tr>
</tbody>
</table>
2:30 pm – 3:30 pm ADSA-SAD Committee Meeting – Old and New Officers and Advisors Convention Center, Room 202
7:00 pm – 8:00 pm ADSA Awards Program Marriott, Ballroom 5
8:15 pm – 9:30 pm 2008 ADSA-ASAS Ice Cream Social Marriott, Ballroom 6-10
8:15 pm – 9:30 pm ADSA Foundation Auction Marriott, Ballroom 6-10

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7:00 am – 5:45 pm Registration Open Convention Center, E. Maryland St. Lobby
7:30 am – 9:30 am Poster Presentations Convention Center, Exhibit Hall CDE
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3:00 pm – 6:00 pm Commercial Exhibits Dismantle Convention Center, Exhibit Hall CDE
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Physiology and Endocrinology: The Physiology of Gestation and the Post-Partum Interval
Production, Management, and the Environment: Disease, Management and Environment
SYMPOSIUM: Ruminant Nutrition: Glycerin as a Feed for Ruminants.
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Animal Health: General
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ADSA Dairy Foods Division
Schedule of Events

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5:00 pm – 6:00 pm  ADSA Dairy Foods Division Council Meeting, Convention Center Room 104

Tuesday, July 8

7:30 am – 9:30 am  Posters: Cheese I, Convention Center Exhibit Hall CDE (page 65)
9:30 am – 12:00 pm  Graduate Student Paper Competition: National ADSA Dairy Foods Division, Convention Center Room 121 (page 83)
9:30 am – 12:00 pm  Dairy Food Chemistry and Microbiology, Convention Center Room 120 (page 81)
1:30 pm – 5:00 pm  SYMPOSIUM: Advances in Low Fat Cheese Research (Sponsored by DMI Inc.), Convention Center Room 121 (page 89)

Wednesday, July 9

7:30 am – 9:30 am  Posters: Milk, Dairy Food Chemistry and Microbiology, Convention Center Exhibit Hall CDE (page 101)
9:30 am – 10:30 am  ADSA Foundation Scholar Lecture – Dairy Foods, Convention Center Room 121 (page 114)
10:30 am – 11:30 am  Danisco International Dairy Science Award Lecture, Convention Center Room 121 (page 123)
11:30 am – 12:30 pm  ADSA Dairy Foods Division Business Meeting, Convention Center Room 121
12:30 pm – 2:00 pm  ADSA DF Division Milk Proteins & Enzymes Committee, Convention Center Room 202
12:30 pm – 2:00 pm  ADSA Dairy Foods Program Planning Meeting, Convention Center Room 120
2:00 pm – 5:00 pm  SYMPOSIUM: Changes and Challenges of Probiotics in Dairy Products, Convention Center Room 121 (page 128)

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7:30 am – 9:30 am  Posters: Dairy Products and Processing I, Convention Center Exhibit Hall CDE (page 136)
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2:00 pm – 5:00 pm  SYMPOSIUM: Emerging Nonthermal Food Processing Technologies – Their Potential in Dairy Systems, Convention Center Room 121 (page 162)
# ASAS Centennial Presentations Schedule

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<th>Time</th>
<th>Number</th>
<th>Presentation</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 pm</td>
<td>146</td>
<td>Development and current issues of a corn-based beef industry. L. R. Corah, Certified Angus Beef LLC</td>
<td>500 Ballroom</td>
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<td><strong>(500 Ballroom)</strong></td>
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<tr>
<td>3:40 pm</td>
<td>167</td>
<td>Role of industry leaders in addressing bioethical issues. J. W. Lauderdale, Lauderdale Enterprises Inc</td>
<td>Room 101–102</td>
</tr>
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<td><strong>(Room 101–102)</strong></td>
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</tr>
<tr>
<td>4:30 pm</td>
<td>151</td>
<td>Using grain and biomass for feed versus fuel. J. Lawrence, Iowa State University</td>
<td>500 Ballroom</td>
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## Wednesday, July 9

<table>
<thead>
<tr>
<th>Time</th>
<th>Number</th>
<th>Presentation</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 am</td>
<td>282</td>
<td>Historical review and future outlook of equine reproductive technology. D. Sharp, University of Florida</td>
<td>Room 104</td>
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<td></td>
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<td><strong>(Room 104)</strong></td>
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<tr>
<td>9:30 am</td>
<td>362</td>
<td>Animal science teaching: A century of excellence. D. S. Buchanan, North Dakota State University</td>
<td>Room 120</td>
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<td><strong>(Room 120)</strong></td>
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<td>9:30 am</td>
<td>345</td>
<td>Impact of animal science research on US goat production and predictions for the future. T. Sahlu,</td>
<td>Langston University</td>
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<td>American Institute for Goat Research, Langston University</td>
<td>Room 205</td>
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<tr>
<td>9:35 am</td>
<td>240</td>
<td>Animal behavior and well-being: What does the future hold? A. K. Johnson, Iowa State University</td>
<td>Room 203</td>
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<tr>
<td>9:35 am</td>
<td>255</td>
<td>History and future perspectives of bioethics in food animal agriculture. W. R. Stricklin, University of</td>
<td>Maryland</td>
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<td>Maryland (Room 101–102)</td>
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<tr>
<td>9:40 am</td>
<td>274</td>
<td>The history of growth biology research – A reflection on the episodic nature of science. T. Etherton,</td>
<td>Penn State University</td>
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<td>Pennsylvania (Sagamore Ballroom 5)</td>
<td><strong>(Sagamore Ballroom 5)</strong></td>
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<tr>
<td>9:40 am</td>
<td>298</td>
<td>Landmark studies in swine nutrition during the past century. G. L. Cromwell, University of Kentucky</td>
<td>Room 105–106</td>
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<td><strong>(Room 105–106)</strong></td>
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<tr>
<td>10:20 am</td>
<td>275</td>
<td>Future needs and directions in animal growth and development research. M. A. Mirando,</td>
<td>Cooperative State Research,</td>
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<td>Cooperative State Research, Education, and Extension Service, USDA (Sagamore Ballroom 5)</td>
<td>Education and Extension Service,</td>
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<td><strong>(Sagamore Ballroom 5)</strong></td>
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<tr>
<td>10:35 am</td>
<td>299</td>
<td>Nonruminant nutrition – A proud past but uncertain future. R. A. Easter, University of Illinois</td>
<td>Room 105–106</td>
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<tr>
<td>2:00 pm</td>
<td>428</td>
<td>History of extension. J. Paterson, Montana State University, Bozeman, MT.</td>
<td>Room 109–110</td>
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<td>441</td>
<td>Historical review and future outlook of equine nutrition. H. Hintz, Cornell University</td>
<td>Room 104</td>
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<tr>
<td>2:00 pm</td>
<td>493</td>
<td>Impacts of animal science research on U.S. sheep production and predictions for the future. C. J.</td>
<td>Texas AgriLife Research</td>
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<td>Lupton, Texas AgriLife Research (Room 107–108)</td>
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<td>2:05 pm</td>
<td>377</td>
<td>Animal behavior as a discipline within the American Society of Animal Science: One hundred years of</td>
<td>University of Kentucky</td>
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<td>change and promise. W. R. Stricklin, University of Maryland (Room 101–102)</td>
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<tr>
<td>2:05 pm</td>
<td>414</td>
<td>Evolution of companion animals – A perception shift. L. P. Case, University of Illinois and AutumnGold</td>
<td>Consulting (Room 105–106)</td>
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<td>2:30 pm</td>
<td>429</td>
<td>Evolution of delivery methods. M. Hutjens, University of Illinois</td>
<td>Room 109–110</td>
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<tr>
<td>3:00 pm</td>
<td>430</td>
<td>From 40 acres and a mule to today: Historical perspective of extension programming: HorseQuest.</td>
<td>E. A. Greene, University of Vermont</td>
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<td><strong>(Room 109–110)</strong></td>
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<tr>
<td>3:20 pm</td>
<td>431</td>
<td>DAIReXNET – Method of delivering extension programming for the dairy industry which transcends</td>
<td>University of Kentucky</td>
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<td>University of Kentucky</td>
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<td>3:40 pm</td>
<td>432</td>
<td>Beef Cattle Clearinghouse: An eXtension Website. R. Rasby, University of Nebraska</td>
<td>Room 109–110</td>
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<td>4:00 pm</td>
<td>433</td>
<td>Pork Information Gateway in eXtension. D. J. Meisinger, US Pork Center of Excellence</td>
<td>Iowa State University</td>
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<td><strong>(Room 109–110)</strong></td>
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<td>5:00 pm</td>
<td>422</td>
<td>The future of teaching and research in companion animal biology in departments of animal sciences.</td>
<td>J. McNamara, Washington State University</td>
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<td>J. McNamara, Washington State University</td>
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Thursday, July 10

10:30 am  544  Historical perspective on the advances in forage research. J. Burns, USDA-ARS and North Carolina State University (Room 104)

10:30 am  542  Developments and future outlook for preharvest food safety. S. P. Oliver, The University of Tennessee (Room 204)

10:30 am  546  History and future outlook of equine science teaching programs. C. H. Wood, University of Kentucky (Sagamore Ballroom 2)

10:30 am  552  Historical perspective on lactation biology. R. S. Kensinger, Oklahoma State University (Sagamore Ballroom 6)

10:30 am  566  Future research in physiology and endocrinology. G. E. Seidel, Colorado State University (Room 205)

11:00 am  545  Research and extension needs in forage utilization in the future. F. M. Rouquette Jr., Texas AgriLife Research, Texas A&M System (Room 104)

11:15 am  543  Developments and future outlook for postharvest food safety. J. Sofos, Colorado State University (Room 204)

11:15 am  553  Lactation biology for the 21st century. J. J. Loor, University of Illinois (Sagamore Ballroom 6)

2:00 pm  605  The promise of proteomics in animal science. J. D. Lippolis, National Animal Disease Center, USDA-ARS (Sagamore Ballroom 1)

2:00 pm  622  Animal breeding and the *Journal of Animal Science*: A century of co-evolution. W. Hohenboken, Virginia Polytechnic Institute and State University and Oregon State University (Sagamore Ballroom 4)

2:00 pm  688  A century of pioneers and progress in meat science leads to new frontiers. D. H. Beermann, University of Nebraska (Room 120)

2:00 pm  713  Development of cattle estrus and breeding management. J. W. Lauderdale, Lauderdale Enterprises Inc. (Room 205)

2:05 pm  672  The impact of current global challenges in the animal agricultural industry. A. Tewolde, Inter American Institute for Cooperation on Agriculture – IICA (Room 101–102)

3:15 pm  692  Current and future meat science research needs. T. H. Powell, American Meat Science Association (Room 120)

3:30 pm  608  Contributions in the *Journal of Animal Science* to understanding cattle metabolic and digestive disorders. M. L. Galyean, Texas Tech University (Sagamore Ballroom 1)

3:45 pm  627  Future needs in animal breeding. R. D. Green, Pfizer Animal Genetics (Sagamore Ballroom 4)

Friday, July 11

8:30 am  795  Discovery and application of energetic principles to feeding systems for beef cattle. C. Ferrell, USDA, ARS, US Meat Animal Research Center (Sagamore Ballroom 4)

9:00 am  796  Discovery and application of energetic principles to feeding systems for beef cattle: Use of dynamic models. J. W. Oltjen, University of California (Sagamore Ballroom 4)
Dairy herd size and herd expansion are related to dairy cow mortality in Southeastern US dairy herds. G. W. Rogers¹, J. B. Cooper*, and J. S. Clay², ¹The University of Tennessee, Knoxville, ²Dairy Records Management Systems, Raleigh, NC.

Genetic polymorphism of lactoferrin gene and association with mastitis in Holstein cows. J. B. Cheng¹, J. Q. Wang*¹, D. P. Bu¹, G. L. Liu¹, C. G. Zhang¹, X. L. Dong¹, H. Y. Wei¹, L. Y. Zhou¹, and K. L. Liu¹, ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, ²College of Animal Science and Technology of Yangzhou University, Yangzhou, China.

Photonic plasmid stability of transformed Salmonella typhimurium using Stanford Photonic imaging and three plasmid types. K. Moulton*, P. Ryan¹, D. Moore¹, S. Laird¹, J. Curbelo¹, D. Lay¹, and S. Willard¹, ¹Mississippi State University, Mississippi State, ²USDA-ARS, Livestock Behavior Research Unit, West Lafayette, IN.

Seasonal variation of mortality rate in dairy cows of the Po Valley (Italy). A retrospective study from 2001 to 2006. A. Vitali¹, L. Bertocchi², N. Lacetera*, U. Bernabucci, A. Cuteri¹, M. Guerini¹, and A. Nardone¹, ¹Dipartimento di Produzioni Animali, Viterbo, Italy, ²Istituto Zooprofilattico Sperimentale Lombardia-Emilia Romagna, Brescia, Italy, ³Osservatorio Epidemiologico Veterinario Regione Lombardia, Brescia, Italy.

Monitoring body temperature of postpartum dairy cows using an intravaginal device. R. R. Peters¹, B. Erze*, L. A. Born¹, F. Siewerdt¹, and M. E. lager², ¹University of Maryland, College Park, ²Mid-Maryland Dairy Veterinarians, Hagerstown, MD.

A data exchange format and national database for producer-recorded health event data from on-farm management software. J. B. Cole, D. J. Null*, and L. R. Bacheller, USDA-ARS-BA-ANRI-AIPL, Beltsville, MD.

Dexamethasone administration increased bovine lymphocyte clock gene expression in vitro and in vivo. S. S. Pozzo*, M. K. Rankin, and T. F. Gressley, University of Delaware, Newark.


Comparison of minimum inhibitory concentrations of Staphylococcus aureus obtained from clinical and subclinical cases of mastitis. L. Oliveira*¹, P. Ruegg¹, H. Langoni², and M. D. Apparao¹, ¹University of Wisconsin, Madison, ²FMVZ - UNESP, Botucatu, SP, Brazil.

Comparison of in-vitro MIC’s of gram positive pathogens isolated from cases of subclinical and clinical mastitis. M. D. Apparao¹, P. L. Ruegg*, A. Lago², S. Godden², R. Bey², R. Dingwell², and K. Leslie¹, ¹University of Wisconsin, Madison, ²University of Minnesota, St. Paul, ³University of Guelph, Guelph, ON, Canada.

Nystatin, pathogen-associated molecular patterns and bovine neutrophil activation. M. Worku* and A. Morris, North Carolina A&T State University, Greensboro.

Macrolide and lincosamide resistance in Staphylococci and Streptococci isolated from quarters with persistent subclinical mastitis. M. D. Apparao, P. L. Ruegg*, and H. Khatib, University of Wisconsin, Madison.


Dairy Foods
Cheese I
Exhibit Hall CDE

Sensory and microbiological properties of cheddar cheese made with different fat content. M. A. Drake1, C. J. Brighton2, D. J. McMahon2, and J. R. Broadbent2*, 1North Carolina State University, Raleigh, 2Utah State University, Logan.


Evaluation of mineral compositions in reduced-fat and full-fat caprine milks and their Cheddar-type cheeses. W. Nouira*, T. H. Terrill, and Y. W. Park, Fort Valley State University, Fort Valley, GA.

The effect of aging on low, reduced, and full fat cheddar cheese on texture. N. R. Rogers*, M. A. Drake, and E. A. Foegeding, North Carolina State University, Raleigh.

Survey of the fatty acid profile including cis-9, trans-11 conjugated linoleic acid of some Oklahoma cow cheeses. G. Davila El Rassi* and V. Banskalieva, Oklahoma State University, Stillwater.

Mapping consumer preferences for mild cheddar cheese. S. L. Drake1*, P. D. Gerard2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Clemson University, Clemson, SC.

Manufacture of cheddar cheese with added sodium gluconate. C. Phadungath* and L. E. Metzger2, 1University of Minnesota, St Paul, 2South Dakota State University, Brookings.

Changes in residual sugar and water-soluble organic acids during ripening of Cheddar cheese with added sodium gluconate. C. Phadungath*1 and L. E. Metzger2, University of Minnesota, St Paul, 2South Dakota State University, Brookings.

Flavor chemistry of cheddar cheeses with varying fat contents. R. E. Miracle*1, D. J. McMahon2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Utah State University, Logan.


Characterization of organic acid and carbohydrate profiles of commercial Swiss cheese samples. H. Zhang* and L. E. Metzger, South Dakota State University, Brookings.

Surface roughness affects the formation of calcium lactate crystals on Cheddar cheese. P. Rajbhandari*, C. Ogg, and P. S. Kindstedt, University of Vermont, Burlington.

Influence of native casein concentrates on process cheese texture. P. Salunke* and L. E. Metzger, South Dakota State University, Brookings.

The effect of culture combinations on swiss cheese flavor quality. N. A. Kocaoglu-Vurma*1, A. Eliardi1, M. A. Drake2, L. E. Rodriguez-Saona1, and W. J. Harper1, 1The Ohio State University, Columbus, 2North Carolina State University, Raleigh.

Iodine content in sheep and goat cheese produced in Sardinia (Italy). G. Pulina*1, F. Aghini-Lombardi2, M. Frigeri2, G. Battacone2, R. Rubattu1, G. Garzella2, L. Grasso2, and A. Nudda1, 1University of Sassari, Sassari, Italy, 2University of Pisa, Pisa, Italy, 3AGRIS Sardegna, Olmedo Loc. Bonassai, Sassari, Italy.

Three-dimensional microscopy using stereoscopy applied to scanning electron microscopy imagery. M. Caccamo*, G. Impoco2, L. Tuminello1, and G. Licitra*1, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2IPLAB, Catania University, Catania, Italy, 3D.A.C.P.A., Catania University, Catania, Italy.
Prediction of curd moisture content by near infrared light scattering over a range of stirring speed and cutting intensity during cheese-making. M. J. Mateo*, D. J. O’Callaghan1, C. D. Everard1, C. P. O’Donnell1, C. C. Fagan2, M. Castillo1, and F. A. Payne1, 1Moorepark Food Research Centre, Teagasc, Fermoy, Cork Ireland, 2University College of Dublin, Dublin, Ireland, 3University of Kentucky, Lexington.

Effect of various starches on the properties of a processed Swiss-type cheese product. M. C. M. Soledad* and W. J. Harper, The Ohio State University, Columbus.

Influence of comminuting curd on curd particle size, moisture content and cohesiveness of 50%-reduced fat cheddar cheese. D. J. McMahon* and C. Brothersen, Utah State University, Logan.

Preparation of low fat fresh panela type cheese with ω-3 fatty acid. E. Paz-Gamboa*, M. Montero-Lagunes1, S. Cruz-Diaz1, M. Esquivel-Vera1, H. S. Garcia-Galindo2, C. E. Martinez-Sánchez2, and E. Herman-Lara1, 1Instituto Tecnologico de Tuxtepec, Tuxtepec, Mexico, 2Instituto Tecnologico de Veracruz, Veracruz, Mexico, 3Campo Experimental La Posta, Veracruz, Mexico.

Extension Education
Exhibit Hall CDE


A single fleeces test method improves premium wool traits in range sheep flock. T. Wuliji*, T. Borda2, H. Glimp1, L. Gome-Rayaa, and W. Rauw1, 1University of Nevada, Reno, 2Borda Ranch, Fernley, NV.

Minimum sampling requirement for prediction of hay forage quality from monoculture or mixed grass fields. R. S. Milliken1, M. S. Gadberry1, E. B. Kegley*, J. A. Jennings2, and J. T. Richeson1, 1University of Arkansas Division of Agriculture Cooperative Extension Service, Marshall, 2University of Arkansas Division of Agriculture Cooperative Extension Service, Little Rock, 3University of Arkansas Division of Agriculture, Fayetteville.

Demonstration of a formulation approach to include corn-milling co-products in lactating dairy rations. K. J. Machacek* and P. J. Kononoff, University of Nebraska, Lincoln.

The Virginia Phosphorus Feeding Incentive Program. C. C. Stallings*, K. F. Knowlton, R. E. James, M. D. Hanigan, B. G. Cox, J. L. Welsh, T. M. Horn, S. M. Puffenbarger, and M. C. Scott, Virginia Polytechnic Institute and State University, Blacksburg.


Organic dairy short course for ag professionals. D. G. Johnson*, J. M. Moynihan2, M. J. Forbord1, and L. Paine1, 1University of Minnesota, Morris, 2Minnesota Department of Agriculture, St Paul, MN, 3Sustainable Farming Association of Minnesota, Sturbeck, MN, 4Wisconsin Department of Agriculture, Trade and Consumer Protection, Madison, WI.

Good dairy sanitation workshops in Central American countries. G. Pena*, M. West1, D. Orellana2, A. Young1, and D. E. Diaz3, 1Utah State University, Logan, 2USDA-FAS, Washington, DC.

Spanish language training on proper milking techniques in the state of Utah. D. E. Diaz*, G. Penca, C. Israelson, J. Barnhill, and A. Young, Utah State University, Logan.

Food Safety
Exhibit Hall CDE

Crisis communications: The dairy plan. K. E. Olson*, S. L. Stevens2, and D. Pelzer2, 1KEO Consulting, Schaumburg, IL, 2Dairy Management, Inc, Rosemont, IL.

Determination of antibiotic residues in farm hens eggs. H. F. Ahmed*, I. M. Aman1, and S. E. Zahran2, 1Kafre El-Sheikh University, Kafre El-Sheikh, Egypt, 2Animal Health Research Institute, Tanta, Egypt.
Intestinal microbial effects of yeast products on weaned and transport stressed pigs. S. Weedman*1, M. Rostagno2, J. Patterson1, A. Kiess1, and S. Eicher2, 1Purdue University, West Lafayette, IN, 2USDA-ARS, West Lafayette, IN.

Identification of risk factors associated with increased coliform counts in bulk milk. J. Pantoja*, C. Hulland, D. Reinemann, and P. Ruegg, University of Wisconsin, Madison.


Effects of the dicarboxylic acids malate and fumarate on ruminal culture in vitro fermentations. T. R. Callaway*, T. S. Edrington, R. C. Anderson, N. Krueger, and D. J. Nisbet, ARS, Food and Feed Safety Research Unit, College Station, TX.

**Forages and Pastures I**


Influence of cutting time and swath type on intake, site, and ruminal metabolism of alfalfa hay. T. Shenkoru, H. Hussein, and T. Wuilii*, University of Nevada, Reno.

Plant maturity and genetic influences on in vitro NDF digestibility of alfalfa. A. Palmonari*1, N. Brogna1, G. Rossi2, I. Fusaro2, G. Biagi1, and A. Formigoni1, 1DIMORFIPA Università di Bologna, Ozzano dell’Emilia, Bologna, Italy, 2Dipartimento di Scienze Degli Alimenti Università di Teramo, Teramo, Italy.

Effect of a lactic acid-lactobacillus product and bale moisture on forage quality, and voluntary intake and digestibility of crabgrass hay by lambs. L. Hardin1, A. Killion1, J. Caldwell1, K. Coffey*1, D. Philipp1, and W. Coblenz1, 1University of Arkansas, Fayetteville, 2USDA-ARS, Marshfield, WI.


Chemical composition and nutritive value of forage silages produced in the Italian Po Valley. S. Colombini*1, L. Rapetti1, N. Rizzi2, P. Amodeo2, G. Galassi1, and G. M. Crovetto1, 1University of Milan, Milan, Italy, 2Dairy Farmers Association of Lombardy, Crema, Italy.


The use of hybrid or native corn byproducts for the manufacture of nutritional blocks or silages: A simulation model. J. M. Tapia-Gonzalez*1, A. Tewolde-Medhin1, W. E. Grant3, J. C. Martinez-González2, H. Diaz-Solís4, A. Moreno-Valdéz5, O. D. Montañez-Valdez1, and G. Rocha-Chavez1, 1CUSUR, Univ de Guadalajara, Cd. Guzmán, Jalisco, México, 2Unidad Académica Multidisciplinar Agropecuaria y Ciencias. UAT, Cd. Victoria, Tamaulipas, México, 3Texas A&M University, College Station, 4Area de Recursos Naturales, UAAA, Saltillo Coahuila, México, 5Area de Recursos Naturales, Instituto Tecnológico de Ciudad Victoria, Cd. Victoria, Tamaulipas, México.


Effect of length of time ensiled on dry matter, starch and fiber digestibility in whole plant corn silage. C. M. Hallada*, D. A. Sapienza2, and D. Taysom1, Vita Plus Corporation, Madison, WI, 1Sapienza Analytica, LLC, Slater, IA, 2Dairyland Laboratories Inc., Arcadia, WI.

Effect of month of sample submittal on corn silage nutrient fractions, starch availability, NDF digestibility, and fermentation profiles measured at a commercial forage-testing laboratory. R. T. Ward*1 and M. B. de Ondarza2, 1University of Wisconsin, Madison, 2USDA-ARS Dairy Forage Research Center, Madison, WI, 3USDA-ARS, Ithaca, NY.

Streptococcus bovis as a silage inoculant: A second chance. F. E. Contreras-Govea*1, R. E. Muck2, and J. B. Russell1, 1University of Wisconsin, Madison, 2USDA-ARS Dairy Forage Research Center, Madison, WI, 3USDA-ARS, Ithaca, NY.
An evaluation of the effectiveness of *Lactobacillus buchneri* 40788 to improve the aerobic stability of corn silage in farm silos. L. J. Mari, R. J. Schmidt*, L. G. Nussio, C. M. Hallada, and L. Kung, Jr., 1University of Delaware, Newark, 2Vita Plus Corporation, Madison, WI, 3University of Sao Paulo, Piracicaba, SP, Brazil.

The effect of *Lactobacillus buchneri* 40788 or *Lactobacillus plantarum* MTD-1 on the fermentation and aerobic stability of corn silages ensiled at two dry matter contents. H. Wu*, R. J. Schmidt, E. E. McDonell, C. M. Klingerman, and L. Kung, Jr., University of Delaware, Newark.


Microbial inoculant effects on in situ ruminal dry matter and neutral detergent fiber disappearance of corn silage. K. E. Cowles* and M. R. Murphy, University of Illinois, Urbana, IL.

Impact of chloride fertilization and Silo-King® on the nutrient content, digestibility, and mycotoxin concentrations in corn silage. D. H. Kleinschmit*, D. P. Casper, and D. A. Spangler, Agri-King, Inc., Fulton, IL.

Graduate Student Paper Competition
ADSA Production Division Poster Competition
Exhibit Hall CDE

Ruminal and intestinal crude protein digestibility of triticale dried distillers grains with solubles. K. T. Wierenga*, G. B. Penner, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.


Effect of abomasal infusion of butterfat, long chain fatty acids or CLA on milk fatty acid composition and mammary tissue lipogenic gene expression in lactating cows. A. K. G. Kadegowda*, J. J. Loor, L. S. Piperova, P. Delmonte, and R. A. Erdman, 1University of Maryland, College Park, 2University of Illinois, Urbana, 3FDA, College Park, MD.

Production of Holstein and Jersey × Holstein cattle grazing annual ryegrass/white clover pasture. J. C. Lopes*, A. P. Vilela, K. A. Weigel, K. A. Albrecht, and D. K. Combs, University of Wisconsin, Madison.

Meat Science and Muscle Biology
Exhibit Hall CDE

Effect of different moving devices at loading on incidence of downers, and carcass and meat quality in market weight pigs. J. A. Correa*, H. Gonyou, S. Torrey, N. Devillers, J. P. Laforest, and L. Faucitano, 1Laval University, Quebec City, QC, Canada, 2Prairie Swine Centre, Saskatoon, SK, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada, 4Agriculture & Ag-Food Canada, Sherbrooke, QC, Canada.

Identification of boar-tainted carcasses with an electronic nose. S. Ampuero, M. Amrhein, S. Dubois, and G. Bec*, 1Agroscope Liebefeld-Posieux, Research Station ALP, Posieux, Switzerland, 2Online Control LTD, Lausanne, Switzerland.


T111 Carcass and Longissimus dorsi characteristics of finishing pigs fed sweet potato (Ipomoea batatas [L.] Lam.) meal. S. Pietrosemoli*, O. E. Moron-Fuenmayor1, A. Paez1, and M. J. Villamíde1, Facultad de Agronomía, La Universidad del Zulia, Maracaibo, Venezuela, 2ETSIA. Universidad Politecnica de Madrid, Madrid, España.


T113 Comparisons of fatty acid composition in pork belly primary and secondary lean, and seam and subcutaneous fat. J. W. S. Yancey*, J. K. Apple, J. T. Sawyer1, M. S. Lee1, and J. C. Woodworth1, 1University of Arkansas Division of Agriculture, Fayetteville, 1Lonza, Inc., Allendale, NJ.

T114 Influence of gender and slaughter age on meat and subcutaneous fat quality of heavy pigs destined to high quality dry-cured hams. M. A. Latorre*, G. Ripoll1, L. Ario2, and B. Blanco1, Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain, 1Integraciones Porcinas S.L., Teruel, Spain, 2Jamones y Embutidos Alto Mijares S.L., Teruel, Spain.

T115 Carcass fatty acid composition of growing calves fed diets containing canola oil supplements. M. Eftekhari, K. Rezayazdi*, A. Nikkhah, and A. Nejati Javaremi, University of Tehran, Karaj-Tehran-Iran.


T118 Sensorial characteristics of beef from heifers fed with different lipid supplements in the finishing phase. M. C. A. Santana*, P. H. M. Dian1, R. A. Reis1, A. V. Pires2, G. Fiorentini1, A. F. Ribeiro1, M. A. A. Balsalobre1, and T. T. Berchielli1, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil, 3Bellman, Mirassol, São Paulo, Brazil.

T119 Carcass traits of low and high residual feed intake Nellore (Bos indicus) steers. R. C. Gomes*, R. S. Araujo2, E. Telles1, S. L. Silva1, R. D. Sainz2, and P. R. I. Leme1, University of Sao Paulo, Pirassununga, SP, Brazil, 2University of California, Davis.


T121 Finishing changes in bovine muscle fiber types as influenced by genetic group and slaughter weight. R. Mello*, A. C. De Queiroz*, M. H. De Faria1, P. B. Costa1, F. D. De Resende1, G. F. V. Bayão2, and C. A. Neves2, Universidade Federal de Viçosa, Viçosa, MG, Brazil, 1AFT, Colina, SP, Brazil.

T122 Meat cholesterol, saturated and unsaturated fatty acids of Bos indicus type feedlot heifers. M. P. De Oliveira1, M. De B. Arrigoni1, C. L. Martins1, E. Rodrigues1, D. D. Millen1, R. De. L. Pacheco2, L. M. N. Sarti1, R. S. Barducci1, J. P. S. T. Bastos1, T. M. Mariani1, S. R. Baldin1, T. C. B. da Silva1, and H. N. De Oliveira1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2Faculdade de Zootecnia/Unesp, Dracena, São Paulo, Brazil, 3Apoio FAPESP.

T123 Effects of implanting and feeding zilpaterol on performance, carcass characteristics and subprimal meat yields of fed cows. S. Neil*, J. A. Unruh, T. T. Marston1, J. R. Jaeger1, M. C. Hunt2, and J. J. Higgins3, 1PIC, Hendersonville, TN, 2Kansas State University, Manhattan, 3Kansas State University Agricultural Research Center, Hays.


T125 Influence of sarcomere length on aging and hydrodynamic pressure processing of beef muscle. B. Bowker*, J. Eastridge, E. Paroczay, and M. Solomon, USDA-ARS, Beltsville, MD.
Nonruminant Nutrition

Feed Additives

Exhibit Hall CDE


Effect of Eucheaena mexicana Schrad diets on nutrient digestibility and nitrogen metabolism for Wulong Goose. B. W. Wang*, M. A. Zhang, X. P. Wu, G. L. Liu, and X. H. Jia, Qingdao Nongye University, Qingdao, Shandong Province, China.

Feeding different levels of zearealenone on growth, vulva size, and organ weight in postweaning female pig. Z. B. Yang*, H. Zao1, C. C. Chen2, and F. Chi3,1Shandong Agricultural University, Taian, Shandong, PRC, 2Chaoyang University Technology, Taichuang, Taiwan, ROC, 3Oil Dri Corporation of America, Chicago, IL.


Live weight dependent responses to adding an enhanced milky flavor (Luctarom® Advance) to a piglet nursery feeding program. E. Roura*, G. Tedó, X. Puigvert, and I. Ipharraguerre, 1Lucta SA, R+D Feed Additives, Barcelona, Spain, 2Universitat de Girona, Girona, Spain.

Identification of the porcine umami taste receptor dimer responsible for the taste of amino acids. E. Roura*, R. Holt, and K. C. Klasing, 1Lucta SA, R+D Feed Additives, Barcelona, Spain, 2University of California, Davis.


Dietary supplementation of oregano essential oils on the performance of broilers under high altitude condition. L. Betancourt1, C. Ariza-Nieto2, F. Rodriguez2, V. Phandanouvong2, A. Padilla1, M. Hernandez1, M. Hume1, D. Nisbet1, and G. Afnanador-Tellez2, 1Universidad Salle, Bogota, Colombia, 2CORPOICA, Bogota, Colombia, 3USDA, ARS, FFSRU, College Station, TX.


Effect of dietary probiotic and/or prebiotic on humoral immune response of Ross broiler chickens. H. Ziaei*, M. A. Karimi Torshizi, M. Bashtani, H. Farhangfar, H. Naemipour, and A. Zeinali, 1Birjand University, Birjand, Iran, 2Tarbiat Modares University, Tehran, Iran.

Assessment of the antimicrobial activity of carvacrol, cinnamaldehyde and capsicum oleoresin in stomach, jejunum, and cecum digestive content of weaned pigs using fermentation assay. E. G. Manzanilla*, M. Anguita, S. Martin-Orúe, 1Universitat Autònoma de Barcelona, Spain, 2Panscosma Research, Geneva, Switzerland.

Effects of essential oils supplementation on growth performance, nutrient digestibility, blood characteristics, fecal noxious gas concentration and meat quality in growing-finishing pigs. J. S. Yoo*, J. H. Kim1, S. O. Shin, Y. Haung1, J. D. Kim1, I. C. Kim1, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2CJ CheilJedang, Seoul, Korea, 3National Institute of Animal Science, Korea.


Fecal-oral transmission from sow to piglet of a Bacillus based direct-fed microbial (Adsero™) and its effect on clostridial shedding. A. Baker*, E. Davis, J. D. Spencer, R. Moser, and T. Rehberger, 1Agtech Products, Inc., Waukesha, WI, 2JBS United, Inc., Sheridan, IN.


Pooled-analysis of data demonstrating the performance benefits of including mannan oligosaccharides in swine nursery diets. B. Corrigan*, D. Koehler, and G. Grinstead, Vita Plus Corporation, Madison, WI.

Development and validation of a mastication simulator. A. Woda*, A. Mishellany, J. P. Meunier, O. François, M. A. Péryon, 1Faculty of Odontology, Clermont Fd, France, 2Faculty of Pharmacy, Clermont Fd, France.

Effect of supplying mannan oligosaccharide (MOS) to pig diets on response to an immune challenge. I. F. Hung*, M. D. Lindemann I, G. L. Koehler, and G. Grinstead, 1Texas A&M University, Kingsville.

Alpha-linolenic acid exerts anti-inflammatory effect in 3T3-L1 adipocytes through mechanisms that involve activation of AMPK. K. M Ajuwon*, T. A Winters, B. Whisenhunt, and W. Banz, 1Purdue University, West Lafayette, IN, 2Southern Illinois University, Carbondale.


Bovine viral diarrhea virus, abnormal cervical mucous discharge and fertility in cows. S. Yavru*, M. Kale, M. S. Gulay, O. Yapıcı, O. Bulut, and A. Ata, 1Selçuk University, Konya, Turkey, 2Mehmet Akif Ersoy University, Burdur, Turkey.

Physiology and Endocrinology

Nutritional and Metabolic Effects on Growth, Reproduction and Lactation

Exhibit Hall CDE


L-carnitine stimulates the early postnatal myofiber formation in pig skeletal muscle. D. Loesel*, C. Kalbe, G. Nuernberg, and C. Rehfeldt, Research Institute for the Biology of Farm Animals, Dummerstorf, Germany.


T179 Effect of 17β-estradiol on distal colon contractions and L-arginine-NOS-cGMP-cGMP-PK1 pathway. A. Bulbul1, K. Altbunbas1, H. A. Celik1, G. Avci1, O. Yildiz-Gulay*1, and M. S. Gulay2, 1Afyon Kocatepe University, Afyonkarahisar, Turkey, 2Mehmet Akif Ersoy University, Burdur, Turkey.

T180 Effect of ovarian steroids on distal colon contractions and L-arginine-NOS-cGMP-cGMP-PK1 pathway. A. Bulbul1, A. Yagci2, K. Altbunbas1, H. A. Celik1, G. Avci1, O. Yildiz-Gulay*1, and M. S. Gulay2, 1Afyon Kocatepe University, Afyonkarahisar, Turkey, 2Mehmet Akif Ersoy University, Burdur, Turkey.

T181 Effect of diets containing soybean meal or canola meal on blood metabolites in early lactation Iranian Holstein cows. F. Hosseini, A. Heravi Moussavi*, M. Danesh Mesgaran, and J. Arshami, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

T182 Effects of carbohydrate source and processing on serum progesterone and insulin concentrations of dairy cattle. P. Moriel*1, T. S. Scatena1, O. G. Sa Filho1, R. F. Cooke2, and J. L. M. Vasconcelos1, 1FMVZ-UNESP, Botucatu, Brazil, 2University of Florida, Gainesville.


T184 The effects of prepartum 2,4-thiazolidinedione administration to dairy cows on energy balance, growth hormone, and insulin-like growth factor-I during the transition period. L. A. Winkelman*, K. L. Smith, R. M. Ehrhardt, and T. R. Overton, Cornell University, Ithaca, NY.

T185 The metabolic status during the dry period influences the ovulation of the first follicular wave postpartum in dairy cows. N. Castro*1,2, C. Kawashima1, H. A. van Dorland1, S. Richter1, I. Morel1, A. Miyamoto1, and R. M. Bruckmaier1, 1University of Bern, Bern, Switzerland, 2Las Palmas de Gran Canaria University, Arucas, Spain, 3Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan, 4Agroscope Liebefeld-Posieux, Posieux, Switzerland.

T186 Assessment of third-ventricle cerebrospinal fluid influences of appetite-regulating peptides. M. G. Thomas*, M. Amstalden2, D. M. Hallford1, G. A. Silver1, M. D. Garcia1, D. H. Keisler1, and G. L. Williams4, 1New Mexico State University, Las Cruces, 2Texas A&M University, College Station, 3University of Missouri, Columbia, 4Texas AgriLife, Beeville, TX.

T187 IGF-I modulation of GH and LH secretion in the pig. C. R. Barb and G. J. Hausman*, USDA, ARS, Russell Research Center, Athens, GA.

T188 Growth hormone directly stimulates insulin production from the bovine pancreatic islets. J. Feng1,2, F. C. Gwazdauskas1, and H. Jiang*1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Zhejiang University, Hangzhou, Zhejiang, China.

T189 Milk composition is not affected by retail milk labels regarding farm management practices. J. L. Vicini*1, T. D. Etherton2, P. M. Kris-Etherton2, J. M. Ballam1, R. D. Cady2, M. F. McGrath1, M. C. Lucy2, A. C. Fitzgerald2, T. D. Klusmeyer1, and M. F. Migliazzo1, 1Monsanto Co., LC, St. Louis, MO, 2Pennsylvania State University, University Park, 3University of Missouri, Columbia.


T191 Intake and ponderal development of dairy heifers fed sugar cane and different protein levels diets. J. M. Berni2, F. C. Gwazdauskas1, T. D. Ehrhardt, Y. R. Boisclair, and T. R. Overton, 1University of Missouri, Columbia, 2Texas A&M University, College Station.

T192 Effects of different ratios of nonfiber carbohydrate to ruminal degradable protein on the performance of Holstein cows in barley based diets. H. Rafiee1, A. Afzalzadeh1, A. Khadem1, and A. Asadi1, 1Dept of Anim. Sci. University of Tehran, Aboureihan Campus, Tehran , Iran, 2Dept of Anim. Sci. Isfahan University of Technology, Isfahan, Iran.

T193 An alternative low-starch compared with a traditional high-starch calf starter results in similar growth rate and rumen development at weaning. M. Vestergaard*, L. Puggaard, A. Kosiorewska, S. K. Jensen, N. B. Kristensen, and J. Sehested, Faculty of Agricultural Sciences, University of Aarhus, Foulum, Denmark.
Ruminant Nutrition
Fats – Dairy
Exhibit Hall CDE


Effect of dietary vegetable oil and antioxidant supplementation on dairy cattle performance and milk fat depression. M. He*, H. S. Xin, and L. E. Armentano, University of Wisconsin, Madison, China Agricultural University, Beijing, China.

Effect of close-up fat supplementation on first 90 days milk production of Holstein dairy cows. M. Danesh Mesgaran* and A. R. Heravi Mousavi, Dept. of Animal Science (Excellence Center for Animal Science), Ferdowsi University of Mashhad, Mashhad, Iran.


Milk fatty acid composition of dairy cows fed increasing amounts of linseed oil. C. Benchaar*, M. Eugène, C. Côrtes, A. V. Chaves, H. V. Petit, T. A. McAllister, A. D. Iwaasa, and P. Y. Chouniard, Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, Quebec, Canada, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada, laval University, Quebec, Canada.

Digestion, milk production, and milk composition of dairy cows fed increasing amounts of linseed oil. C. Benchaar*, M. Eugène, C. Côrtes, A. V. Chaves, H. V. Petit, T. A. McAllister, A. D. Iwaasa, and P. Y. Chouniard, Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, Quebec, Canada, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, Agriculture and Agri-Food Canada, Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada, laval University, Quebec, Canada.
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<tr>
<td>T210</td>
<td>Effects of increasing amounts of linseed oil on ruminal fermentation, protozoa counts, and forage in situ ruminal degradation in dairy cows. C. Benchara, M. Eugène, C. Cortés, A. V. Chaves, H. V. Petit, T. A. McAllister, A. D. Iwaasa, P. Y. Chouinard, *Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, Quebec, Canada, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada, Laval University, Quebec, Quebec, Canada.</td>
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<td>T212</td>
<td>Effects of feeding whole linseed to Lacaune dairy ewes on lactational performances and CLA and N3 fatty acids content of the milk. R. Casals, M. V. Pol, E. Albanell, X. Such, M. A. Bouattour, and G. Caja, Universitat Autònoma de Barcelona, Bellaterra, Spain.</td>
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<td>T215</td>
<td>Effects of dietary docosahexaenoic acid and free linoleic acid supplementation on fatty acid ratio in milk fat from dairy cows. S. J. Liu, J. Q. Wang, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.</td>
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<td>T216</td>
<td>Effects of feeding whole linseed to Lacaune dairy ewes on lactational performances and CLA and N fatty acids content of the milk. R. Casals, M. V. Pol, E. Albanell, X. Such, M. A. Bouattour, and G. Caja, Universitat Autònoma de Barcelona, Bellaterra, Spain.</td>
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<td>T217</td>
<td>Effects of differential supplementation of calcium salts of fatty acids (CSFAs) on dairy cows. F. T. Silvestre, T. S. M. Carvalho, J. E. P. Santos, and C. Nicolussi, 1,1,1,2,2-Pentane-1,2,3,4-tetrol, plasma, milk, and urine of dairy cows.</td>
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<td>T225</td>
<td>Effects of dietary fats on hepatic gene expression in transition dairy goats. A. Agazzi, G. Invernizzi, A. Campagnoli, M. Ferroni, A. Galmozzi, M. Crestani, and G. Savoini, Department of Veterinary Science and Technology for Food Safety, Milan, Italy, Department of Pharmacological Sciences, Milan, Italy.</td>
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<td>T226</td>
<td>Effects of degree of unsaturation of supplemental dietary fat on ruminal fermentation, nitrogen metabolism, and urea nitrogen recycling in dairy cows. T. Mutsvangwa, G. N. Gozho, and D. Kiran, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.</td>
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Ruminant Nutrition
Methods, Models and Other
Exhibit Hall CDE

T228 Reproductive performance of cows fed rolled flaxseed on two commercial dairies. N. R. Bork*, G. P. Lardy, J. W. Schroeder, K. A. Vonannahme, P. M. Fricke, K. B. Koch, M. L. Bauer, and K. G. Odde, 1North Dakota State University, Fargo, 2Utah State University, Logan, 3University of Wisconsin, Madison.

T229 Measurements of net portal flux of nitrogen (N) compounds in ruminants: First step of a meta-analysis. R. Martineau, I. Ortigues-Marty, J. Vernet, and H. Lapierre, 1Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2Institut National de la Recherche Agronomique, Thieux, St Genés Charnizay, France.


T231 Screening of ureases from a bovine rumen metagenomic library. K. L. Liu, J. Q. Wang*, D. P. Bu, S. G. Zhao, Y. X. Zhu, H. Y. Wei, L. Y. Zhou, and Z. Y. Dong, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Gansu Agricultural University, Gansu, China, 3State Key Laboratory of Microbial Resources, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China.


T233 The use of simultaneous models for estimate in vivo nutrient digestibility of alfalfa hay and barley grain. H. Jahani-Azizabadi, M. Danesh Mesgaran*, R. Valizadeh, and H. Nasiriroumghadam, Ferdowsi University of Mashhad, Mashhad, Iran.


T235 Rumen phosphorus metabolism in sheep. R. S. Dias, T. Soares, R. M. P. Pardo, J. C. Silva Filho, D. M. S. S. Vitti, E. Kebreab*, and J. France, 1University of Guelph, Guelph, Ontario, Canada, 2Centro de Energia Nuclear na Agricultura, Piracicaba, Sao Paulo, Brazil, 3Federal University of Lavras, Minas Gerais, Brazil, 4University of Manitoba, Winnipeg, Manitoba, Canada.


T237 Assessment of free amino acid supplementation on rumen microbial efficiency and nitrogen metabolism using a continuous culture system. M. A. Brooks*, J. H. Porter, and M. S. Kerley, University of Missouri, Columbia.

T238 Effect of pH on rumen fermentation and biohydrogenation of extruded soybean and linseed fatty acids in continuous culture. M. C. Fuentes, S. Calsamiglia, V. Fievez, and M. Blanch, 1UAB, Bellaterra, Spain, 2Ghent University, Belgium.

T239 Effect of pH and level of concentrate in the diet on biohydrogenation intermediates in a dual flow continuous culture. M. C. Fuentes*, S. Calsamiglia, and P. W. Cardozo, UAB, Bellaterra, Spain.

T240 Comparison of in vitro, in situ, and in vivo methodologies to assess nutrient digestibility in ruminants. L. E. Sims*, N. A. Pyatt, P. H. Doane, and S. S. Block, 1Oklahoma State University, Stillwater, 2ADMR Research Center, Decatur, IN.


T242 In situ dry matter degradation parameters of treated and untreated Sainfoin (Onobrachis vicifolia) a tanniferous legume forage. H. Khalilvandi*, K. Rezayazdi, M. Dehghan-Banadaki, N. Vahdani, and H. R. Khazanehei, University of Tehran, Karaj, Tehran, Iran.


T244 The effect of non fibre carbohydrate on in vitro first order NDF disappearance of alfalfa. M. Danesh Mesgaran*, F. Rezaii, and A. R. Heravi Mousavi, Ferdowsi University of Mashhad, Mashhad, Iran.
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T245  Ruminal and post-ruminal protein disappearance of high oil sunflower meal treated with formaldehyde or sodium hydroxide. T. Mohammadabadi, M. Danesh Megaran*, and M. R. Nasiri, Excellence Center for Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran.

T246  The effect of feed iodine supplementation on milk production traits in dairy goats. A. Nudda*, M. Decandia*, G. Epifani, G. Battacone, G. Spanu, and G. Pulina1, 2, *University of Sassari, Sassari, Italy; 2AGRIS Sardegna, Sassari, Italy.

T247  Comparison of procedures to detach particle-associated microbes from ruminal digesta in Rusitec fermenters. M. E. Martínez, M. J. Ranilla*, S. Jenkins, and K. D. Murphy1, 1Clemson University, Clemson, 2Virtus Nutrition, Lancaster, PA.

T248  Use of inter-organ glycerol fluxes to assess abdominal versus peripheral fat mobilization in transition dairy cows. M. Larsen and N. B. Kristensen*, 1Faculty of Agricultural Sciences, University of Aarhus, Tjele, Denmark.

T249  Bacterial diversity in rumen fluid samples collected via oral lavage or rumen cannula. J. Pisel, S. L. Lodge-Ivey*, J. Browne-Silva, and M. B. Horvath, New Mexico State University, Las Cruces.

T250  In vitro gas production kinetics of biofuels by-products. J. A. G. Azevedo1, 2, D. S. Pina1, N. K. P. Souza1, J. C. M. Lima1, A. S. Oliveira1, C. V. Xavier2, S. C. Valadares Filho2, and H. J. Fernandes*, 1Universidade Estadual de Santa Cruz - FAPESB, Ilhêus, Bahia, Brazil; 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.


T252  Correlation between UT-B mRNA abundance in ruminal epithelium and net portal fluxes to assess abdominal versus peripheral fat mobilization in transition dairy cows. B. A. Rojen*, P. K. Theil, M. Larsen, and N. B. Kristensen, 1Faculty of Agricultural Sciences, University of Aarhus, Tjele, Denmark.

T253  Hepatic metabolism of alcohols in freshening Holstein cows. B. M. L. Raun* and N. B. Kristensen, 1Faculty of Agricultural Sciences, University of Aarhus, Tjele, Denmark.

T254  Withdrawn by author.

T255  Use of inter-organ glycerol fluxes to assess abdominal versus peripheral fat mobilization in transition dairy cows. M. Larsen and N. B. Kristensen*, 1Faculty of Agricultural Sciences, University of Aarhus, Tjele, Denmark.

T256  Correlation between UT-B mRNA abundance in ruminal epithelium and net portal flux of urea in transition dairy cows. B. A. Rojen*, P. K. Theil, M. Larsen, and N. B. Kristensen, 1Faculty of Agricultural Sciences, University of Aarhus, Tjele, Denmark.

T257  Use of inter-organ glycerol fluxes to assess abdominal versus peripheral fat mobilization in transition dairy cows. M. Larsen and N. B. Kristensen*, 1Faculty of Agricultural Sciences, University of Aarhus, Tjele, Denmark.

T258  Evaluation of n-alkanes, chromic oxide and lignin as indigestible markers to estimate duodenal and fecal flows in lactating dairy cows. S. O. Juchem*, E. J. DePeters1, J. M. Heguy1, S. J. Taylor1, and J. E. P. Santos1, 1University of California, Davis; 2University of Florida, Gainesville.


T261  Hepatic metabolism of alcohols in freshening Holstein cows. B. M. L. Raun* and N. B. Kristensen, 1Faculty of Agricultural Sciences, University of Aarhus, Tjele, Denmark.

T262  Use of ARISA to monitor shifts in rumen microbial populations caused by changes in diet. S. E. Stebulis*, D. M. Stevenson1, G. J. M. Rosa1, and R. R. Grummer1, 1University of Wisconsin, Madison; 2USDA-ARS-US Dairy Forage Research Center, Madison, WI.

T263  Evaluation of n-alkanes, chromic oxide and lignin as indigestible markers to estimate duodenal and fecal flows in lactating dairy cows. S. O. Juchem*, E. J. DePeters1, J. M. Heguy1, S. J. Taylor1, and J. E. P. Santos1, 1University of California, Davis; 2University of Florida, Gainesville.


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T267  Evaluation of n-alkanes, chromic oxide and lignin as indigestible markers to estimate duodenal and fecal flows in lactating dairy cows. S. O. Juchem*, E. J. DePeters1, J. M. Heguy1, S. J. Taylor1, and J. E. P. Santos1, 1University of California, Davis; 2University of Florida, Gainesville.


T270  Use of ARISA to monitor shifts in rumen microbial populations caused by changes in diet. S. E. Stebulis*, D. M. Stevenson1, G. J. M. Rosa1, and R. R. Grummer1, 1University of Wisconsin, Madison; 2USDA-ARS-US Dairy Forage Research Center, Madison, WI.

T271  Evaluation of n-alkanes, chromic oxide and lignin as indigestible markers to estimate duodenal and fecal flows in lactating dairy cows. S. O. Juchem*, E. J. DePeters1, J. M. Heguy1, S. J. Taylor1, and J. E. P. Santos1, 1University of California, Davis; 2University of Florida, Gainesville.

Small Ruminant Goats
Exhibit Hall CDE

T266 Dynamics of ruminal fiber digestion of corn milling co-products. L. O. Tedeschi1, P. J. Kononoff2*, K. Karges1, and M. L. Gibson1, 1Texas A&M University, College Station, 2University of Nebraska, Lincoln, 1Dakota Gold Research Association, Sioux Falls, SD.

T267 Development of a mechanistic model to predict feed intake in domestic and wild ruminants of various physiological states. T. Hackmann* and J. N. Spain, University of Missouri, Columbia.

T268 Use of the mobile nylon bag method to determine phosphorus disappearance in common dairy cattle ration ingredients. N. M. Cherry*1, B. D. Lambert12, and J. P. Mui1, 1Texas AgLife Research, Stephenville, TX, 2Tarleton State University, Stephenville, TX.


T270 Efficacy of wormwoods (Artemisia spp.) as an anthelmintic in goats. S. P. Hart*, J. F. S. Ferreira2, and Z. Wang1, 1American Institute for Goat Research, Langston University, Langston, OK, 2Appalachian Farming Systems Research Center, USDA-ARS, Beaver, WV.

T271 Influence of Sericea lespedeza pellets on gastrointestinal parasite fecal egg counts in goats. N. C. Whitley**, T. H. Terrill1, J. E. Miller1, J. M. Burke1, and M. C. Gooden1, 1University of Maryland Eastern Shore, Princess Anne, 2Fort Valley State University, Fort Valley, GA, 1Louisiana State University, Baton Rouge, 4USDA-ARS-DBSFR, Boonesville, AR.


Influence of dietary condensed tannins in meat goats on fatty acid composition of carcasses. J. Lee*, G. Kannan, B. Kouakou, D. Moore, and T. Terrill, Fort Valley State University, Fort Valley, GA.


Use of an informal taste panel to teach students concepts related to beef palatability. J. A. Daniel* and T. D. Pringle, 1 Berry College, Mount Berry, GA, 2 University of Georgia, Athens.

Student demographic profile for Mississippi State University riding courses. M. Nicodemus*, Mississippi State University, Mississippi State.


Changes in species preference reported by animal science graduating seniors at North Carolina State University. J. A. Moore*, W. L. Flowers, and R. L. McCraw, North Carolina State University, Raleigh.


Technical note: Equine gastrointestinal tract preservation techniques to enhance teaching effectiveness. B. T. Gutierrez* and J. S. Pendergraft, Sul Ross State University, Alpine, TX.

Impact of a herpes (EHV-1) outbreak on incoming equestrian students, horse numbers and outside generated revenue at The University of Findlay. E. D. Bonnette*, F. D. McCarthy, and R. Koehler, The University of Findlay, Findlay, OH.

SYMPOSIA AND ORAL SESSIONS
Animal Health I
Chair: KC Olson, Kansas State University
206


10:30 AM  2  Steers grazing toxic Neotyphodium coenophialum-infected forages have increased hepatic gluconeogenic capacity. K. R. Brown*, J. L. Klots*, J. R. Strickland2, L. P. Bush1, J. A. Boling1, and J. C. Matthews1, 1 University of Kentucky, Lexington, 2 Forage-Animal Production Research Unit, USDA-ARS, Lexington, KY.

**SYMPOSIUM**

**Beef Species**

**The Evolution of Beef Cattle Genetic Evaluation**

**Chair:** Darrh Bullock, University of Kentucky  
**Sponsor:** National Beef Cattle Consortium  
**Sagamore Ballroom 2**

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<th>Time</th>
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<th>Authors and Affiliations</th>
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<tbody>
<tr>
<td>10:00 AM</td>
<td>5</td>
<td>Producing and using genetic evaluations in today’s beef industry.</td>
<td>D. Garrick, <em>Iowa State University, Ames.</em></td>
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</tbody>
</table>
| 10:30 AM | 6       | DNA technology: Estimation of genetic merit from large DNA marker panels. | R. L. Fernando, R. L. Fernando, C. Stricker, *Iowa State University, Ames,*  
|          |         |                                                                    | *Applied Genetics Network, Davos, Switzerland.*                                          |
| 11:00 AM | 7       | Integrating genetic evaluations with DNA technologies for the ultimate selection tool. | R. J. Tempelman, S. D. Kachman,  
|          |         |                                                                    | *Michigan State University, East Lansing,*  
|          |         |                                                                    | *University of Nebraska, Lincoln.*                                                       |

**Breeding and Genetics**

**Current Issues in Dairy Cattle Breeding**

**Chair:** Filippo Miglior, Agriculture and Agri-Food Canada  
**Sagamore Ballroom 6**

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<th>Time</th>
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<tr>
<td>9:30 AM</td>
<td>8</td>
<td>Improved accuracy of computer programs that optimize breeding and replacement decisions for dairy cattle.</td>
<td>A. De Vries, <em>University of Florida, Gainesville.</em></td>
</tr>
</tbody>
</table>
| 9:45 AM  | 9       | Genetic analysis of profitability of Canadian Holstein cows.         | J. Bohmanova, J. Jamrozik, K. Hand, D. Lazenby, and F. Miglior,  
|          |         |                                                                    | *CGIL, University of Guelph,*  
|          |         |                                                                    | *CanWest DHI,*  
|          |         |                                                                    | *Agriculture and Agri-Food Canada,*  
|          |         |                                                                    | *Sherbrooke,*  
|          |         |                                                                    | *QC,*  
|          |         |                                                                    | *Canada,*  
|          |         |                                                                    | *Canadian Dairy Network,*  
|          |         |                                                                    | *Guelph,*  
|          |         |                                                                    | *ON,*  
| 10:00 AM | 10      | Alternatives for evaluating daughter performance of progeny-test bulls between official evaluations. | H. D. Norman, J. R. Wright, and K. A. Weigel, *Animal Improvement Programs Laboratory,*  
|          |         |                                                                    | *ARS,*  
|          |         |                                                                    | *USDA-ARS,*  
|          |         |                                                                    | *Beltsville,*  
|          |         |                                                                    | *MD,*  
|          |         |                                                                    | *University of Wisconsin,*  
|          |         |                                                                    | *Madison.*                                                   |
| 10:15 AM | 11      | Comparison of herds that currently supply young bulls to progeny testing programs with large commercial herds that could serve as dedicated suppliers. | A. D. Coburn, K. A. Weigel, S. A. Schnell, and G. Abdel-Azim, *University of Wisconsin,*  
|          |         |                                                                    | *Madison,*  
|          |         |                                                                    | *Genex Cooperative Inc.,*  
|          |         |                                                                    | *Shawano,*  
|          |         |                                                                    | *WI.*                                                       |
| 10:30 AM | 12      | Genetic analysis of Canadian dairy cows milked by an automatic milking system. | M. Nixon, J. Bohmanova, J. Jamrozik, L. R. Schaeffer, G. Mason, J. Rodenburg, F. Miglior,  
|          |         |                                                                    | K. Hand, *University of Guelph,*  
|          |         |                                                                    | *Guelph,*  
|          |         |                                                                    | *ON,*  
|          |         |                                                                    | *Canada,*  
|          |         |                                                                    | *Ontario Ministry of Food,*  
|          |         |                                                                    | *Agriculture and Rural Affairs,*  
|          |         |                                                                    | *Woodstock,*  
|          |         |                                                                    | *ON,*  
|          |         |                                                                    | *Canada,*  
|          |         |                                                                    | *Agriculture and Agri-Food Canada,*  
|          |         |                                                                    | *Sherbrooke,*  
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|          |         |                                                                    | *CanWest DHI,*  
|          |         |                                                                    | *Guelph,*  
|          |         |                                                                    | *ON,*  
|          |         |                                                                    | *Canada.*                                                   |
| 10:45 AM | 13      | Impact of selection for decreased somatic cell score on productive life and culling for mastitis. | H. D. Norman, R. H. Miller, and J. R. Wright, *Animal Improvement Programs Laboratory,*  
|          |         |                                                                    | *ARS,*  
|          |         |                                                                    | *USDA,*  
|          |         |                                                                    | *Beltsville,*  
|          |         |                                                                    | *MD.*                                                       |
| 11:00 AM |         | Break                                                               |                                                                                         |
| 11:15 AM | 14      | Derivation of factors to estimate daily yield from single milkings for Holsteins milked two or three times daily. | M. M. Schutz, J. Bohmanova, J. Jamrozik, L. R. Schaeffer, G. Mason, J. Rodenburg, F. Miglior,  
|          |         |                                                                    | K. Hand, *University of Guelph,*  
|          |         |                                                                    | *Guelph,*  
|          |         |                                                                    | *ON,*  
|          |         |                                                                    | *Canada,*  
|          |         |                                                                    | *Ontario Ministry of Food,*  
|          |         |                                                                    | *Agriculture and Rural Affairs,*  
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|          |         |                                                                    | *Guelph,*  
|          |         |                                                                    | *ON,*  
|          |         |                                                                    | *Canada.*                                                   |
| 11:30 AM | 15      | Genetic correlation of live weight with price and calves' commercial values. | R. Dal Zotto, M. Cassandro, M. Penasa, M. De Marchi, and G. Bittante, *University of Padova,*  
|          |         |                                                                    | *Legnaro,*  
|          |         |                                                                    | *Padova,*  
|          |         |                                                                    | *Italy.*                                                     |
| 11:45 AM | 16      | Relationship between milk production and female fertility traits in Holsteins.  | S. Tsuruta, I. Misztal, C. Huang, and T. J. Lawlor, *University of Georgia,*  
|          |         |                                                                    | *Athens,*  
|          |         |                                                                    | *Holstein Association USA Inc.,*  
|          |         |                                                                    | *Brattleboro,*  
|          |         |                                                                    | *VT.*                                                        |
| 12:00 PM | 17      | Genetic correlations between conception rates and test-day milk yields using a threshold-linear random-regression model. |
Dairy Foods
Dairy Food Chemistry and Microbiology
Chair: Joseph Schlesser, US Food and Drug Administration

12:15 PM 18 Study on genetic parameters of conception rate and heat detection/expression. C. Huang*, I. Misztal¹, S. Tsuruta¹, and T. J. Lawlor², ¹University of Georgia, Athens, ²Holstein Association USA Inc., Brattleboro, VT.

SYMPOSIUM
ESS Program
Horse Genome Toolbox for Animal Science Applications
Chair: Amy Burk, University of Maryland


10:00 AM 20 Transglutaminase polymerization of a modified whey protein ingredient. D. A. Clare* and C. R. Daubert, North Carolina State University, Raleigh.


10:30 AM 22 Immuno-stimulatory AT oligodeoxynucleotide from Lactobacillus gasseri requires a specific self-stabilized structure. T. Shimosato*¹, M. Tohno², T. Sato³, Y. Kawai¹, T. Saito², and H. Kitazawa², ¹Shinshu University, Minamiminowa, Nagano, Japan, ²Tohoku University, Sendai, Miyagi, Japan, ³Yokohama City University, Yokohama, Kanagawa, Japan.

10:45 AM 23 Complete genome sequence and comparative genome microarray of Lactobacillus casei provides evidence for genome expansion and reveals significant intraspecies differences. H. Cai*, J. R. Broadbent², and J. L. Steele¹, ¹University of Wisconsin, Madison, ²Utah State University, Logan.

11:00 AM Break

11:15 AM 24 Effect of feeding pasture and long chain omega-3 fatty acid (LCn-3FA) supplements on the composition and oxidative stability of milk & butter. M. C. Rose*¹, H. P. V. Rupasinghe¹, S. M. Budge², K. Glover¹, and A. H. Fredeen¹, ¹Nova Scotia Agricultural College, Truro, NS, Canada, ²Dalhousie University, Halifax, NS, Canada.

11:30 AM 25 The protective effect of processed cheese against hyperlipidemia in rats. M. H. Abd El-Salam* and D. A. Mohamed, National Research Centre, Cairo, Giza, Egypt.

11:45 AM 26 Antimicrobial activity of dried spearmint and its extracts for use as soft cheese preservatives. M. Foda¹, M. El-Sayed*², M. E-Mogazy¹, A. Hassan², and N. Rasmy², ¹National Research Center, Cairo, Egypt, ²Faculty of Agriculture, Cairo, Egypt.

12:00 PM 27 Is Levowitz–Weber the appropriate confirmatory stain for direct microscopic somatic cell counting of ovine milk? K. H. Petersson*¹, L. Connor¹, C. S. Petersson-Wolfe², and K. A. Rego¹, ¹University of Rhode Island, Kingston, ²Virginia Polytechnic Institute and State University, Blacksburg.
SYMPOSIUM
Extension Education
Has the Land-Grant College Left the Farm?
Chair: Robert Weaber, University of Missouri
109-110

9:30 AM 32 Why there is less applied agricultural research conducted at Land-Grant colleges. R. L. Plain*, University of Missouri, Columbia.

10:15 AM 33 What I did when I had an extension/research appointment and what I do now: How times have changed. R. L. Nebel*, Select Sires Inc., Plain City, OH.

10:45 AM 34 Serving the Beef Industry by re-defining your comfort zone. M. Siemens*, Cargill Meat Solutions, Wichita, KS.

11:15 AM 35 A transition from extension-research to industry swine genetics. W. O. Herring*, Smithfield Premium Genetics Group, Rose Hill, NC.

11:45 AM 36 Why our farm is supporting MS research programs for the University of Illinois. B. F. Wolter*, The Maschhoffs Inc., Carlyle, IL.

12:15 PM Discussion.

SYMPOSIUM
Forages and Pastures
Fiber Fermentation: Influence of Supplemental Nonstructural Carbohydrates
Chair: Marie Krause, West Virginia University
Sponsor: Mycogen
103

9:30 AM 37 Factors affecting activity of cellulolytic microbes in the rumen. P. J. Weimer*1,2, 1USDA-ARS, Madison, WI, 2University of Wisconsin, Madison.


Graduate Student Paper Competition
ADSA Dairy Foods
Chair: Nagendra Shah, Victoria University
121

9:30 AM 40 Effects of sucrose on the foaming and interfacial properties of whey protein isolate and egg white protein mixtures. X. Yang*1,2, T. K. Berry1,2, and E. A. Foegeding1,2, 1North Carolina State University, Raleigh, 2Southeast Dairy Foods Research Center, Raleigh, NC.


10:00 AM 42 Effect of different types of emulsifiers on the functional properties of low-fat process cheese. E. M. Salim*, S. Govindasamy-Lucey2, M. E. Johnson2, and J. A. Lucey1, 1University of Wisconsin, Madison, 2Wisconsin Center for Dairy Research, Madison, WI.

10:15 AM 43 Manufacture and characterization of whey protein concentrate from microfiltration of milk. H. S. Somni* and V. V. Mistry, South Dakota State University, Brookings.


10:45 AM 45 Characterizing stress responses of bifidobacteria strains of industrial importance. A. K. Abdalla*1,2, M. A. Mohran1, S. C. Ingham2, J. R. Broadbent1, and J. L. Steele2, 1Assiut University, Assiut, Egypt, 2University of Wisconsin, Madison, 3Utah State University, Logan.
Growth substrates for non starter lactic acid bacteria. Biochemistry and transcriptional profile of *Lactobacillus casei* ATCC 334 in a Cheddar cheese model system. M. Budinich*, I. Díaz-Muniz†, H. Cai†, V. Smeianov†, J. Broadbent‡, and J. Steele‡, †University of Wisconsin, Madison, ‡Utah State University, Logan.


Sensory evaluation of reduced fat cheddar cheese fortified with omega-3 fatty acids for oxidized, rancid and fishy flavor attributes. J. E. Thurgood‡, C. Brothersen‡, S. Martini‡, and D. J. McMahon‡, †Utah State University, Logan, ‡Western Dairy Center, Logan, UT.

Graduate Student Paper Competition
ADSA Production Division
Chair: Howard Tyler, Iowa State University

9:30 AM
Osteopontin immunoreactivity in peripheral blood mononuclear cells, ileum, and ileocecal lymph node of dairy cows naturally infected with *Mycobacterium avium* subsp. *paratuberculosis*. E. L. Karcher*, C. S. Johnson†, J. P. Bannantine‡, D. C. Beitz‡, and J. R. Stabel‡, †Iowa State University, Ames, ‡USDA-ARS, National Animal Disease Center, Ames, IA.

9:45 AM

10:00 AM

10:15 AM
Effects of alfalfa inclusion rate on productivity of lactating dairy cattle fed wet corn gluten feed based diets. C. R. Mullins*, K. N. Grigsby, and B. J. Bradford, †Kansas State University, Manhattan, ‡Cargill, Inc., Blair, NE.

10:30 AM
Diet does not affect putative mammary epithelial stem cells in pre-weaned Holstein heifers. K. M. Daniels*, A. V. Capuco, R. E. James, M. L. McGilliard, and R. M. Akers, †Virginia Polytechnic Institute and State University, Blacksburg, ‡USDA-Agricultural Research Service, Beltsville, MD.

10:45 AM
Gene expression for enzymes involved with volatile fatty acid and glucose metabolism are affected by the dietary forage-to-concentrate ratio. G. B. Penner*, M. Taniguchi, L. L. Guan, K. A. Beauchemin, and M. Oba, †University of Alberta, Edmonton, Alberta, Canada, ‡Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.

11:00 AM

11:15 AM
Development of a mechanistic model to predict feed intake in domestic and wild ruminants of various physiological states. T. Hackmann and J. N. Spain, University of Missouri, Columbia.

Graduate Student Paper Competition
ADSA Southern Section
Chair: David R. Winston, Virginia Polytechnic Institute and State University

9:30 AM

9:45 AM
Effects of ThermalCare-D® on efficiency and production of lactating dairy cows during hot weather. J. Boyd*, J. W. West†, J. Bernard†, and S. Block‡, †University of Georgia, Tifton, ‡ADM Research, Decatur, IN.

10:00 AM
Effect of starch and casein infusions in the abomasum of lactating dairy cows. A. G. Rius*, J. A. D. R. Appuhamy, D. Kirovski, J. Cyriae, and M. D. Hanigan, †Virginia Polytechnic Institute and State University, Blacksburg, ‡University of Belgrade, Belgrade, Serbia.
# SYMPOSIUM

**Meat Science and Muscle Biology**

**Meat Quality: Regulation of Intramuscular Fat Deposition**

**Chair:** John Stika, Certified Angus Beef LLC  
**Sponsor:** Elanco  
**Sagamore Ballroom 3**

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<td>Break</td>
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# SYMPOSIUM

**Nonruminant Nutrition**

**Mineral Absorption: What is Known?**

**Chair:** Scott Radcliffe, Purdue University  
**Sponsor:** Alltech  
**105–106**

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<td>9:30 AM</td>
<td>Introduction. J. S. Radcliffe, Purdue University, West Lafayette, IN.</td>
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# SYMPOSIUM

**Physiology and Endocrinology**

**Nutrition and Growth, Reproductive and Lactational Performance**

**Chair:** Ron Butler, Cornell University  
**Sagamore Ballroom 7**

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<tr>
<td>9:30 AM</td>
<td>Adipose triglyceride lipase is a novel lipase in dairy cattle. D. Elkins* and D. Spurlock, Iowa State University, Ames.</td>
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<tr>
<td>9:45 AM</td>
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<td>10:00 AM</td>
<td>72</td>
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<tr>
<td>10:15 AM</td>
<td>73</td>
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</table>
Glutamine synthetase is up-regulated in the liver of old beef cows by estradiol implants. E. D. Miles¹, B. W. McBride², K. R. Brown¹, K. K. Schillo¹, J. A. Boling¹, and J. C. Matthews¹, ¹University of Kentucky, Lexington, ²University of Guelph, Guelph, ON, Canada.

Production, Management and the Environment Measuring and Evaluating Environmental Stress Chair: Micheal Brouk, Kansas State University 107–108

Dairy cows and the environment: Were we better off 83 years ago? A. D. Garcia*¹ and J. G. Linn², ¹South Dakota State University, Brookings, ²University of Minnesota, St. Paul.

Impact of using feedline soakers in combination with Korral Kools® to cool early lactation cows housed in desert style barns. J. F. Smith*¹, B. J. Bradford¹, A. Oddy², J. P. Harner², and M. J. Brouk¹, ¹Kansas State University, Manhattan, ²NADA Al-Othman, Al Ahsa, Saudi Arabia.


Differences in thermoregulatory ability between slick and normal-haired lactating Holstein cows in response to acute heat stress. S. Dikmen*¹, E. Alava², E. Pontes³, J. M. Fear⁴, B. Y. Dikmen⁵, T. A. Olson⁶, and P. J. Hansen⁷, ¹University of Uludag, Bursa, Turkey, ²University of Florida, Gainesville, ³Universidade de São Paulo, São Paulo, Brazil, ⁴University of Uludag, Keles Vocational School, Keles, Bursa, Turkey.

Development of models for predicting management practices and conditions that alleviate heat stress in large commercial dairy farms. J. M. Schefers*, K. A. Weigel, and N. B. Cook, University of Wisconsin, Madison.

Is the temperature-humidity index (THI) the best indicator of heat stress in lactating dairy cows in a subtropical environment? S. Dikmen*¹,², and P. J. Hansen², ¹University of Uludag, Faculty of Veterinary Medicine, Bursa, Turkey, ²University of Florida, Gainesville.

Evaluation of accuracy and variation of Thermochron® iButtons®. S. M. Garey*, T. H. Friend, and B. H. Carter, Texas A&M University, College Station.


The effects of supplementing a dietary novel yeast culture on body temperature indices, production and metabolism in heat-stressed lactating cows. G. Shwartz¹, J. B. Wheelock¹, L. L. Hernandez², M. D. O’Brien³, K. A. Dawson¹, M. J. VanBaale¹, R. P. Rhoads¹, R. B. Zimbelman¹, and L. H. Baumgard*¹, ¹University of Arizona, Tucson, ²Alltech Inc., Nicholasville, KY.


Ruminant Nutrition
Forages
Chair: Stacey Gunter, USDA-ARS-SPRRS
Sagamore Ballroom 4

9:30 AM
Optimizing forage use in total mixed rations for lactating cows. R. Kowsar, G. R. Ghorbani, M. Alikhani, M. Khorvash, and A. Nikkhah, Isfahan University of Technology, Isfahan, Iran; Zanjan University, Zanjan, Iran; University of Illinois, Urbana.

9:45 AM
Fenugreek as forage for dairy cows I. Effect on productivity. A. W. Alemu* and L. Doepel, University of Alberta, Edmonton, AB, Canada.

10:00 AM
Brown midrib corn silage fed during the transition period can result in a persistent increase in production. W. C. Stone*, L. E. Chase, T. R. Overton, J. L. Lukas, and K. E. Nester, Cornell University, Ithaca, NY; Mycogen Seeds, Wooster, OH.

10:15 AM
Production response of lactating cows to combinations of BMR corn silage and Tifton 85 bermudagrass hay. J. J. Castro*, N. A. Mullis, and J. K. Bernard, University of Georgia, Athens.

10:30 AM
Effect of wheate forage maturity and preservation method on dietary passage kinetics and DM digestibility of mixed diets fed to growing beef calves. P. Beck*, F. Nacer, B. Stewart, D. Shockey, M. Morgan, and S. Gunter, University of Arkansas Division of Agriculture, Hope.

10:45 AM

11:00 AM
Comparison of grazing stockpiled tall fescue versus feeding hay or hay plus supplement to beef cows in late gestation and early lactation. A. M. Meyer*, R. L. Kallenbach, and M. S. Kerley, University of Missouri, Columbia.

11:15 AM
Associative effects of leguminous (C3; Lucern) and nonleguminous (C4; Corn & sorghum) fodders on in-situ digestion kinetics of fiber. M. Yaqoob*, J. I. Sultan, A. Jeved, and P. Akhtar, Department of Livestock Management, University of Agriculture, Faisalabad, Punjab, Pakistan; Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Punjab, Pakistan; Department of Animal Breeding and Genetics, University of Agriculture, Faisalabad, Punjab, Pakistan.

Ruminant Nutrition
Minerals and Vitamins
Chair: Allen Young, Utah State University
Sagamore Ballroom 5

9:30 AM
Impact of copper deficiency in the presence or absence of high dietary manganese on iron status of cattle. S. L. Hansen* and J. W. Spears, North Carolina State University, Raleigh.

9:45 AM

10:00 AM

10:15 AM

10:30 AM
Effect of nano selenium and organic zinc supplementation on lactation performance and milk selenium and zinc concentrations in dairy cows. W. Wen-Xuan, X. Xian-Lin, Z. Yun-Guo, and W. Heng-Jin, Guizhou University, Guiyang, Guizhou Province, P. R. China; Xifeng Agricultural Bureau, Xifeng, Guizhou Province, P. R. China.
The influence of calf Se status on glutathione peroxidase-1 and glutathione peroxidase-3 activities, and liver GPx-1 messenger RNA. G. Lum*, J. Rowntree, K. Bondioli, M. McCarter, L. Southern, and C. Williams, LSU Agricultural Center, Baton Rouge, LA.

Selenium partitioning between body compartments in lactating dairy goats supplemented with various sources and levels of Se. G. Caja*, C. Flores, A. Salama, and G. Bertin, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain. Alltech France, Levallois-Perret, France.

Effectiveness of potassium bicarbonate to increase dietary cation-anion difference in early lactation cows. R. White*, J. Harrison, R. Kincaid, E. Block, and N. St. Pierre, Washington State University, Pullman. Church and Dwight, Princeton, NJ. The Ohio State University, Columbus.

Phosphorus excretion in lactating cows fed diets supplemented with fat. Z. Wu, J. D. Ferguson, and D. W. Remsburg, University of Pennsylvania, Kennett Square.


Biological activity of vitamin E in dairy cows. S. K. Jensen*, University of Aarhus, Tjele, Denmark.

Conjugated linoleic acids and their effect on dairy marketing. R. M. Haines*, B. A. Corl, and D. R. Winston, Virginia Polytechnic Institute and State University, Blacksburg.

Probiotics: For life. S. Quarles*, Clemson University, Clemson, SC.

No spoon required: The changing face of yogurt. A. J. Koons*, Pennsylvania State University, University Park.

More than what meets the eye: Labeling of milk. A. L. Pitre*, Louisiana State University, Baton Rouge.

Use of whey proteins in food products. M. Welper*, Iowa State University, Ames.

Wildlife threat for disease transmission to domestic livestock. S. C. Olsen*, National Animal Disease Center, Ames, IA.

Providing veterinary healthcare to underserved counties in Pennsylvania through credentialed veterinary technicians. D. W. Remsburg*, D. T. Galligan, and J. D. Ferguson, University of Pennsylvania School of Veterinary Medicine, Kennett Square.

Graduate Student Paper Competition  
ADSA-ASAS Northeast Section  
Chair: Steven Zinn, University of Connecticut

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<td>11:15 AM</td>
<td>119</td>
<td>Mammary and liver lipogenic gene expression in lactating mice fed diets supplemented with trans-18:1 isomers or t10c12 CLA.</td>
<td>A. K. G. Kadegowda*, E. E. Connor*, B. B. Teter†, J. Sampugna†, L. S. Piperova†, and R. A. Erdman†, †University of Maryland, College Park, †USDA-ARS, Beltsville, MD.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>121</td>
<td>Colicin E1 and EDTA have additive antimicrobial effects against Escherichia coli isolates in bovine milk.</td>
<td>J. M. Scudder*, C. H. Stahl, and M. R. Waldron†, †University of Vermont, Burlington, †North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>122</td>
<td>Skeletal muscle satellite cells do not spontaneously adopt adipogenic fates.</td>
<td>J. D. Starkey*, M. Yamamoto, S. Yamamoto, and D. J. Goldhamer, *University of Connecticut, Storrs.</td>
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ADSA-SAD  
Undergraduate Competition Dairy Production  
Chair: Kas Ingawa, NCSU DRMS

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<th>Time</th>
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<td>1:00 PM</td>
<td>124</td>
<td>Withdrawn by author.</td>
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<tr>
<td>1:30 PM</td>
<td>126</td>
<td>Genetics of feed conversion efficiency: Using a dynamic metabolic model to investigate the patterns of nutrient flux in the most efficient dairy animals.</td>
<td>C. Schachtschneider* and J. McNamara, *Washington State University, Pullman.</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>128</td>
<td>Colostrum nutrition, immunization, and management when raising young dairy calves.</td>
<td>A. Aguiar* and E. Jaster, *California Polytechnic State University, San Luis Obispo.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>129</td>
<td>Enhancing fertility with omega-3 fatty acids.</td>
<td>J. A. Tekippe*, *Iowa State University, Ames.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>130</td>
<td>Grazing under irrigation: A novel approach to pasture-based dairying.</td>
<td>E. Waggoner*, *Clemson University, Clemson, SC.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>131</td>
<td>The natural fertilizer.</td>
<td>K. M. Bridges*, *Louisiana State University, Baton Rouge.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>132</td>
<td>Effects of heat stress and milk replacer strategy on calf growth, starter intake, and fecal scores.</td>
<td>L. J. Berger*, G. A. Holub, and J. E. Sawyer, *Texas A&amp;M University, College Station.</td>
</tr>
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**SYMPOSIUM**  
**Dairy Foods**  
**Advances in Low Fat Cheese Research**  
**Chair:** Donald McMahon, Utah State University  
**Sponsor:** Dairy Management, Inc.  

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<th>Time</th>
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<tr>
<td>1:30 PM</td>
<td>133</td>
<td>Low fat cheese opportunities.</td>
<td>J. Montel*, Dairy Management Inc., Rosemont, IL.</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>134</td>
<td>The impact of fat content on flavor of cheddar cheese.</td>
<td>M. A. Drake*, North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>135</td>
<td>Effect of composition on the microbial ecology of low fat cheese.</td>
<td>J. R. Broadbent*, Utah State University, Logan.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>136</td>
<td>Effect of composition on the microbial metabolism of low fat cheese.</td>
<td>J. Steele*, University of Wisconsin, Madison.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>137</td>
<td>Impact of fat content on cheese texture.</td>
<td>E. A. Foegeding*, North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>138</td>
<td>Effect of fat reduction on the functional properties of slice on slice process cheese.</td>
<td>L. E. Metzger*, S. Chandran¹, C. R. Daubert², M. Yurgec³, and S. Ramsey⁴, South Dakota State University, Brookings, North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>139</td>
<td>Advances in nonfat/lowfat process cheese for melting and ingredient use.</td>
<td>J. A. Lucey*, University of Wisconsin, Madison.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>140</td>
<td>A novel technology for making lowfat cheese.</td>
<td>N. Y. Farkye* and M. Arnold, California Polytechnic State University, San Luis Obispo.</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>141</td>
<td>Alternative manufacturing protocols for low fat cheese.</td>
<td>M. Johnson*, University of Wisconsin, Madison.</td>
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**FASS Ag Guide Revision Workshop**  
**Chairs:** Janice Swanson, Michigan State University, and John McGlone, Texas Tech University  

The Ag Guide was first published in 1988. The second edition was published in 1999. The 3rd edition will be published in late 2008. A collection of writing sub-committees has produced a first draft in early 2008. This workshop will (a) present major changes in the current draft, (b) gather public input into the current draft, and (c) identify errors of fact or omission.

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<td>2:00 PM</td>
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<td>Background on the revision of the Ag Guide.</td>
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<td>2:30 PM</td>
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<td>Highlight of major changes in the current revision.</td>
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<td>3:00 PM</td>
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<td>Roundtable discussion topics:</td>
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<td>• Change in the title</td>
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<td>• Inclusion of genetically modified, and cloned animals</td>
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<td>• Applications for agricultural animals in biomedical research</td>
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<td>• Expanded environmental enrichment materials</td>
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<td>• Inclusion of humane slaughter guidance</td>
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<td>• What materials are missing, if any?</td>
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<td>• Does the current version contain errors of fact based on the best available science?</td>
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<td>4:00 PM</td>
<td></td>
<td>Conclusions and group summaries.</td>
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SYMPOSIUM
ADSA Southern Section Symposium
Responding to Hot Topics in Dairy Management
Chair: Cathleen C. Williams, Louisiana State University
109–110

2:00 PM 142 Biosecurity: Dealing with problem diseases. K. E. Olson*, KEO Consulting, Schaumburg, IL.

2:30 PM 143 Defending against mycoplasma mastitis. J. C. Beagley and M. W. Overton*, University of Georgia, Athens.

3:00 PM Break


4:15 PM Break

4:30 PM ADSA Southern Branch Business Meeting.

SYMPOSIUM
ALPHARMA Beef Cattle Nutrition and Beef Species Joint Symposium
Producing Quality Beef in a Bio-Based Economy
Chair: Don Boggs, Kansas State University
Sponsor: Alpharma
500 Ballroom

2:00 PM 146 ASAS Centennial Presentation: Development and current issues of a corn-based beef industry. L. R. Corah*, Certified Angus Beef LLC, Wooster, OH.

2:30 PM 147 Feeding strategies to reduce corn use. R. H. Pritchard*, D. D. Loy2, and D. L. Boggs3, 1South Dakota State University, Brookings, 2Iowa State University, Ames, 3Kansas State University, Manhattan.

3:00 PM 148 Environmental considerations of feeding bio-fuel co-products. N. A. Cole*, M. S. Brown1, and J. C. MacDonald1, 1USDA-ARS-CPRL, Bushland, TX, 2West Texas A&M University, Canyon, 3Texas AgriLife Research, Amarillo, TX.

3:30 PM 149 Precursors to enhance marbling. S. B. Smith*, J. E. Sawyer, R. D. Rhoades, and M. A. Brooks, Texas A&M University, College Station.

4:00 PM 150 Post-harvest strategies to enhance beef quality. J. O. Reagan*, NCBA, Centennial, CO.

4:30 PM 151 ASAS Centennial Presentation: Using grain and biomass for feed versus fuel. J. Lawrence*, Iowa State University, Ames.

Animal Health III
Chair: Gary Snowder, USDA-ARS
206

2:00 PM 152 Stress and Immunity: Implications on animal health and production. J. A. Carroll*, T. H. Elsasser2, J. C. Laurenz3, R. D. Randel4, J. L. Sarin3, and T. H. Welsh Jr., 1Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 2Growth Biology Laboratory, USDA-ARS, Beltsville, MD, 3Texas A&M University System, Kingsville, 4Texas AgriLife Research and Extension Center, Texas A&M System, Overton, 5Auburn University, Auburn, AL, 6Texas AgriLife Research, Texas A&M System, College Station.

3:00 PM 153 Neck rails improve udder and stall hygiene but increase risk of lameness. F. Bernardi*, I. Fregonesi1, C. Winkler2, D. M. Veira1, M. A. G. von Keyserlingk1, and D. M. Weary1, 1University of British Columbia, Vancouver, BC, Canada, 2University of Natural Resources and Applied Life Sciences, Vienna, Austria, 3Universidad Estadual de Londrina, Londrina, PR, Brazil, 4Agriculture and Agri-Food Canada, Agassiz, BC, Canada.
Cytokine secretion in periparturient dairy cows naturally infected with *Mycobacterium avium* subsp. *paratuberculosis*. E. L. Karcher*, D. C. Beitz, and J. R. Stabel, Iowa State University, Ames, ARS-USDA, National Animal Disease Center, Ames, IA.


Dietary Colicin E1 prevents experimentally induced post-weaning diarrhea but does not provide a growth promoting effect. S. A. Cutler, N. A. Cornick, S. M. Lonergan, and C. H. Stahl, Iowa State University, Ames, North Carolina State University, Raleigh.


**SYMPOSIUM**
**ASAS Cell Biology**

**The Role of MicroRNA on Cell Function**

*Chairs: James Matthews, University of Kentucky, and Elisabeth Huff-Lonergan, Iowa State University*

*Sponsors: American Society of Animal Science and USDA-CSREES*

Sagamore Ballroom 2

2:00 PM  Introduction


2:35 PM  Role of MicroRNAs in hepatocarcinogenesis in an animal model. K. Ghoshal*, J. Datta, and H. Kutay, Ohio State University, Wooster.

3:05 PM  MicroRNA in muscle development. M. Georges*, University of Liege, Belgium.

3:35 PM  MicroRNAs in the ovary and female reproductive tract. L. Christenson*, M. Carletti, S. Fiedler, L. Luense, and X. Hong, University of Kansas Medical Center, Kansas City.

4:05 PM  Discussion

**SYMPOSIUM**
**Bioethics**

**Value of Bioethics Leadership for Food Animal Agriculture**

*Chair: Janice Siegfried, Michigan State University*

101–102

2:00 PM  Introduction

2:05 PM  Bioethics across the disciplines: Leadership and mutual respect. G. Varner*, Texas A&M University, College Station.

2:35 PM  Bioethics: The need for leadership and how societies should respond. M. G. Hogberg*, Iowa State University, Ames.

3:00 PM  Bioethics: The need for leadership and how the societies should respond. M. P. Lacy*, University of Georgia, Athens.
3:25 PM  Break

3:40 PM  167  **ASAS Centennial Presentation:** Role of industry leaders in addressing bioethical issues. J. W. Lauderdale*, Lauderdale Enterprises Inc., Augusta, MI.

4:10 PM  168  Summary and perspective from within. D. J. R. Cherney*, Cornell University, Ithaca, NY.

4:30 PM  Discussion

**SYMPOSIUM**

**Breeding and Genetics**

**Training of Future Animal Breeders**

**Chairs:** Janice Rumph, Michigan State University, and Filippo Miglior, Agriculture and Agri-Food Canada

**Sponsor:** Igenity

**Sagamore Ballroom 6**

2:00 PM  Introduction. J. Rumph, Michigan State University, Lake City.

2:10 PM  169  Training graduate students in animal breeding: A historical prospective. E. J. Pollak*, Cornell University, Ithaca, NY.

2:40 PM  170  Graduate education utilizing distance learning. R. M. Lewis*1, B. B. Lockee1, M. S. Ames1, R. M. Enns2, J. M. Rumph1, T. W. Wilkinson1, and E. J. Pollak1, 1Virginia Tech, Blacksburg; 2Colorado State University, Fort Collins; 3Michigan State University, Lake City; 4Cornell University, Ithaca, NY.

3:10 PM  171  Challenges of training quantitative graduate students. I. Misztal* and J. K. Bertrand, University of Georgia, Athens.

3:40 PM  172  Alternative teaching techniques for new and smaller animal breeding programs. C. D. Dechow*, Penn State University, University Park.

4:10 PM  173  Quantitative genetics training to meet the needs of the breeding industry. M. M. Lohuis*, Monsanto Company, St. Louis, MO.

4:40 PM  Panel Discussion. J. Rumph1 and F. Miglior2, 1Michigan State University, Lake City; 2Agriculture and Agri-Food Canada, Guelph, ON, Canada.

**Companion Animals**

**Comparative Animal Biology**

**Chair:** Gail Kuhlman, Proctor and Gamble Pet Care

**204**

2:00 PM  174  Diet transition time and stabilization of apparent digestibility in the feline. S. K. Martin*1, M. R. C. de Godoy1, D. L. Harmon1, E. S. Vanzant1, R. M. Yamka2, K. G. Friesen2, and K. R. McLeod1, 1University of Kentucky, Lexington; 2Hill's Pet Nutrition Inc., Topeka, KS.

2:15 PM  175  Low-level fructan supplementation is effective in modifying starch protein catabolite concentrations but not gut microbiota populations in adult dogs. K. Barry*1, D. Hernot1, I. Middelbos1, C. Francis1, B. Dunsford1, and G. Fahey Jr.1, 1University of Illinois, Urbana; 2GTC Nutrition, Golden, CO.

2:30 PM  176  Influence of dietary protein content and source on digestibility patterns, osmolality and fecal quality in dogs differing in body size. J. Nery*1, C. Tournier1, V. Biourge1, L. Martin1, H. Dumon1, and P. Nguyen1, 1Ecole Nationale Veterinaire de Nantes, Nantes, France; 2Royal Canin, Aimargues, France.

2:45 PM  177  Evaluation of high protein diets in kittens during their first year of life. B. M. Vester*1, K. J. Liu1, T. L. Keel1, T. K. Graves1, and K. S. Swanson1, 1University of Illinois, Urbana; 2Natural Manufacturing Inc., Fremont, NE.

3:00 PM  178  Influence of feeding raw or extruded feline diets on nutrient digestibility and nitrogen metabolism in African wildcats. B. M. Vester*1, S. L. Burke1, K. J. Liu1, C. L. Dikeman1, L. G. Simmons1, and K. S. Swanson1, 1University of Illinois, Urbana; 2Henry Doorly Zoo, Omaha, NE; 3Natural Manufacturing Inc., Fremont, NE.
Vitamin and mineral comparisons between captive and free-ranging koalas (*Phascolarctos cinereus*), possible explanations for hip dysplasia. D. A. Schmidt*1, W. A. Ellis1,2, F. B. Bercovitch1, Z. Lu1, T. C. Chen1, C. Hamlin-Andrus1, G. W. Pye1, and M. F. Holick3, 1Zoological Society of San Diego, San Diego, CA, 2University of Queensland, Brisbane, Australia, 3Vitamin D, Skin and Bone Laboratory, Boston University School of Medicine, Boston, MA.

Using regression analysis to determine the quantities of browse component dry matter on branches of Carolina willow (*Salix caroliniana*). M. L. Schlegel*1,2, A. McComb1,3, and E. V. Valdes1, 1The Zoological Society of San Diego, San Diego, CA, 2Disney’s Animal Programs, Lake Buena Vista, FL, 3North Carolina State University, Raleigh.

An epidemiological study into the effect of captive diets on reproductive success in Humboldt and African penguins. R. McClements*1,2, K. Sliftka2, and A. Ward2, 1University of Sydney, Camperdown, NSW, Australia, 2Dallas Zoo and Aquarium, Dallas, TX, 2Zoo Nutrition Services, Fort Worth, TX.

**Forages and Pastures I**
**Chair: Charles Staples, University of Florida**

2:00 PM 182 Reduced ferulate cross link concentration is associated with improved fiber digestibility of corn stover at silage maturity. H. G. Jung*1,2 and R. L. Phillips2, 1USDA-ARS, St. Paul, MN, 2University of Minnesota, St. Paul.


2:45 PM 185 Digestibility, milk fatty acid profile, and plasma amino acids in lactating dairy cows fed alfalfa cut at sundown or sunup. A. F. Brito*1, G. F. Tremblay2, C. Benchaa1, A. Bertrand2, Y. Castonguay2, G. Belanger1, R. Michaud2, H. Lapierre2, D. R. Ouellet1, H. V. Petit1, and B. Berthiaume1, 1Dairy & Swine R&D Centre, Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 2Soils & Crops R&D Centre, Agriculture and Agri-Food Canada, Quebec, QC, Canada.

3:00 PM 186 Effects of cutting alfalfa at sundown or sunup on omasal flow of nutrients in lactating dairy cows. A. F. Brito*1, G. F. Tremblay2, C. Benchaa1, A. Bertrand2, Y. Castonguay2, G. Belanger1, R. Michaud2, H. Lapierre2, D. R. Ouellet1, and R. Berthiaume1, 1Dairy & Swine R&D Centre, Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 2Soils & Crops R&D Centre, Agriculture & Agri-Food Canada, Quebec, QC, Canada.

3:15 PM 187 Which native Sicilian pasture plants make the difference for milk aroma quality? I. Schad1, T. Rapisarda1, G. Belvedere1, F. La Terra1, G. Azzaro1, P. J. Van Soest2, G. Licitra1,1, and S. Cappino1, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2Cornell University, Ithaca, NY, 3D.A.C.P.A., University of Catania, Catania, Italy.

3:30 PM 188 Effects of supplementing tanniferous sainfoin hay on nitrogen metabolism of grass-fed dairy cows. F. Dohme*1, A. Scharenberg1, and M. Kreuzer2, 1Agroscope Liebefeld-Posieux, Research Station ALP, Postieus, FR, Switzerland, 2ETH Zurich, Institute of Animal Science, Zurich, Zurich, Switzerland.

3:45 PM 189 Modeling manure OM and N composition of dairy cows fed grass silage based diets. D. J. Dijkstra*1, A. Bannink2, E. A. Lantinga1, and J. W. Reijs1, 1Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Animal Sciences Group, Wageningen UR, Lelystad, the Netherlands, 3Biological Farming Systems Group, Wageningen University, Wageningen, the Netherlands, 4Agricultural Economics Research Institute, Wageningen UR, Wageningen, the Netherlands.

**Nonruminant Nutrition**
**Mineral**
**Chairs: Gary Fitzner, Diamond V Mills, and Xingen Lei, Cornell University**

2:00 PM 190 Effect of phytic acid on apparent ileal digestibility of minerals in piglets. T. A. Woyengo*1, A. Cowieson2, O. Adeola3, and C. M. Nyachoti1, 1University of Manitoba, Winnipeg, MB, Canada, 2Danisco (UK) Limited, Marlborough, UK, 3Purdue University, West Lafayette, IN.

The effects of dietary calcium to total phosphorus ratio (Ca:P) in diets containing 1000 FTU/kg of phytase on performance in 10–25 kg pigs. K. L. Saddoris*, S. B. Williams, D. W. Dean, and D. R. Cook, Akey, Lewisburg, OH.


Effects of various copper sources on copper bioavailability in broiler chickens. B. J. Min*, R. A. Samford, S. J. Park, S. W. Kim, North Carolina State University, Raleigh, Texas Tech University, Lubbock, Albion Advanced Nutrition, Clearfield, UT.


Effects of dietary selenium on expression of selenoproteins and activity of antioxidant enzymes in endocrine tissues of growing male pigs. J. C. Zhou, J. G. Li, K. N. Wang, X. Xia, Y. J. Zhang, Y. Liu, Y. Zhao, and X. G. Lei, North Carolina State University, St. Charles, MO.


ASAS Early Career Achievement Award: Introduction.

ASAS Early Career Achievement Award Presentation: Balancing amino acids for reproductive performance of sows. S. W. Kim*, North Carolina State University, Raleigh.

Adaptation of protein metabolism to changes in lysine intake in growing pigs. J. J. G. Van den Borne, Wageningen University, Wageningen, the Netherlands.


Metabolizable energy and nitrogen-corrected metabolizable energy of meat and bone meal for pig. O. A. Olukosi and O. Adeola, Purdue University, West Lafayette, IN.

Amino acid and energy digestibility in soybean meal from high-protein and low-oligosaccharide varieties of soybeans fed to growing pigs. K. M. Baker and H. H. Stein, University of Illinois, Urbana.
Tuesday, July 8, 2008

4:45 PM 209  Standardized ileal amino acid digestibilities in grain legumes for pigs. D. Jezierny*, R. Mosenthin1, M. Eklund1, and M. Rademacher2, 1University of Hohenheim, Stuttgart, Germany, 2Evonik Degussa GmbH, Hanau-Wolfgang, Germany.

5:00 PM 210  True ileal amino acid digestibility in cecctomized roosters and lysine bioavailability in chicks fed distillers dried grains with solubles. A. A. Palm*, J. E. Pettigrew, C. S. Scherer, D. H. Baker, C. M. Parsons, and H. H. Stein, University of Illinois, Urbana.

Ruminant Nutrition
Growing Youngstock, Calves and Heifers
Chair: Cathy Bandyk, QLF
Sagamore Ballroom 4


2:15 PM 212  Relationships between residual feed intake and carcass-quality traits in Santa Gertrudis steers. F. R. B. Ribeiro*1, R. K. Miller1, E. G. Brown2, P. A. Lancaster1, L. O. Tedeschi1, S. Moore1, D. DeLaney1, and G. E. Carstens2, 1Texas A&M University, College Station, 2Stephen F. Austin State University, Nacogdoches, TX, 3King Ranch, Kingsville, TX.

2:30 PM 213  Predicting water intake by yearling steers during the summer. J. L. Lacey*, J. J. Wagner, and T. E. Engle, Colorado State University, Fort Collins.

2:45 PM 214  Combinations of steam-flaked corn, dry-rolled corn, and dried corn distiller’s grains with solubles for feedlot heifers. P. L. Black*, G. L. Parsons1, M. K. Shelor1, K. K. Karges2, M. L. Gibson2, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2Dakota Gold Research Association, Sioux Falls, SD.

3:00 PM 215  Cow live weight is negatively related to feed efficiency of cow/calf pairs from birth to weaning1. T. Z. Albertini*2, S. R. de Medeiros1, R. A. de A. Torres Junior1, and D. P. D. Lanna1, 1Fapesp, Embrapa, 2ESALQ-USP, Piracicaba, SP, Brazil, 3Embrapa Beef Cattle, Campo Grande, MS, Brazil.


3:30 PM 217  The effects of controlled feeding a high concentrate or high forage diet at four nitrogen intakes on nitrogen utilization in dairy heifers. G. I. Zanton* and A. J. Heinrichs, The Pennsylvania State University, University Park.

3:45 PM 218  Effects of ractopamine HCl on growth performance and carcass characteristics of feedlot heifers. J. W. Homm*, W. J. Platter1, M. J. Corbin1, J. J. Wagner2, N. E. Davis2, J. S. Drouillard1, and C. E. Walker1, 1Elanco Animal Health, Greenfield, IN, 2Colorado State University, Ft. Collins, 3Kansas State University, Manhattan.

4:00 PM 219  Interaction of growing and finishing production system and sorting by weight. D. R. Adams*, T. J. Klopfenstein, G. E. Erickson, M. K. Luebbe, and J. R. Benton, University of Nebraska, Lincoln.

4:15 PM 220  Effect of the addition of plant extracts (Queen of Calves) to milk and differing levels of milk on gastrointestinal tract development of calves. J. K. Margerison*, A. J. Heinrichs, G. W. Reynolds, and R. Laven, Massey University, Palmerston North, New Zealand.

4:30 PM 221  Determination of the optimal amino acid concentration in milk replacers for calves less than five weeks of age. T. M. Hil1, H. G. Bateman, II1, J. M. Aldrich1, R. L. Schlotterbeck1, and K. G. Tanan1, 1Akey, Lewisburg, OH, 2Provimi, Brussels, Belgium.

SYMPOSIUM
Ruminant Nutrition and Production, Management & Environment Joint Symposium
Designing Field Studies to Evaluate Nutrition Effects on Production, Reproduction and Health of Dairy Cows
Chair: Bill Sanchez, Diamond V Mills
Sponsor: Church and Dwight Co., Inc./Arm & Hammer Animal Nutrition, and Diamond V Mills
Sagamore Ballroom 3

2:00 PM 222  Introduction. W. K. Sanchez, Diamond V Mills, Tigard, OR.

2:05 PM 222  Utilizing appropriate statistical designs and techniques for data collected from commercial dairies. R. J. Tempelman*, Michigan State University, East Lansing.

2:45 PM 223  Examples of experimental designs to study production responses. N. R. St-Pierre*, The Ohio State University, Columbus.
3:15 PM 224 Field studies to study reproduction in dairy cows. J. D. Ferguson*, University of Pennsylvania, Kennett Square.

3:45 PM 225 Examples of designs to study health responses and the role of meta-analysis. I. J. Lean*, A. R. Rabiee1, and T. F. Duffield2, 1Bovine Research Australasia, Camden, NSW, Australia, 2University of Guelph, Guelph, Ontario, Canada.

4:15 PM 226 Collecting research data with dairy management software. L. Jones*, FARME Institute Inc., Homer, NY.

SYMPOSIUM
Small Ruminant
The US Goat Meat Industry and Recent Sheep and Goat Activities at the National Research Council of The National Academies

Chair: David L. Thomas, University of Wisconsin-Madison
Sponsors: AMPA and European Association of Animal Production

103

2:00 PM Welcome. D. L. Thomas, University of Wisconsin, Madison.

2:05 PM 227 Goat meat production, processing, and marketing in the US. K. W. McMillin*, Louisiana State University Agricultural Center, Baton Rouge.

2:30 PM Questions


2:45 PM 228 New NRC recommendations for energy and protein requirements of goats and sheep. B. W. Hess*, University of Wyoming, Laramie.

3:10 PM 229 The Small Ruminant Nutrition System (SRNS) model for prediction of energy and protein requirements of goats and sheep. A. Cannas*, L. O. Tedeschi, A. S. Atzori, and D. G. Fox, 1University of Sassari, Sassari, Sardinia, Italy, 2Texas A&M University, College Station, 3Cornell University, Ithaca, NY.

3:35 PM Questions


4:10 PM 231 Marketing of sheep products: Situation, challenges, and opportunities. G. Williams*, Texas A&M University, College Station.

4:35 PM Questions

ADSA-SAD
Undergraduate Competition Original Research

Chair: Kas Ingawa, NCSU DRMS

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3:15 PM 232 Milk production, calving, and calf health in lines of dairy cattle selected for high versus low dairy form. M. B. Kron* and M. M. Schutz, Purdue University, West Lafayette, IN.


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<td>4:45 PM</td>
<td>238</td>
<td>Evaluation of rumen microbial digestion of corn stover with cellulose treatment.</td>
<td>B. Bosma*, R. Jimenez-Flores, J. Howard, California Polytechnic State University, San Luis Obispo.</td>
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<td>5:00 PM</td>
<td>239</td>
<td>Change in the prevalence of mastitis pathogens in an organic dairy farm as it transitioned from a conventional dairy farm.</td>
<td>W. M. McMahan*, L. K. Larry, Washington State University, Pullman.</td>
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**Companion Animals Graduate Student Competition - Companion and Exotic Animal Biology**
Chair: Kelly Swanson, University of Illinois

**Wednesday, July 9**

**POSTER PRESENTATIONS**

**Animal Health**

**Immunology**

Exhibit Hall CDE

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<tr>
<td>W4</td>
<td>Animal performance and blood gas variables of steers pulled and/or treated for Bovine Respiratory Disease.</td>
<td>K. M. Bischoff*, L. Carlos-Valdez, B. P. Holland, L. O. Burciaga-Robles, D. L. Step, C. R. Krehbiel, Oklahoma State University, Stillwater.</td>
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<tr>
<td>W5</td>
<td>Relationship between total microbial colostrum contamination and IgG absorption in newborn dairy calves.</td>
<td>M. Terre*, A. Bach, IRTA-Unitat de Remugants, Barcelona, Spain, ICREA, Barcelona, Spain.</td>
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<tr>
<td>W6</td>
<td>Comparison of growth, feed intake, and feed efficiency of female calves fed aureomycin plus lasalocid or monensin.</td>
<td>G. E. Higginbotham*, R. C. Chebel, L. Pereira, University of California, Fresno, University of California-Davis, Tulare, California State University, Fresno.</td>
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<tr>
<td>W7</td>
<td>An international survey on the occurrence of mycotoxins in dried distillers grains with solubles.</td>
<td>U. Hofstetter*, U. Pichler, Biomin GmbH, Herzogenburg, Austria, Quantas Analytics GmbH, Tulln, Austria.</td>
<td></td>
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<tr>
<td>W8</td>
<td>Incubation temperatures affect secretion of TNF-alpha and IL-6 by peripheral blood mononuclear cells from Brown and Holstein cows.</td>
<td>N. Lacetera*, M. Amadori, U. Bernabucci, A. Nardone, Dipartimento di Produzioni Animali, Viterbo, Italy, Istituto Zooprofilattico Sperimentale Lombardia-Emilia Romagna, Brescia, Italy.</td>
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<tr>
<td>W11</td>
<td>Effect of rubber flooring on leukocyte activation during the periparturient period.</td>
<td>K. O’Driscoll*, M. M. Schutz, S. D. Eicher, Teagasc, Fermoy, Ireland, NUI Dublin, Dublin, Ireland, Purdue University, West Lafayette, IN, USDA-ARS, West Lafayette, IN.</td>
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W14 Genetic analysis of dairy calf health traits and survival. L. Henderson*1, F. Miglior2,3, D. Kelton1, J. Robinson1, J. Wormuth1, A. Sewalem2,3, and K. Leslie1, 1University of Guelph, Guelph, ON, Canada, 2Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Canadian Dairy Network, Guelph, ON, Canada, 4University of Guelph, Guelph, ON, Canada, 5CY Heifer Farms, Batavia, NY.

Beef Species
Exhibit Hall CDE

W15 Performance and carcass alteration of Nellore and F1 Brangus × Nellore steers supplied with organic chromium finished on grass. A. Polizel Neto*1, A. M. Jorge1, P. S. A. Moreira2, H. F. B. Gomes3, and R. D. O. Roça4, 1São Paulo State University, Botucatu, São Paulo, Brazil, 2Federal University of Mato Grosso, Sinop, Mato Grosso, Brazil.

W16 Carcass and beef traits of Nellore and F1 Brangus × Nellore steers supplied with organic chromium finished on grass. A. Polizel Neto*1, P. S. A. Moreira2, A. M. Jorge1, H. F. B. Gomes3, and R. D. O. Roça4, 1São Paulo State University, Botucatu, São Paulo, Brazil, 2Federal University of Mato Grosso, Sinop, Mato Grosso, Brazil.

W17 Estimation of some effects on longevity of beef cows using survival analysis. F. Szabó* and I. Dáky, University of Pannonia, Kezthely, Hungary.

W18 Evaluation of MultiMin™ to enhance weaned calf productivity. A. E. Fisher*1, W. W. Gill2, C. D. Lane3, R. L. Ellis4, S. B. Blezinger5, and G. M. Pighetti6, 1University of Tennessee, Knoxville, 2University of Tennessee, Greeneville, 3Middle Tennessee State University, Murfreesboro, 4MultiMin USA, Inc., Sulphur Springs, TX.

W19 Variation of MUFA ratio in several muscles of Japanese Black cattle cloned from somatic cells. Y. Nakahashi*, T. Okumura, M. Hada, Y. Fujisshima, K. Yamauchi, S. Hidaka, and K. Kuchida, 1Obihiro University of A & VM, Obihiro-Shi, Hokkaido, Japan, 2National Livestock Breeding Center Tokachi Station, Otofuke-Cho, Hokkaido, Japan, 3The Ministry of Agriculture, Forestry and Fisheries of Japan, Chiyoda-Ku, Tokyo, Japan.


W22 Evaluation of methods to estimate individual intakes of cattle fed in group pens. G. D. Cruz*, J. W. Oltjen, and R. D. Sainz, 1University of California, Davis.


W24 Relationship between residual feed intake and reproductive performance in Brangus heifers. P. A. Lancaster*, G. E. Carstens, P. Chen, D. W. Forrest, T. H. Welsh, Jr., R. D. Rande, and T. D. A. Forbes, 1Texas A&M University, College Station, 2Texas AgriLife Research, Overton, TX, 3Texas AgriLife Research, Uvalde, TX.

W25 Fatty acid profile, meat cholesterol and total lipids of Bos indicus based types bullocks fed monensin or polyclonal antibodies against lactate-producing rumen bacteria. M. V. Fossa1,2, R. D. L. Pacheco3,4, D. D. Millen1,2, T. M. da Cunha Leme1, M. P. de Oliveira2, C. R. de Oliveira2, A. E. Mathias1, J. C. Hadlich1, A. DiCostanzo2, N. DiLorenzo3, M. De Beni Arrigoni1, C. L. Martins1, M. Parrilli1, and S. A. Matsuhara1, 1FMVZ/UNESP, Botucatu, São Paulo, Brazil, 2Supported by EAPESP, São Paulo, São Paulo, Brazil, 3University of Minnesota, Saint Paul.

W26 Evaluation of growth, carcass characteristics and meat tenderness of bullocks fed monensin or polyclonal antibodies against lactate-producing rumen bacteria. R. D. L. Pacheco3,4, D. D. Millen1,2, T. M. da Cunha Leme1, C. R. de Oliveira2, A. E. Mathias1, J. C. Hadlich1, A. DiCostanzo2, N. DiLorenzo3, M. De Beni Arrigoni1, C. L. Martins1, S. A. Matsuhara1, M. Parrilli1, M. V. Fossa1, J. P. S. T. de Bastos1, T. M. Mariani1, 1FMVZ/UNESP, Botucatu, São Paulo, Brazil, 2Supported by EAPESP, São Paulo, São Paulo, Brazil, 3University of Minnesota, Saint Paul.

W28 Analysis of some environmental factors for growth parameters obtained from Gompertz nonlinear model in Kurdi sheep breed of Iran. H. Farhangfar*, D. A. Saghi², and M. H. Fathi Nasri³, ¹Birjand University, Birjand, Iran, ²Agricultural Research Centre, Mashhad, Iran.

W29 Response surface regression analysis to locate optimal minimum age at sexual maturity based on body weights at weeks 8 and 12 for indigenous chicken in Khorasan province of Iran. H. Farhangfar*, M. E. Hosseini, and S. M. Navidzadeh, ¹Birjand University, Birjand, Iran.

W30 Estimates of genetic parameters for direct and maternal effects on growth traits and fleece weight of Angora goat (Markhoz) in Iran. M. B. Zandi*, S. R. Miraei Ashtiani¹, M. Moradi Shahrbabak¹, and A. Rashidi¹, ¹Tehran University, Karaj, Tehran, Iran, ²Kurdistan University, Sanandaj, Iran.

W31 Comparison and estimation factors affected body weight traits in the Markhoz breed of goats. M. B. Zandi*, M. A. Syed Reza¹, M. Moradi Shahrbabak¹, and R. Amir¹, ¹Tehran University, Karaj, Tehran, Iran, ²Kurdistan University, Sanandaj, Iran.

W32 Weaning results of Simmental beef calves. F. Szabó* and S. Bene, ¹University of Pannonia, Keszthely, Hungary.

W33 Genotype and environment interaction of weaning results of Simmental calves. A. Fördös and F. Szabó*, ¹University of Pannonia, Keszthely, Hungary.

W34 Genetic association between age and litter traits at first farrowing in a commercial Pietrain-Large White population raised in an open-house system in Thailand. P. Pholsing¹, S. Koonawootrittriron¹, T. Suwanasopee¹, and M. A. Elzo*, ¹Kasetsart University, Bangkok, Thailand, ²University of Florida, Gainesville.

W35 Factors affecting plasma cholesterol, lipoproteins, and triglycerides in growing pigs of various breed compositions raised under Thai tropical conditions. S. Koonawootrittriron¹, T. Suwanasopee¹, and M. A. Elzo*, ¹Kasetsart University, Bangkok, Thailand, ²University of Florida, Gainesville.

W36 Multibreed beef cattle breeding value estimation based on weaning results. Sz. Bene¹, I. Komlósi², Zs. Fekete¹, Z. Lengyel¹, and F. Szabó*, ¹University of Pannonia, Keszthely, Hungary, ²University of Debrecen, Debrecen, Hungary.

W37 Effect of breed composition, phenotypic residual feed intake, temperament, and ELISA scores for paratuberculosis on phenotypic residual feed intake and growth in an Angus-Brahman multibreed herd. M. A. Elzo*, D. G. Riley¹, G. R. Hansen¹, D. D. Johnson¹, R. O. Myer¹, D. O. Rae¹, J. G. Wasdin¹, and J. D. Driver¹, ¹University of Florida, Gainesville, ²USDA-ARS STARS, Brooksville, FL, ³North Carolina State University, Plymouth, ⁴North Florida Research and Education Center, Marianna, FL.

W38 Association between breed composition, phenotypic residual feed intake, temperament, ELISA scores for paratuberculosis, and ultrasound carcass traits in an Angus-Brahman multibreed herd. M. A. Elzo*, D. G. Riley¹, G. R. Hansen¹, D. D. Johnson¹, R. O. Myer¹, D. O. Rae¹, J. G. Wasdin¹, and J. D. Driver¹, ¹University of Florida, Gainesville, ²USDA-ARS STARS, Brooksville, FL, ³North Carolina State University, Plymouth, ⁴North Florida Research and Education Center, Marianna, FL.

W39 Relationship between carcass traits and phenotypic residual feed intake, breed composition, temperament, and ELISA scores for paratuberculosis in an Angus-Brahman multibreed herd. M. A. Elzo*, D. D. Johnson¹, D. G. Riley¹, G. R. Hansen¹, R. O. Myer¹, D. O. Rae¹, J. G. Wasdin¹, and J. D. Driver¹, ¹University of Florida, Gainesville, ²USDA-ARS STARS, Brooksville, FL, ³North Carolina State University, Plymouth, ⁴North Florida Research and Education Center, Marianna, FL.

W40 Genotype × environmental interaction to Nellore cattle raised in two Brazilian regions. J. C. DeSouza*, L. O. C. DaSilva², J. A. DeFreitas¹, C. H. M. Malhado¹, A. Gondo¹, P. B. Ferraz Filho¹, R. L. Weaber¹, and W. R. Lamberson¹, ¹Parana Federal University, Palotina Campus, PR, Brazil, ²Embrapa Beef Cattle Research Company, CNPGC, Campo Grande, MS, Brazil, ³South East of Bahia University, Jequie, BA, Brazil, ⁴State University of Mato Grossso do Sul, Tres Lagoas, MS, Brazil, ⁵University of Missouri, Columbia.

W41 Comparison of different nonlinear functions to describe beef cattle growth. L. G. Albuquerque*, S. Forni¹, M. Piles², A. Blasco³, L. Varona³, H. N. Oliveira⁴, and R. B. Lobo⁵, ¹Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil, ²Universidade de Sao Paulo, Ribeirao Preto, Sao Paulo, Brazil, ³Universidade de Sao Paulo, Jaboticabal, Sao Paulo, Brazil, ⁴National Counsel of Technological and Scientific Development - CNPq, Brasilia, DF, Brazil.

W42 Principal component analysis of body measurements of Hanwoo. J. J. Lee* and N. S. Kim, ¹Chungbuk National University, Republic of Korea.

W43 Analysis of growth trait in Brazilian Simmental. M. G. Dib*, F. R. Araujo Neto¹, L. F. A. Marques¹, and H. N. de Oliveira¹, ¹Faculdade de Medicina Veterinária e Zootecnia - UNESP, Botucatu, SP, Brazil, ²Faculdade de Ciências Agrárias e Veterinárias - UNESP, Jaboticabal, SP, Brazil, ³Centro de Ciências Agrárias - UFESb, Alegre, ES, Brazil.

W44 Relationship between ultrasonically measured beef cow carcass traits and lifetime productivity. L. A. Pacheco*, J. R. Jaeger, D. W. Moser, and K. C. Olson, ¹Kansas State University, Manhattan.

W46 An approach for considering genotype × environment interaction in the genetic evaluations of Zebu beef cattle in Brazil. L. O. C. Silva**, S. Tsuruta*, J. K. Bertrand*, A. Gondo*, P. R. C. Nobre*, R. A. A. Torres Jr., and C. H. C. Machado*, University of Georgia, Athens, GA. EMBRAPA Beef Cattle, Campo Grande, Brazil, National Council for Scientific and Technological Development, Brasília, Brazil; Foundation for Agric. and Environment Research, Campo Grande, Brazil; Brazilian Association of Zebu Breeders, Uberaba, Brazil.


W56 Differential expression of cyclic AMP-responsive element modulator (CREM) transcription factor isoforms during boar spermatogenesis and in transcriptionally silent boar spermatozoa. S. Green* and B. L. Sartini, University of Rhode Island, Kingston.

W57 Molecular analysis of the Mexican hairless pig in the Yucatan Peninsula. F. Cetz-Solis*, A. Sierra-Vasquez*, A. Da Silva-Mariante, S. Rezende-Paiva*, C. Cruz-Vazquez*, and C. Lemus-Flores*, Instituto Tecnologico de Conkal, Conkal, Yucatan, Mexico; Instituto Tecnologico el Llano, Aguascalientes, Mexico; Universidad Autonoma de Nayarit, Tepic, Nayarit, Mexico; Embrapa Cenargen, Brasilia, DF, Brazil.

Companion Animals

Companion and Exotic Animal Biology

Exhibit Hall CDE


W60 Diagnostic potential of serum proteomic patterns in canine Fusarium mycotoxicosis. M. C. K. Leung* and T. K. Smith, University of Guelph, Guelph, ON, Canada.
**Dairy Foods**

**Milk, Dairy Food Chemistry and Microbiology**

**Exhibit Hall CDE**


**W67** Changes in fatty acid profiles of Awassi ewe and Damascus goat colostrums during ten days postpartum. Z. Guler*, M. Keskin, S. Gül, and Y. W. Park, *Mustafa Kemal University, Antakya, Hatay, Turkey,  Fort Valley State University, Fort Valley, GA.*

**W68** Interaction between β-lactoglobulin and dextran sulfate at near neutral pH and their effect on thermal stability. B. Vardhanabhuti, E. A. Foegeding, U. Yuce, and J. Coupland, *North Carolina State University, Raleigh, Pennsylvania State University, University Park.*

**W69** Using lactic acid bacteria to detect chemical substances in milk. A. AbuGhazaleh* and S. Ibrahim, *Southern Illinois University, Carbondale, North Carolina A&T University, Greensboro.*

**W70** Development of symbiotic low fat buffalo milk yogurt. X. Han* and M. Guo, *University of Vermont, Burlington, Harbin Institute of Technology, Harbin, China.*


**W74** Hysteresis of buffer capacity curves of cow, goat and sheep milks. J. Li*, M. Corredig, and A. Hill, *University of Guelph, Guelph, ON, Canada.*

**W75** Effects of yogurt fermentation bacteria on milk-based bioactive peptides. M. Paul and G. Somkuti*, *USDA-ARS-ERRC, Wyndmoor, PA.*

**W76** Simplified petrifilm assay for lactococcus phage. Y. C. Tseng* and C. L. Hicks, *University of Kentucky, Lexington.*

**W77** Construction of an integrative vector for recombinant gene expression in *Streptococcus thermophilus*. J. A. Renye* and G. A. Somkuti, *USDA-ARS-ERRC.*

**W78** Fresh style panela cheese as a vehicle for probiotics and resistant starch. M. C. Escobar-Ramirez*, S. L. Amaya-Llano, M. Singh, and M. J. Miller, *PROPAC, Universidad Autónoma de Querétaro, Queretaro, Qro, Mexico, National Center for Agricultural Utilization Research, Peoria, IL, University of Illinois, Urbana.*


**W80** Characterization of *Streptococcus thermophilus* isolates from traditional Turkish yogurts. N. Altay* and G. C. Gurakan, and J. L. Steele, *Middle East Technical University, Ankara, Turkey, Selcuk University, Konya, Turkey, University of Wisconsin, Madison.*
Forages and Pastures II
Exhibit Hall CDE


Effects of one-seed juniper on intake, rumen fermentation, and plasma amino acids in sheep and goats fed supplemental protein. S. A. Utsumi¹, A. F. Cibils¹, R. E. Estell²*, S. Soto-Navarro¹, and D. M. Hallford¹, ¹New Mexico State University, Las Cruces, ²USDA/ARS Jornada Experimental Range, Las Cruces, NM.

Effects of one-seed juniper and polyethylene glycol on intake, rumen fermentation, and plasma amino acids in sheep and goats fed supplemental protein and tannins. S. A. Utsumi¹, A. F. Cibils¹, R. E. Estell²*, S. Soto-Navarro¹, and D. M. Hallford¹, ¹New Mexico State University, Las Cruces, ²USDA/ARS Jornada Experimental Range, Las Cruces, NM.


Nutritive evaluation of three browse tree foliages during rain and dry seasons: Total tannins and in situ digestibility in cattle and goats. R. Rojo¹, D. López¹, F. Vázquez¹, O. Vázquez², B. Albarrán¹, S. Rebollar¹, J. Hernández¹, D. Cardoso¹, F. González¹, E. Dorantes¹, F. Avilés¹, A. García¹, and C. Narciso¹, ¹Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, ²Colegio de Postgraduados, Córdoba, Veracruz, México.

Effect of fodder tree species, season, and inoculum source on in vitro gas production from foliage. L. M. Camacho¹*, R. Rojo¹, G. D. Mendoza¹, F. Avilés¹, D. López¹, D. Cardoso¹, S. Rebollar¹, and N. Pescador¹, ¹Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, ²Universidad Autónoma Metropolitana, Distrito Federal, México.

Ozone and nitrogen deposition effects on nutritive quality of a species-rich subalpine grassland. M. K. Cline*, J. C. Lin¹, K. Nadarajah¹, M. Volk², R. B. Muntifering¹, S. Bassin², and J. Fuhrer², ¹Auburn University, Auburn, AL, ²Swiss Federal Research Station for Agroecology and Agriculture, Zurich, Switzerland.
Nonruminant Nutrition
Carbohydrate and Lipids
Exhibit Hall CDE

W114 Effect of xylanase supplementation to wheat-rye based diet on the energy availability and the performance of ducks. L. Babinszky*, J. Tossenberger1, and I. Kühni*, 1Kaposvár University, Kaposvár, Hungary, 2AB Enzymes GmbH, Darmstadt, Germany.

W115 Effect of phytase supplementation of the diets on the digestibility and urinary excretion of phosphorous and calcium in weaned piglets. J. Tossenberger1, I. Kühni*, and L. Babinszky*, 1Kaposvár University, Kaposvár, Hungary, 2AB Enzymes GmbH, Darmstadt, Germany.

Wednesday, July 9, 2008

W117 Digestible and metabolizable energy content of high-oil corn for growing pigs. Y. L. Ma*, C. L. Cromwell1, M. D. Lindemann, and K. E. Nestor Jr., 1University of Kentucky, Lexington, 2Mycogen Seed, Indianapolis, IN.


W120 Performance of weanling pigs offered low, medium or high lactose diets supplemented with a seaweed extract from Laminaria spp. D. A. Gahan1, M. B. Lynch1, J. J. Callan1, J. T. O’Sullivan2, and J. V. O’Doherty*, 1University College Dublin, Ireland, 2Bioatlantis Ltd, Ireland.


W123 The effect of dietary starch sources on the performance, nutrients digestibility and blood biochemical parameters in growing pigs. Q. Z. Dai1, Y. Yin*, R. Huang1, and T. Li, Laboratory of Animal Nutrition and Health and Key Laboratory of Subtropical Agro-ecology, Institute of Subtropical Agriculture, Changsha, Hunan, P. R. China, 1Institute of Animal Science, Changsha, Hunan, P. R. China.

W124 The effect of dietary starch sources on amino acids portal flow and balance in growing pigs. W. Wang, Y. Yin*, R. Huang, and T. Li, Institute of Subtropical Agriculture, Changsha, Hunan, P. R. China.

W125 Intravenous glucose tolerance test in Ningxiang pigs. X. F. Kong1, M. J. Bo1, X. Y. Song1, Y. L. Yin*, B. E. Tan1, Z. Q. Liu1, H. J. Xu1, W. J. Tang1, F. G. Yin1, and G. Y. Wu1, 2The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 3Texas A&M University, College Station.

W126 Evaluation of nutrient equivalency values of nattuzyme for broiler chickens. M. Majeddin*, M. Zargari, and H. Moravej, Tehran University, Karaj, Tehran, Iran.

W127 In vitro fermentation of diets incorporating different levels of carob pulp by rabbit cecal fluid. G.-B. Aziza*, B. Ridha1, K. Abdelhamid2, M.-L. Maria-Rosa3, and K. Abdeljabbar1, 1INAT, Tunis, Tunisia, 2INGREF, Institut National des Recherches en Génie Rural, Eaux et Forêts, Tunis, Tunisia, 3Escuela Politécnica Superior, Universidad de Santiago de Compostela, Lugo, Spain.

W128 Dietary fiber decreases fecal nutrient digestibility and ammonia emission in growing swine, but increases odor emission and odor intensity in air. W. Zhang1, E. van Heugten*, T. van Kempen2, V. Fellner1, and P. Käi1, North Carolina State University, Raleigh, Provimi RIC, St. Stevens Woluwe, Belgium, 2University of Aarhus, Horsens, Denmark.

W129 Effects of different fiber level diets on normal microbiological florals in goose intestines. M. A. Zhang, B. W. Wang*, B. Yue, F. Y. Long, X. P. Wu, and X. H. Jia, Qingdao Nongye University, Qingdao, Shandong Province, China.


W133 Conjugated linoleic acid and tryptophan supplementation improve immune response of weaned piglets. J. Morales1, R. Gatnau2, and C. Pineiro*, 1PigCHAMP Pro Europa, SA, Segovia, Spain, 2Molimen, Barcelona, Spain.

W134 Effect of conjugated linoleic acid on immune function and nutrition composition of duck. B. W. Wang*, Y. C. Wang, M. A. Zhang, B. Yue, L. Z. Jing, X. X. Wei, and G. I. Liu, Qingdao Nongye University, Qingdao, Shandong Province, China.

W135 Efficiency of retention and conversion of α-linolenic acid (ALA) to other n-3 fatty acids (FA) in the whole body of growing gilts is reduced over time. H. R. Martinez-Ramirez* and C. F. M. de Lange, University of Guelph, Guelph, ON, Canada.

**W137**  
Effects of dietary coconut fat powder supplementation on performance, nutrient digestibility and blood and milk characteristics in lactating sow. W. T. Kim1, J. H. Cho1, Y. J. Chen1, S. S. Yoo2, S. O. Shin1, Y. Haung1, J. D. Hancock1, C. Y. Lee1, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2Kansas State University, Manhattan, 3Jinju National University, Gyeongnam, Korea.

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**W138**  
Use of glycerol for glucose, glycogen and non-essential amino acid synthesis by embryos from small and large chicken eggs. N. E. Sunny, J. Moorefield, S. L. Owens, and B. J. Bequette*, University of Maryland, College Park.

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**W139**  

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**W140**  
Effect of different dietary protein levels on lipid metabolism of subcutaneous adipose tissue in lean-type and fat-type fattening pigs. W. T. Gu1, T. L. Liu2, P. W. Xu2, M. J. Bo2, H. J. Xu1, Y. L. Yin1*, X. F. Kong1, T. J. Li1, Z. Q. Liu1, W. J. Tang1, and R. L. Huang1, 1The Chinese Academy of Sciences, Changsha, Hunan, P.R.China, 2Wuhan Polytechnic University, Wuhan, China.

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**W141**  

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**W142**  
Mathematical simulation to assess the validity of Bonnier's equation for estimating the frequency of monozygous twinning in a population of Holstein cattle. N. Silva del Rio*, G. A. Broderick2, and P. M. Fricke1, 1University of Wisconsin, Madison, 2US Dairy Forage Research Center, Madison, WI.

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**W143**  
Activated caspase-3 activity in the bovine fetal ovary. N. M. Barkley*, M. F. Smith, and H. A. Garverick, University of Missouri, Columbia.

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**W144**  
Multiple fibroblast growth factors stimulate interferon-tau production in bovine trophectoderm. K. A. Pennington* and A. D. Ealy, University of Florida, Gainesville.

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**W145**  
Identification and characterization of three MX1 isoforms in sheep. D. S. Clark*1, K. Williams2, and T. L. Ort1, 1Pennsylvania State University, University Park, 2University of Idaho, Moscow.

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**W146**  
Effects of nutrient restriction during early gestation on postnatal calf growth. C. L. Bailey*, M. J. Prado-Cooper, E. C. Wright, and R. P. Wettemann, Oklahoma Agricultural Experiment Station, Stillwater, OK.

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**W147**  

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**W148**  
Effect of age at first calving on milk production and days open in first-parity Iranian Holstein dairy cows. A. Heravi Moussavi*, M. Danesh Mesgaran, and R. Noorbakhsh, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

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**W149**  
Changes in muscle proteome of dairy cattle with onset of lactation. P. J. Tyler*, K. A. Cummins, D. M. Carpenter, and R. Sabharwal, Auburn University, Auburn, AL.

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**W150**  
Immunostereilization of bitches with an anti-LHRH vaccine using CpG oligodeoxynucleotide as an adjuvant. R. Zanella 1, M. Ragagnin de Lima*4, J. Reeves1, V. Conforti2, D. DeAvila1, A Ferreira Marques4, S. A. Messina1, R Bogden3, and E. L. Zanella4, 1Cincinnati Zoo & Botanical Garden, Cincinnati, OH, 2Amplicon Express, Pullman, WA, 3Universidade de Passo Fundo, Passo Fundo, RS, Brazil.

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**W151**  
Ovarian follicular dynamics during the interovulatory interval in Najdi goats. H. Kohram*1,2, S. Gooraninejad2, A. Motaghed2, G. Mohammadi1, and E. Dirandeh1, 1Tehran University, Karaj, Tehran, Iran, 2Shahid Chamran University, Abuz, Khoozestan, Iran.

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**W152**  
Alteration of ovarian follicular dynamics by GnRH in water buffaloes. H. Kohram*1,2, G. Mohammadi1, and E. Dirandeh1, 1Tehran University, Karaj, Tehran, Iran, 2Shahid Chamran University, Abuz, Khoozestan, Iran.

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W154 Plasma progesterone concentrations determined by commercial radioimmunoassay kit as puberty criteria for Brahman-crossbred heifers. R. F. Cooke*,1, B. R. Austin,1 and J. D. Arthington,1 1University of Florida - IFAS, Range Cattle Research and Education Center, Ocala, 2University of Florida - IFAS, Animal Sciences, Gainesville.

W155 Progesterone concentration during follicular development affects follicular fluid composition and uterine release of PGF2a in dairy cows. R. L. A. Cerri*,1, F. Rivera1, C. D. Narciso1, R. A. Oliveira1, R. C. Chebel1, M. A. Amstalden1, W. W. Thatcher1, and J. E. P. Santos1, 1University of Florida, Gainesville, 2University of California, Tulare, 3Texas A&M University, College Station.

W156 Evidence that the diminished production of progesterone during estrous cycles of cattle with a low antral follicle count during follicular waves is repeatable and not caused by alterations in size of the corpus luteum. F. Jimenez-Krassel*,1 J. K. Folger1, G. W. Smith1, P. Lonergan2, A. C. O. Evans3, and J. J. Ireland3, 1Michigan State University, East Lansing, 2University College Dublin, Dublin, Ireland.


W159 Effect of the third use of CIDRs on the pregnancy rate of beef cattle. W. A. Greene* and M. L. Borger, The Ohio State University, Wooster, OH.


W163 Effect of duration of CIDR exposure on reproductive performance of beef heifers using a CIDR-based timed-AI protocol. A. Ahmadzadeh*,1, D. Gunü1, and B. Glaza1, 1University of Idaho, Moscow, 2University of Idaho Extension, Fort Hall, 3University of Idaho Extension, Twin Falls.

W164 A field trial comparison of first service conception rates of Ovsynch-56 and CO-Synch-72 protocol in lactating dairy cattle. R. L. Nebel*,1, J. M. DeJarnette1, M. R. Hershey1, D. A. Whitlock1, and C. E. Marshall1, 1Select Sires Inc., Plain City, OH, 2Select Sire Power, Rocky Mount, VA.

W165 Effect of supplemental FSH during ovsynch in high producing Holstein cows. H. Ayres*,1, R. M. Ferreira1,2, A. P. Cunha*,1, R. R. Araújo1, and M. C. Wiltbank1, 1University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil, 2University of Wisconsin, Madison.

W166 Administering human chorionic gonadotropin (hCG) 7 d prior to initiating a CO-Synch protocol. C. R. Dahlen*,1, G. Marquezini2, A. DiCostanzo2, S. L. Bird3, and G. C. Lamb4, 1University of Minnesota, Crookston, 2University of Minnesota, St.Paul, 3University of Minnesota, Grand Rapids, 4University of Florida, Marianna.

W167 Effect of human chorionic gonadotropin (hCG) on ovarian structure dynamics and concentrations of progesterone in cycling Holstein heifers. C. R. Dahlen* and G. C. Lamb1, 1University of Minnesota, Crookston, 2University of Florida, Marianna.

W168 Factors affecting ovulatory follicle size following follicular wave synchrony in beef heifers. J. A. Atkins, C. L. Johnson*, and M. F. Smith, University of Missouri, Columbia.

W169 Early postpartum treatment of dairy cows with GnRH does not improve fertility. A. Ata and M. S. Gulay*, 1Mehmet Akif Ersoy University, Burdur, Turkey.

W170 Factors associated with ovulatory follicle growth rate and diameter in postpartum beef cows. J. A. Atkins*,1, T. W. Geary2, and M. F. Smith1, 1University of Missouri, Columbia, 2USDA ARS, Ft. Keogh, Miles City, MT.

W171 Effect of reducing the period of follicle dominance in a timed AI protocol on reproduction of dairy cows. R. C. Chebel*,1, F. Rivera1, C. Narciso1, W. W. Thatcher2, and J. E. P. Santos2, 1University of California, Davis, 2University of Florida, Gainesville.

### Production, Management and the Environment

**Nutrient and Animal Management**

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Timing of herbage allocation on milk production and composition in mid-lactation dairy cows in winter. M. Vaccaro 2, F. Luparia1, C. A. Cangiano1, M. Vaccaro 2, F. Luparia1, C. A. Cangiano1, University of Guelph, Kemptville, ON, Canada, 2The University of British Columbia, Vancouver, BC, Canada.

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Evaluation of nutritional management strategies for cows with a short (40-d) dry period. H. M. Dann* 1, M. P. Carter1, H. M. Gauthier1, K. W. Camp, K. W. Camp, Kansas State University, Manhattan, KS, USA, 2University of Vermont, Burlington, VT, 3William H. Miner Agricultural Research Institute, Chazy, NY, 4ZEN-NOH National Federation of Agricultural Co-operative Associations, Tokyo, Japan.


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Interaction between particle sizes of alfalfa hay and concentrate on lactation performance, chewing activity, and ruminal pH of dairy cows. M. A. Bal* and E. B. Buyukunal Bal, Kahramanmaras Sutcu Imam University, Turkey.

Effects of live yeast supplementation on lactation performance and ruminal pH of dairy cows fed medium and high levels of dietary concentrate. M. A. Bal*, S. Goksu1, and V. Akay2, 1Kahramanmaras Sutcu Imam University, Turkey, 2Global Nutritech Ltd., Kocaeli, Turkey.

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Effect of alcohol fermented feedstuff made of byproduct on milk fat. F. S. Lima1, B. A. Barton*2, and J. E. P. Santos1, 1R&D Centre, Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán de la Grana, Jalisco, México, 2Universidad Técnica Estatal de Quevedo, Quevedo, Los Ríos, Ecuador.


Effect of feeding essential oils and monensin on fatty acid profile of milk fat. M. L. He*1, W. Z. Yang1, C. Benchaar, A. V. Chaves1, and T. A. McAllister1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

Effect of feeding polyphenols on growth, health, nutrient digestion, and immunocompetence of calves. R. A. Oliveira1, C. D. Narciso1, R. Bisinotto1, M. A. Ball*2, and J. E. P. Santos1, 1University of Florida, Gainesville, 2Balchem Co., New Hampton, NY.

Changes in milk aflatoxin concentrations in response to investigational sequestering agents added to aflatoxin-contaminated diets fed to lactating Holstein cows. L. Waltman*, S. Davidson, B. A. Hopkins, G. W. Smith, and L. W. Whitlow, North Carolina State University, Raleigh.

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Effect of feeding essential oils and monensin on fatty acid profiles of milk fat. M. L. He*1, W. Z. Yang1, C. Benchaar, A. V. Chaves1, and T. A. McAllister1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

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Effect of physical particle size on ruminal and post-ruminal disappearance of nutrients of a mixed concentrate in Holstein steers. H. Jahanian-Azizabadi1, M. Danesh Mesgaran*1, and A. Rahmatimanesh2, 1Ferdowsi University of Mashhad, Mashhad, Mashhad, Iran, 2Heram Talaee Shargh Feed Mill Company, Nishabour, Iran.

Influence of an α-amylase on in vitro ruminal fermentation and starch degradation. W. Hu*, M. E. Persia2, and L. Kung Jr1, 1University of Delaware, Newark, 2Syngenta Animal Nutrition, Research Triangle Park, NC.

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Effect of alcohol-fermented feedstuff on the feed intake, feed efficiency, milk quality and profitability of Holstein cows. J. K. Choi1, B. W. Kim2, and J. S. Shin*3, 1Dae Han Feed, Incheon, Kyonggee, South Korea, 2Kangwon National University, Chuncheon, Kangwon, South Korea.

Efficacy of SOLIS®, NOVASIL™ Plus, and MTB-100® to reduce aflatoxin M, levels in milk of dairy cows fed aflatoxin. R. Kutz*1, J. Sampson1, D. Ledoux1, J. Spain1, and M. Vázquez-Añón2, 1University of Missouri, Columbia, 2Novus International, St. Charles, MO.

Interaction between particle sizes of alfalfa hay and concentrate on lactation performance, chewing activity, and ruminal pH of dairy cows. M. A. Bal* and E. B. Buyukunal Bal, Kahramanmaras Sutcu Imam University, Turkey.


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N and energy synchronization of barley: Effect of variety and growth year. P. Yu* and K. Hart, University of Saskatchewan, Saskatoon, SK, Canada.

Effects of fibrolytic enzymes on in vitro digestibility of destined olive cake. D. Elia1, P. P. Danieli1, P. Bani2, and U. Bernabucci*, 1Dipartimento di Produzioni Animali, Viterbo, Italy, 2Istituto di Zootecnia, Piacenza, Italy.

Effect of monensin concentration on dry matter intake during the transition period of lactating dairy cows. M. A. Shah*1, G. Schroeder1, B. D. Strang1, and H. B. Green2, 1Michigan State University, Elko River, MN, 2Elanco Animal Health, Greenfield, IN.
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Effects of alfalfa inclusion rate on productivity of lactating dairy cattle fed wet corn gluten feed based diets. C. R. Mullins*, K. N. Grigsby, and B. J. Bradford, Kansas State University, Manhattan, Cargill, Inc., Blair, NE.

Gene expression for enzymes involved with volatile fatty acid and glucose metabolism are affected by the dietary forage-to-concentrate ratio. G. B. Penner*, M. Taniguichi, L. L. Guan, K. A. Beauchemin, and M. Oba, University of Alberta, Edmonton, Alberta, Canada, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.

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#### Proteins and Amino Acids - Beef, Sheep and Miscellaneous Ruminants

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Intake and total and partial digestibility of nutrients, ruminal pH and ammonia concentration in beef cattle fed diets containing soybean silage. J. P. Rigueira, O. G. Pereira*, M. I. Leão, S. C. Valadares Filho, and R. Garcia, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.


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Oscillating dietary protein in finishing cattle rations to reduce nitrogen inputs, with or without subcutaneous implants does not affect performance or final carcass composition. C. R. Nightingale*, K. L. Swyers, H. Han, T. E. Engle, and S. L. Archibeque, Colorado State University, Fort Collins.

Fractional protein synthesis rate (FSR) in intestinal mucosa of kids: Effect of a diet containing casein or soy protein. U. Schoenhuisen*, A. Floeter, S. Kuhla, P. Junghans, C. C. Metges, K. Huber, R. Zitnan, and H. M. Hammon*, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany, School of Veterinary Medicine Hanover, Hanover, Germany, Institute of Animal Production, Nitra, Slovakia.

### Ruminant Nutrition

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Lignocellulolytic activity of Pleurotus ostreatus solid culture on barley straw. L. Luna-Rodriguez, M. Meneses-Mayo, G. Mendoza-Martínez, C. Montalvo-Paquini, S. S. Gonzalez-Muñoz, and O. Loera-Corral, Colegio de Postgraduados, Montecillo, Eds. Mexico, Mexico, UAM Xochimilco, Mexico D.F., Universidad Politécnica de Puebla, Puebla, Mexico, UAM Iztapalapa, Mexico D.F.

Feedlot performance, carcass characteristics and liver abscesses in heifers fed MGA, Rumensin and Tylan continuously or withdrawn the last 35 days on feed. G. E. Sides*, R. S. Swingle, R. C. Borg, and W. M. Moseley, Pfizer Animal Health, Kalamazoo, MI, Cactus Feeders, Cactus, TX.
Effects of feeding different dose levels of melengestrol acetate on feedlot performance, carcass characteristics and estrus activity of feedlot heifers.

G. E. Sides*, 1, O. A. Turgeon2, W. C. Koers3, M. S. Davis1, K. Vander Pol1, R. C. Borg1, and D. J. Weigel1, 1Pfizer Animal Health, Kalamazoo, MI, 2Bohemia Research Services, Inc., Salina, KS.

Effects of tannins supplementation on animal growth and in vivo ruminal bacterial populations associated with bloat in heifers grazing wheat forage.

B. R. Min*, 1, W. E. Pinchak1, K. Hernandez2, C. Hernandez3, M. E. Hume1, E. Valencia1, and J. D. Fulford1, 1Texas AgriLife Research, Vernon, TX, 2University of Puerto Rico, Puerto Rico, 3USDA-ARS, Southern Plains Agricultural Research Center, Food & Safety Research Unit, College Station, TX, 4Ichthus Education Center, La Trinitaria, Chiapas, Mexico.

Carass traits of grazing young bulls. H. J. Fernandes*, 1,2, A. G. Silva2, J. Cavalli2, A. A. Rocha2, M. F. Paulino2, L. M. Paiva2, 2, and R. M. Paula2, 1State University of Mato Grosso do Sul / FUNDECT, Brazil, 2Federal University of Viçosa, Brazil.

Influence of feed restriction and oral vitamin D and E supplementation on meat quality of Canchim heifers. S. A. Matsuahara3, 3, M. Parrilli2, M. D. B. Arrigoni1, C. L. Martins1, D. D. Millen1, R. D. L. Pacheco5, M. V. Fossa1, L. M. N. Sarti1, J. P. S. T. Bastos9, T. M. Mariani1, H. N. de Oliveira1, S. R. Baldin1, T. C. B. da Silva1, R. S. Barducci1, R. d. O. Roça1, 1FMVZ/UNESP, Botucatu, São Paulo, Brazil, 2Faculdade de Zootecnia/UNESP, Dracena, São Paulo, Brazil, 3Apoio FAPESP.

Influence of feed restriction on performance and carcass traits of Canchim heifers. M. Parrilli1, 1, S. A. Matsuahara2, M. D. B. Arrigoni1, C. L. Martins1, D. D. Millen*, 1, R. D. L. Pacheco1, H. N. de Oliveira1, M. V. Fossa1, L. M. N. Sarti1, T. M. Mariani1, J. P. S. T. Bastos9, S. R. Baldin1, R. S. Barducci1, and T. C. B. da Silva1, 1FMVZ/UNESP, Botucatu, São Paulo, Brazil, 2Faculdade de Zootecnia/UNESP, Dracena, São Paulo, Brazil, 3Apoio FAPESP.

Supplementation frequency effects on performance of steers grazing tropical grass. J. A. S. Morais1, T. T. Berchielli*, 1, M. F. S. Queiroz2, R. A. Reis1, M. A. Balsalobre1, G. Fiorentini1, S. F. Souza1, and P. H. M. Dian1, 1Faculdade de Ciencias Agrarias e Veterinarias - Campus de Jaboticabal/UNESP, 2Bellmon Nutrició Animal.

Comparative effects of virginiamycin supplementation on growth-performance and dietary energetics of calf-fed Holstein steers. E. Ponce*, 1, J. Lenii2, U. Sanchez2, N. Torreterena, and R. Zinii, 1UABC, Mexicali, BC, Mexico, 2University of California, Davis, CA.


Effect of feeding cinnamonaldehyde essential oils and monensin on feedlot cattle performance. W. Z. Yang1, C. Benchaar2, M. L. He3, and K. A. Beauchemin, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

Effect of a rumen buffer derived from calcified seaweed on ruminal dissapearance and fermentation in steers. O. D. Montañez-Valdez*, 1, J. M. Pinos-Rodriguez1, J. H. Avellaneda-Cevallos1, E. O. Garcia-Flores1, and E. C. Guerra-Medina1, 1Centro Universitario de la Costa Sur, Aután de la Grana, Jalisco México.

Net energy and protein requirements for maintenance and gain of Nellore steers estimated with deuterium oxide. G. Aferri*, 1, P. R. Leme1, A. S. Juarez-Reyes1, G. Nevarez-Carrasco1, M. A. Cerrillo-Soto*, 1, J. F. Obregon2, and F. G. Rios2, 1FMVZ-Universidad Juarez del Estado de Durango, Durango, Durango, Mexico, 2FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico.

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Effect of feeding a polyclonal antibody preparation against Escherichia coli O157:H7 on performance, carcass characteristics and E. coli O157:H7 fecal shedding of feedlot steers. N. DiLorenzo*, C. R. Dahlen, and A. DiCostanzo, 1Purdue University, West Lafayette, IN, 2USDA-ARS, West Lafayette, IN, 3ADM Animal Nutrition Research, Decatur, IN.

Performance, carcass characteristics and IGF-I plasmatic concentrations of feedlot young cattle from different genetic groups. C. L. Martins1, M. D. B. Arrigon1, A. C. Silvera1, H. N. de Oliveira1, R. d. C. Cervieri1, L. A. L. Chardulo1, D. D. Millen1*, R. D. L. Pacheco1, T. M. Mariani1, J. P. S. T. Bastos2, T. C. B. da Silva2, S. R. Baldin1, L. M. N. Sarti1, and R. S. Barducci1,1FMVZ/UNESP, Botucatu, São Paulo, Brazil,2Faculdade de Zootecnia/UNESP, Dracena, São Paulo, Brazil.

Influence of chromium methionine addition during last days in feedlot on performance and carcass characteristics of finishing bulls. R. Barajas*1, B. J. Cervantes*, J. A. Romo1, P. J. Rojas3, and E. A. Velanduzquez2,1FMVZ-Universidad Autonoma de Sinaloa, Culiacán, Sinaloa, Mexico,2Ganadera Los Migueles SA de CV, Culiacán, Sinaloa, Mexico,3Técnología de Máxima Producción, S.A. de C.V., Culiacán, Sinaloa, Mexico.

Influence of chromium-methione supplementation level during last 32 days on feedlot performance, carcass characteristics, and blood cortisol of finishing bulls. V. Monterrosa2*, R. Barajas*, J. A. Romo1, and B. J. Cervantes4*, Técnica Mineral Pecuaria, Guadalajara, Jalisco, Mexico,1CUCBA-Universidad de Guadalajara, Guadalajara, Jalisco, Mexico,2FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico,3Ganadera Los Migueles, S.A. de C.V., Culiacan, Sinaloa, Mexico.

Effects of essential oils on ruminal environment and performance of feedlot calves. J. I. Geraci1, A. D. Garciarena1, D. Colombatto2*,3*, D. Bravo4, and J. C. Burges1,1Escola de Veterinária, Faculdade de Medicina Veterinária e Zootecnia, Universidade de São Paulo, São Paulo, Brazil,2Apoio F APESP, Faculdade de Medicina Veterinária e Zootecnia, Universidade de São Paulo, São Paulo, Brazil,3Apoio F APESP, Faculdade de Medicina Veterinária e Zootecnia, Universidade de São Paulo, São Paulo, Brazil,4Departamento de Ciências Veterinárias, Faculdade de Medicina Veterinária e Zootecnia, Universidade de São Paulo, São Paulo, Brazil.

Body and ultrasound measurements, muscularity scores, blood physiology and behaviour in growing beef heifers differing in phenotypic residual feed energy intake. M. McGee1*, M. J. Drennan1, D. A. Kenny2, and B. Earley1,1University College Dublin, Belfield, Dublin, Ireland.

Effects of the dose of capsicum extract on intake, water consumption and rumen fermentation of beef heifers fed a high-concentrate diet. M. McGee1*, M. J. Drennan1, D. A. Kenny2, and B. Earley1,1University College Dublin, Belfield, Dublin, Ireland.


Effects of the dose of capsicum extract intake on intake, water consumption and rumen fermentation of beef heifers fed a high-concentrate diet. M. Rodriguez-Prado1, S. Calsamiglia1*, A. Ferret1, J. Zwieten1, L. Gonzalez1, and D. Bravo1,1Universitat Autonoma de Barcelona, Spain,2Pancosma SA, Switzerland.

Blood metabolic profile of feedlot cattle supplemented with monensin or polyclonal antibodies preparations against lactate-producing rumen bacteria during diet step-up. D. D. Millen1*,2, R. D. L. Pacheco1, M. D. B. Arrigon1, A. DiCostanzo1, C. T. Marino1, N. DiLorenzo1, S. A. Matsuhara1, M. Parrili1, M. V. Fossa1, L. M. N. Sarti1, S. L. Beier1, H. N. de Oliveira1, C. L. Martins1, T. M. Mariani1, J. P. S. T. Bastos1,1FMVZ/UNESP, Botucatu, São Paulo, Brazil,2University of Minnesota, Saint Paul,3Apoio FAPESP.

Intake fluctuations of feedlot cattle supplemented with monensin or polyclonal antibodies preparations against lactate-producing rumen bacteria during diet step-up. D. D. Millen1*,2, R. D. L. Pacheco1, M. D. B. Arrigon1, A. DiCostanzo1, N. DiLorenzo2, C. T. Marino1, S. A. Matsuhara1, M. Parrili1, L. M. N. Sarti1, M. V. Fossa1, H. N. De Oliveira1, S. L. Beier1, C. L. Martins1, T. M. Mariani1, J. P. S. T. Bastos1,1FMVZ/UNESP, Botucatu, São Paulo, Brazil,2University of Minnesota, Saint Paul,3Apoio FAPESP.

Effects of supplemental cobalt on site and extent of digestion in beef heifers consuming chopped grass hay. E. J. Scholljegerdes1* and W. J. Hill2,1USDA-ARS, Northern Great Plains Research Laboratory, Mandan, ND,3Ralco Nutrition Inc., Marshall, MN.

Effect of added dietary tannins on animal performance, carcass traits, and methane producing activity in finishing calves. W. K. Krueger*, H. G. Bauñuelos1, W. E. Pinchak1, B. R. Min1, R. C. Anderson1, G. E. Carstens1*, R. R. Gomezs2, and N. A. Krueger3,1Texas A&M University, College Station,2Intercolligate Faculty of Nutrition, TAMU, College Station, TX,3Texas AgriLife Research, Vernon, TX,4USDA-ARS-Food and Feed Safety Research Unit, College Station, TX.

Evaluation of feed efficacy and feeding behavior traits in Angus and Red Angus growing bulls. Z. D. Paddock1*, G. E. Carstens1, P. A. Lancaster1, L. R. McDonald1, and S. Williams1,1Texas A&M University, College Station,2Midland Bull Test, Marshall, MN.


Effect of supplemental mixed Saccharomyces cerevisiae and Lactobacillus acidophilus 30SC on the growth performance of weaned pigs. J. P. Kim*, K. H. Kim1, K. G. Kim2, S. J. Oh1, S. H. Kim2, and K. Y. Whang1, Chunnam National University, Gwangju, Korea, Korea University, Seoul, Korea.

Effect of supplemental mixed Saccharomyces cerevisiae and Lactobacillus acidophilus 30SC on the energy, nitrogen, Ca, and P digestibility of weaned pigs. K. H. Kim1, J. P. Kim1, J. G. Kim2, S. J. Oh1, S. H. Kim2, and K. Y. Whang1, Chunnam National University, Gwangju, Korea, Korea University, Seoul, Korea.

Effect of supplemental mixed Saccharomyces cerevisiae and Lactobacillus acidophilus 30SC on the immunoglobulin G production of weaned pigs. S. J. Oh*, J. P. Kim1, K. H. Kim1, J. G. Kim2, S. H. Kim2, and K. Y. Whang1, Chunnam National University, Gwangju, Korea, Korea University, Seoul, Korea.

The effects of seaweed extract inclusion on gut microflora and immune status of the weaned pig. P. Reilly1, T. Sweeney1, K. M. Pierce*, J. J. Callan1, A. Julka2, and J. V. O’Doherty1, University College Dublin, Ireland; Bioatlantis Ltd, Ireland.

Yam on fermentation characteristics and immune function in pigs. M. J. Bo, Y. L. Yin*, X. F. Kong, Y. Z. Zhang, G. Y. Wu, and B. E. Tan, Laboratory of Animal Nutrition and Human Health and Key Laboratory of Agro-ecology, Changsha, Hunan, P. R. China.

Effect of Chinese herbal ultra-fine powder as a dietary additive on digestion and absorption of amino acids in early-weaned piglets. X. F. Kong1, Q. H. He1, F. G. Yin1, Y. L. Yin*, G. Y. Wu1, B. E. Tan1, and R. L. Huang1, Laboratory of Animal Nutrition and Human Health and Key Laboratory of Agro-ecology, Changsha, Hunan, P. R. China, Texas A&M University, College Station.

Effects of dietary supplemental Chinese herbal formula on immune responses in weaned piglets. X. F. Kong, B. E. Tan, Y. L. Yin*, H. J. Liu, F. G. Yin, and M. J. Bo, Laboratory of Animal Nutrition and Human Health and Key Laboratory of Agro-ecology, Changsha, Hunan, P. R. China.

Level of management affects finisher growth and pig composition. J. S. Fix* and M. T. See, North Carolina State University, Raleigh.

In vivo antioxidiant activity of peptide fractions from porcine plasma albumin in rats. J. Z. Wang*1; H. Zhang1, S. S. Zeng2, and F. Z. Ren1, College of Food Science & Nutritional Engineering, China Agricultural University, Beijing, China, American Institute for Goat Research, Langston University, Langston, OK.

Influence of weaning age and number of weaning per week on productive performance of sows and piglets. N. Simal1, A. Fuentetaja2, M. Nieto3, M. P. Serrano1, and G. G. Mateos*, Universidad Politècnica de Madrid, Spain, Copese, Segovia, Spain.

Sow parity and number born alive influence piglet birth weight along with subsequent growth, composition, mortality and endpoint value. J. S. Fix* and M. T. See, North Carolina State University, Raleigh.


Effect of lactation length on the herd-level performance of breeding sows. S. S. Anil*, L. Anil, and J. Deen, University of Minnesota, St. Paul.

Association between claw lesions and farrowing performance of sows. S. S. Anil*, L. Anil, and J. Deen, University of Minnesota, St. Paul.

Evaluation of welfare of gestating sows in conventional gestation stalls and in gestation stalls with widths defined by the sow height. L. Anil*, S. S. Anil, and J. Deen, University of Minnesota, St. Paul.


Expression of Dicer and Ago-2 in porcine ovarian tissue. H. M. Barton* and S. L. Pratt, Clemson University, Clemson, SC.

W301  Effects of the sex and the halothane genotype on carcass and meat quality characteristics in Duroc and Landrace crossbred pigs. L. L. Lo*, C. C. Tsai¹, M. C. Huang², R. S. Lin³, and T. H. Huang⁴, ¹Chinese Culture University, Taipei, Taiwan, ROC, ²National Chung-Hsing University, Taichung, Taiwan, ROC, ³National Ilan University, Ilan, Taiwan, ROC, ⁴Taiwan Farm Industry Co. Ltd., Pingtung, Taiwan, ROC.

W302  Identification and quantification of miRNA expression in porcine sperm cells. E. Curry* and S. L. Pratt, Clemson University, Clemson, SC.

**SYMPOSIA AND ORAL SESSIONS**

**ADSA Foundation Scholar Lecture**

**Dairy Foods**

Chair: Lloyd Metzger, South Dakota State University

Sponsor: ADSA Foundation

121

9:30 AM  Introduction


10:20 AM  Discussion

**Animal Behavior and Well-Being**

**Swine**

Chair: Ted Friend, Texas A & M University

206

9:30 AM  Introduction of Centennial speaker


10:05 AM  Break

10:15 AM  Effects of facility design on the stress response of market weight pigs during loading and unloading. A. Johnson*, L. Sadler¹, M. Faga², C. Feuerbach², H. Hill³, R. Bailey³, and M. Ritter⁴, ¹Department of Animal Science, Iowa State University, Ames, ²Iowa Select Farms, Iowa Falls, IA, ³Swift and Co., Marshalltown, IA, ⁴Elanco Animal Health, Greenfield, IN.

10:30 AM  Effect of trailer design on the behavior of market weight pigs during unloading and lairage. S. Torrey*, H. Gonyou²,³, J. A. Correa⁴, R. Bergeron⁵, T. Widowski⁵, N. Lewis⁶, T. Crowe⁵, C. Dewey⁵, and L. Faucitano¹, ¹Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ²University of Saskatchewan, Saskatoon, SK, Canada, ³Prairie Swine Centre, Saskatoon, SK, Canada, ⁴Université Laval, Quebec City, QC, Canada, ⁵University of Guelph, Guelph, ON, Canada, ⁶University of Manitoba, Winnipeg, MB, Canada.

10:45 AM  Space requirements of weaned pigs during transport in summer. M. A. Sutherland*, P. J. Bryer¹,², B. L. Davis¹,², and J. J. McGlone¹,², ¹Pork Industry Institute, Lubbock, TX, ²Texas Tech University, Lubbock.

11:00 AM  The effect of 30-hour transport at two space allowances on physiological measures of stress in breeding gilts. P. J. Bryer*, M. A. Sutherland, B. L. Davis, J. Smith, and J. J. McGlone, Pork Industry Institute, Dept. Animal and Food Science, Texas Tech University, Lubbock.


**Animal Health IV**

Chair: Isis Mullarkey, Virginia Tech

Sponsor: European Association of Animal Production

Sagamore Ballroom 1

9:30 AM  Metabolic disorders and immune response in farm animals. N. Lacetera*, U. Bernabucci, B. Ronchi, and A. Nardone, Dipartimento di Produzioni Animali, Viterbo, Italy.
Administration of a Staphylococcus aureus bacterin to dairy heifers reduces new infection rate and somatic cell counts at time of calving. S. C. Nickerson*, E. Hovingh2, C. Peterson1, S. Brannock1, E. Schaffer1, and P. W. Widel4, 1University of Georgia, Athens, 2Pennsylvania State University, College Park, 3James River Correctional Facility, Goochland, VA, 4Boehringer Ingelheim Vetmedica Inc., St. Joseph, MO.

Serum non-esterified fatty acid and beta-hydroxybutyrate in the transition period and their associations with disease in dairy cows. M. E. Carson*, S. J. LeBlanc1, S. M. Godden2, M. B. Capel3, M. W. Overton4, J. Santos5, K. E. Leslie1, and T. F. Duffield1, 1University of Guelph, Ontario, Canada, 2University of Minnesota, St. Paul, 3Perry Veterinary Clinic, Perry, NY, 4University of Georgia, Athens, 5University of California Davis, Tulare.


Ability of an immunomodulatory feed additive to reduce infection of the murine mammary gland with Streptococcus uberis, Escherichia coli and Staphylococcus aureus. A. Rowson*, Y. Q. Wang1, E. Aalseth2, N. E. Forsberg3, and S. B. Puntenney4, 1OmniGen Research, Corvallis, OR, 2Aalseth Consulting, Lake Stevens, WA.


Evaluation of a novel chlorine dioxide teat dip on teat end and teat skin health. L. L. Timms*, Iowa State University, Ames.

Sodium chlorite lactic acid teat dip contaminated with Serratia liquefaciens. D. J. Wilson*, J. D. Trujillo, R. T. Skirpstunas, and K. B. Cavender, Utah State University, Logan.

Teat end and skin conditioning evaluation of two experimental heptanoic acid teat dips during winter. L. L. Timms* and J. Morelli2, 1Iowa State University, Ames, 2Ecolab, Inc., St. Paul, MN.

**SYMPOSIUM**

**Bioethics**

**How Do We Integrate Bioethics into Our Food Animal System?**

Chair: Debbie Cherney, Cornell University

101–102

9:30 AM  
Introduction

9:35 AM  
**ASAS Centennial Presentation:** History and future perspectives of bioethics in food animal agriculture. W. R. Stricklin*, University of Maryland, College Park.

10:05 AM  

10:30 AM  
Bridging the DVM and PhD gap. P. Ruegg*, University of Wisconsin, Madison.

10:55 AM  
Break

11:10 AM  
How to talk truthfully with the public regarding bioethical and animal welfare issues. W. Jamison*, University of Florida, Gainesville.

11:35 AM  
Roles of surveys and foundation reports in policy decisions. F. B. Norwood* and J. L. Lusk, Oklahoma State University, Stillwater.

12:00 PM  
Discussion
SYMPOSIUM
Breeding and Genetics
Genome-Wide Selection
Chairs: Filippo Miglior, Agriculture and Agri-Food Canada, and Janice Rumph, Michigan State University
Sponsors: Igenity and Newsham Genetics
500 Ballroom

9:30 AM  Introduction. F. Miglior, Agriculture and Agri-Food Canada, Guelph, ON, Canada.


10:15 AM  261  Reliability of genomic predictions for North American dairy bulls. P. M. VanRaden*, C. P. Van Tassell1,2, G. R. Wiggans1, T. S. Sonstegard3, R. D. Schnabel1, and F. Schenkel1, USDA Animal Improvement Programs Laboratory, Beltsville, MD, 2Bovine Functional Genomics Laboratory, Beltsville, MD, 3University of Missouri, Columbia, University of Guelph, Guelph, ON, Canada.

10:55 AM  262  Data optimization techniques for large phenotypic and molecular data sets. R. Rekaya*, University of Georgia, Athens.

11:35 AM  263  The next steps in genomic selection: An industry perspective. J. P. Chesnais*, F. Schenkel1, and N. Caron1, Semex Alliance, Guelph, ON, Canada, University of Guelph, Guelph, ON, Canada.

12:15 PM  Panel Discussion. J. Rumph1 and F. Miglior2, Michigan State University, Lake City, 2Agriculture and Agri-Food Canada, Guelph, ON, Canada.

SYMPOSIUM
Food Safety
Assuring Food Safety in a Globalized Market
Chair: Pamela Ruegg, University of Wisconsin
Sponsor: Elanco
204

9:30 AM  264  Quality and safety concerns of outsourced foods. M. W. Griffiths*, University of Guelph, Guelph, ON, Canada.


10:35 AM  266  FDA’s food protection plan and import safety plan. S. A. Benz*, Center for Veterinary Medicine, Food and Drug Administration, Rockville, MD.

11:05 AM  Break

11:20 AM  267  The global threat of foreign animal diseases and their role in food safety. T. McKenna*1 and A. Torres2, 1Wisconsin Veterinary Diagnostic Laboratory, Madison, WI, 2Cornell University, Ithaca, NY.


SYMPOSIUM
Forages and Pastures
Forage-Based Systems for Beef and Dairy Cattle Production: Regional Challenges and Opportunities
Chair: Paul Beck, University of Arkansas
Sponsor: Mycogen
103

9:30 AM  269  Northeast opportunities and challenges for forage-based beef and dairy production. K. J. Soder*, USDA-ARS, Pasture Systems & Watershed Mgmt. Research Unit, University Park, PA.

10:00 AM  270  Forage-based systems for the Upper Midwest. W. K. Coblentz*, US Dairy Forage Research Center, Marshfield, WI.

10:30 AM  271  Opportunities and obstacles for forage-based dairy and beef production in the Southeastern US. J. Andrae*, Clemson University, Clemson, SC.
Forage-based systems for beef and dairy cattle production: Challenges and opportunities in the South Central region. W. A. Phillips*, G. W. Horn2, and B. K. Northup1, USDA-ARS Grazinglands Research Laboratory, El Reno, OK, Oklahoma Agricultural Experiment Station, Stillwater, OK.

Forage-based systems for beef production: Western regional challenges and opportunities. K. C. Olson*1 and B. L. Waldron2, South Dakota State University, Rapid City, USDA-ARS Forage and Range Research Laboratory, Logan, UT.

Growth and Development
Historical Perspective and Future Direction
Chair: Michael Azain, University of Georgia, and Jud Heinrichs, Pennsylvania State University
Sagamore Ballroom 5


9:40 AM ASAS Centennial Presentation: The history of growth biology research – A reflection on the episodic nature of science. T. Etherton*, Penn State University, University Park.


11:00 AM The role of microRNA on murine mammary epithelial cell and mammary gland. Q. Z. Li* and C. M. Wang, Northeast Agricultural University, Harbin, Heilongjiang, China.


11:45 AM Enhanced skeletal muscle protein synthesis rates in pigs treated with somatotropin requires fed amino acids levels. F. A. Wilson*, A. Suryawan, R. A. Orellana, H. V. Nguyen, A. S. Jeyapalan, M. C. Gazzaneo, and T. A. Davis, Baylor College of Medicine, Houston, TX.

12:00 PM Changes in the transcriptome of adipose tissue of the dairy heifer during late pregnancy and lactation as measured by gene array analysis: global changes and cell control. J. Sumner*, C. Schachtschneider, and J. McNamara, Washington State University, Pullman.

12:15 PM Changes in the transcriptome of adipose tissue of the dairy heifer during late pregnancy and lactation as measured by gene array analysis: changes in specific metabolic control genes. J. Sumner*, C. Schachtschneider, J. Vierck, and J. McNamara, Washington State University, Pullman.

Horse Species I
Chair: Jason Turner, New Mexico State University
104

9:30 AM ASAS Centennial Presentation: Historical review and future outlook of equine reproductive technology. D. Sharp*, University of Florida, Gainesville.

10:30 AM Pituitary responsiveness to continuously-administered native GnRH at the winter solstice in anovulatory mares and mares with residual ovarian activity. I. C. Velez*, M. Amstalden12, J. D. Pack12, and G. L. Williams12, Texas AgriLife Research, Beeville, TX, Texas A&M University, College Station.

10:45 AM Patterns of pituitary venous LH release in the luteal and follicular phase mare: Effects of continuous treatment with native GnRH. I. C. Velez*, M. Amstalden12, J. D. Pack12, and G. L. Williams12, Texas AgriLife Research, Beeville, TX, Texas A&M University, College Station.

11:00 AM Effect of centrifugation technique on post storage characteristics of stallion spermatozoa. M. M. Dean and G. W. Webb*, Missouri State University, Springfield.

11:15 AM Break
11:30 AM  286  Effect of selenium supplementation and dietary energy manipulation on mares and their foals: Selenium concentrations and glutathione peroxidase activity. B. J. Karren*, J. F. Thorson, C. A. Cavinder, C. J. Hammer, and J. A. Coverdale, 1Texas A&M University, College Station, 2North Dakota State University, Fargo.

11:45 AM  287  Effect of selenium supplementation and dietary energy manipulation on mares and their foals: Equine colostrum quality and passive transfer of IgG. J. F. Thorson*, B. J. Karren, M. L. Bauer, C. A. Cavinder, J. A. Coverdale, and C. J. Hammer, 1North Dakota State University, Fargo, 2Texas A&M University, College Station.

12:00 PM  288  Differential mRNA expression of amino acid transporters in the equine small and large intestine. A. D. Woodward*, S. J. Holcombe, C. Colvin, J. Liesman, and N. L. Trottier, Michigan State University, East Lansing.


Meat Science and Muscle Biology
Measuring and Manipulating Pork Quality
Chair: Kirk Braden, Angelo State University
Sagamore Ballroom 7

9:30 AM  290  Oxidation results in formation of an intramolecular disulfide bond in μ-calpain. R. Lametsch, E. Huff-Lonergan, and S. M. Lonergan*, 1Iowa State University, Ames, 2University of Copenhagen, Copenhagen, Denmark.


10:30 AM  294  Effect of different dietary levels of natural-source vitamin E in grow-finish pigs on pork quality and shelf life. D. D. Boler*, S. R. Gabriel, H. Yang, R. Balsbaugh, D. C. Mahan, M. S. Brewer, F. K. McKeith, and J. Killefer, 1University of Illinois, Urbana, 2ADM Alliance Nutrition Inc., Quincy, IL, 3The Ohio State University, Columbus.


11:00 AM  296  Comparison of growth performance, carcass characteristics, and meat quality of barrows, immunocastrated pigs and entire males. C. Pauly, G. Bee*, 1Agroscope Liebefeld-Posieux Research Station AUP, Posieux, Switzerland, 2Swiss College of Agriculture, Zollikofen, Switzerland.


Nonruminant Nutrition
Past and Future of Nonruminant Nutrition
Chairs: Wilson G. Pond, Cornell University, and Nathan Auspurger, JBS United
105–106


9:40 AM  299  ASAS Centennial Presentation: Landmark studies in swine nutrition during the past century. G. L. Cromwell*, University of Kentucky, Lexington.

10:20 AM  Discussion
ASAS Centennial Presentation: Nonruminant nutrition – A proud past but uncertain future. R. A. Easter*, University of Illinois, Urbana.

SYMPOSIUM
Physiology and Endocrinology
Emerging Concepts on Dietary Components that Influence the Physiology and Endocrinology of Domestic Farm Animals
Chair: Mark Estienne, Virginia Tech
Sponsor: Monsanto Company
Sagamore Ballroom 4

9:30 AM
Reproductive consequences of nutritionally induced changes in the pH of the bovine reproductive tract. G. A. Perry*, South Dakota State University, Brookings.

10:15 AM
Performance, metabolism and immunity in domestic animals fed diets contaminated with Fusarium mycotoxins. T. K. Smith*, University of Guelph, Guelph, ON, Canada.

11:00 AM
Effectiveness of supplemental antioxidants for enhancing reproductive function in cattle. P. J. Hansen*, University of Florida, Gainesville.

11:45 AM
Phytase: Not just for environmental protection–Novel roles in system physiology. X. G. Lei*¹ and J. M. Porres², ¹Cornell University, Ithaca, NY, ²University of Granada, Granada, Spain.

Production, Management and the Environment
Nutrient Management and the Environment
Chair: Walter Owsley, Auburn University
Sagamore Ballroom 2

9:30 AM
Development of methane conversion factors for US cattle using mechanistic models. E. Kebreab*¹, K. A. Johnson², S. L. Archibeque³, D. Pape*, and T. Wirth³, ¹University of Manitoba, Winnipeg, Manitoba, Canada, ²Washington State University, Pullman, ³Colorado State University, Ft. Collins, ⁴ICF International, Washington, DC, ⁵Environmental Protection Agency, Washington, DC.

9:45 AM
Characteristics and use of separated manure solids following anaerobic digestion for dairy freestall bedding in three Iowa dairy herds. L. L. Timms*, Iowa State University, Ames.

10:00 AM
Aerobic composting or anaerobic stockpiling of beef feedlot manure. M. K. Luebbe*, G. E. Erickson, T. J. Klopfenstein, and J. R. Benton, University of Nebraska, Lincoln.

10:15 AM
Effect of dietary protein level and degradability and energy density on ammonia losses from manure in dairy cows. M. Agle¹, A. N. Hristov*, S. Zaman¹, C. Schneider¹, P. Ndegwa², and V. K. Vaddella², ¹University of Idaho, Moscow, ²Washington State University, Pullman.

10:30 AM
Simulating effects of grass management on methane emission in lactating cows. A. Bannink*, J. C. J. Smits¹, J. A. N. Mills², E. Kebreab¹, J. L. Ellis¹, J. France¹, and J. Dijkstra¹, ¹Animal Sciences Group, Wageningen University Research Centre, Lelystad, the Netherlands, ²University of Reading, Reading, United Kingdom, ³University of Manitoba, Winnipeg, Canada, ⁴University of Guelph, Guelph, Canada, ⁵Wageningen University, Wageningen, the Netherlands.

10:45 AM
Application of computer models in evaluating alternatives to reduce excess nutrients on a beef farm. M. J. Baker*, D. G. Fox¹, and L. O. Tedeschi², ¹Cornell University, Ithaca, NY, ²Texas A&M University, College Station.

11:00 AM
Challenges in using flux chambers to measure ammonia and VOC flux from simulated feedlot pen surfaces and retention ponds. N. A. Cole¹, R. W. Todd¹, D. B. Parker¹, M. B. Rhoades¹, and E. Caraway¹, ¹USDA-ARS-CPRL, Bushland, TX, ²West Texas A&M University, Canyon, TX.

11:15 AM
Odorant production and persistence of generic E. coli in manure slurries from cattle fed 0, 20, 40, and 60% wet distillers grains with solubles (WDGS). V. H. Varel*, I. E. Wells¹, E. D. Berry¹, M. J. Spiels¹, D. N. Miller¹, C. L. Ferrell¹, S. D. Shackelford¹, and M. Koohmaraie¹, ¹USDA-ARS, US Meat Animal Research Center, Clay Center, NE, ²USDA-ARS, Agroecosystem Management Unit, Lincoln, NE.
Quantification of nutrient excretion and volatile fatty acid production from a swine wean-finish facility. D. M. Sholly*, D. T. Kelly, A. L. Sutton, B. T. Richert, and J. S. Radcliffe, Purdue University, West Lafayette, IN.

Production, Management and the Environment
Young Stock, Environment and Management
Chair: Micheal Brouk, Kansas State University
109–110

Supplements for replacement beef heifers grazing dry summer California foothills annual range. R. D. Sainz*1, L. F. B. Carvalho1,2, L. R. A. Sodré1, G. D. Cruz1, D. M. Myers1, J. W. Oljen1, and P. Arana1, 1University of California, Davis, 2Federal Rural University of Pernambuco, Recife, PE, Brazil.

Feed intake, gain and feed efficiency of Suffolk ram lambs from a flock emphasizing performance traits. M. E. Benson*2, A. B. Culham1, and G. M. Hill1, 1Michigan State University, East Lansing, 2Washington State University, Pullman.

Variation in total mixed rations on farms utilizing feed management software. B. House*, L. Holden, and G. Varga, Pennsylvania State University, University Park.


Effect of feeding method and temperament on measures of feed efficiency and age at puberty in Brahman bulls. N. D. Ramirez*1, D. A. Neuendorff1, A. W. Lewis1, S. T. Willard2, R. C. Vann2, S. Bowers2, T. H. Welsh3, T. D. A. Forbes4, R. L. Stanko1,2, and R. D. Randel1, 1Texas A&M University, Kingsville, 2Texas A&I Research Station, Beeville, TX, 3Texas AgriLife Research and Extension Center, Overton, TX, 4Mississippi State University, Starkville, 5Texas A&M University, College Station, 6Texas A&M University Agricultural Research and Extension Center, Uvalde, TX, 7MAFES-Mississippi State University, Raymond.


Relationship between temperament and chute exit velocity of Senepol calves after weaning. R. W. Godfrey* and R. C. Ketring, University of the Virgin Islands, Agricultural Experiment Station, Kingshill, VI.


Hoop buildings vs. conventional feedlots for steers: Effects on growth and performance. P. Lammers*1, A. Johnson1, S. Lonergan1, J. Harmon1, R. Baker1, S. Shouse2, W. Busby2, and M. Honeyman1, 1Iowa State University, Ames, 2Iowa State University Extension, Ames.

Ruminant Nutrition
Fats and Fatty Acids
Chair: Paul Kononoff, University of Nebraska
Sagamore Ballroom 3


Effects of supplemental flaxseed or corn on site and extent of digestion in beef heifers grazing summer rangelands in the northern Great Plains. E. J. Scholljegerdes* and S. L. Kronberg, USDA-ARS, Northern Great Plains Research Laboratory, Mandan, ND.

The influence of single essences on conjugated linoleic acid and vaccenic acid content in cows’ milk. S. La Terra*1, M. Manenti1, F. La Terra1, M. Caccamo1, G. Azzaro1, S. Carpino1, and G. Licitra1,2, CoRFiLaC, Regione Siciliana, Ragusa, Italy, 3D.A.C.P.A., Catania University, Catania, Italy.
10:30 AM 327 Dietary coconut oil and animal fat blend decrease lactational performance of Holstein cows fed a high starch diet. M. Hollmann* and D. K. Beede, Michigan State University, East Lansing.

10:45 AM 328 Effect of supplementation with sunflower oil (SO) or seeds (SS) combined or not with fish oil (FO) on milk production in grazing dairy cows. G. A. Gagliostro*, D. A. Garciaarena, F. Luparia, A. Ferlay, and Y. Chilliard, 1Instituto Nacional de Tecnologia Agropecuaria, INTA, Balcarce, Buenos Aires, Argentina, 2Institut National de la Recherche Agronomique, Saint Genès Champanelle, France.

11:00 AM 329 Effects of particle size of calcium salts of fatty acids on rates of biohydrogenation and disappearance of essential fatty acids in sacco. E. Block*, E. Evans, C. J. Sniffen, and N. Clark, 1Church & Dwight Co Inc., Princeton, NJ, 2Technical Advisory Services Inc., Bowmanville, ON, Canada, 3Fencrest LLC, Holderness, NH, 4Atlantic Dairy and Forage Institute, Fredericton Junction, NB, Canada.

11:15 AM 330 Calcium status influences the periparturient cow’s ability to consume and utilize high levels of supplemental ruminal inert fat and is potentially mediated by insulin. L. M. Norat-Collazo*, A. Lukose, P. G. Smith, L. O. Ely, and M. A. Froetschel, The University of Georgia, Athens.


Ruminant Nutrition
Rumen Fermentation and Microbiology
Chair: John Wagner, Colorado State University
Sagamore Ballroom 6

9:30 AM 334 Chemotaxis toward glucose and xylose by mixed ruminal protozoa and dose-responsive insulin recovery from wortmannin inhibition by entodiniomorphid cultures. H. L. Diaz*, J. L. Firkins, M. A. Lyons, and J. R. Knapp, 1The Ohio State University, Columbus, 2Fox Hollow Consulting, LLC, Columbus, OH.


10:00 AM 336 Extract from Larrea tridentata reduces growth of rumen bacteria. J. Browne-Silva, S. L. Lodge-Ivey*, J. Petersen, R. Reyna-Islas, and M. B. Horvath, New Mexico State University, Las Cruces.


11:00 AM 340 Bacterial population shifts in the rumen of lactating dairy cows within and across feeding cycles. D. G. Welkie*, D. M. Stevenson, and P. J. Weimer*, 1University of Wisconsin, Madison, 2USDA-ARS, Madison, WI.

11:15 AM 341 Effect of lauric acid and coconut oil on ruminal fermentation, digestion, ammonia losses from manure, and milk fatty acid composition in dairy cows. A. N. Hristov, J. M. Krall, and K. Johnson, 1Kansas State University, Manhattan, 2USDA-ARS, Bushland, TX, 3USDA-ARS, College Station, TX.

11:30 AM 342 Effect of esterified linolenic acid addition on methanogenesis, fermentation and microbes in the rumen of sheep fed diets with different forage to concentrate ratios. C. M. Zhang*, J. X. Liu, Z. P. Yuan, X. W. Yi, W. T. Li, and Y. Q. Guo, Zhejiang University, Hangzhou, P. R. China.
Summary of the effect on ruminal fermentation of Protein Edge® supplementation in continuous culture experiments. C. S. Mooney*, H. M. Dann, C. S. Ballard, K. W. Cotanch, and R. J. Grant, William H. Miner Agricultural Research Institute, Chazy, NY.

Effect of controlled in vitro pH on fermentative activity of ruminal contents from finishing cattle adapted to supplemental dried distiller’s grains. S. Uwituze*, J. M. Heidenreich, T. G. Nagaraja, J. J. Higgins, and J. S. Drouillard, Kansas State University, Manhattan.

Small Ruminant Goats and Sheep
Chair: Joan M. Burke, USDA, ARS

Swine Species
Chair: Brett J. White, University of Nebraska–Lincoln

Council for Agriculture Science and Technology Whitepaper Rollout: Swine carcass disposal options for routine and catastrophic mortality. A. F. Harper*1, and J. Bonner*2, Virginia Tech Tidewater AREC, Suffolk, CAST, Ames, IA.

Multi-breed comparison of body composition in swine using dual energy X-ray absorptiometry (DXA) and magnetic resonance imaging (MRI) under special consideration of Cerdo Iberico. A. M. Scholz*, S. Schneider, and P. V. Kremer, Ludwig Maximilians University Munich, Oberschleissheim, Bavaria, Germany.

Performance and carcass characteristics of pigs destined for natural label or commodity pork markets. A. F. Harper*1, M. J. Estienne1, T. D. Pringle2, and K. A. Alberti1, Virginia Polytechnic Institute and State University, Blacksburg, The Ohio State University, Columbus.


Lignocellulose as dietary fiber source in swine nutrition. A. Kroismayr*1,2, J. Leibetseder2, C. Plitzner2, K. Neufeld3, and P. Affentranger4, 1University of Veterinary Medicine, Vienna, Austria, 2University of Natural Resources and Applied Life Sciences, Vienna, Austria, 3Animal Nutrition Research Center, Austria, 4Agromed Austria, Kremsmünster, Austria/EU, 5UFA AG, Switzerland.


The impacts of vaccination and feeding a gel nutritional supplement on nursery pig performance. L. Layman*, W. Holt1, L. Karriker1, K. Stalder1, B. de Rodas2, D. Brown2, and A. Johnson1, Iowa State University, Ames, Land O’Lakes Purina Feed, Gray Summit, MO.


Effects of environment on non-ambulatory, injured and fatigued pigs and losses during transport and lairage at a commercial abattoir. R. Fitzgerald*, K. Stalder1, N. Matthews2, C. Schultz-Kaster2, and A. Johnson1, Iowa State University, Ames, Farmland Foods, Milan, MO.

### SYMPOSIUM

**Teaching/Undergraduate and Graduate Education**

**The Changing Student and Influence of Technology on Learning**

*Chair: John Parrish, University of Wisconsin*

9:30 AM 362 **ASAS Centennial Presentation:** Animal science teaching: A century of excellence. D. S. Buchanan*1 and L. C. Martin2, 1North Dakota State University, Fargo, 2The Ohio State University, Columbus.

9:50 AM 363 How current students differ and what impact this has on learning in the classroom. L. C. Martin*, The Ohio State University, Columbus.

10:10 AM 364 Changes that have occurred in animal science teaching. J. A. Sterle*1 and J. J. Parrish2, 1Texas A&M University, College Station, 2University of Wisconsin, Madison.


10:40 AM Break

10:55 AM 365 The use of multimedia in the classroom. H. Khatib*, University of Wisconsin, Madison.

11:15 AM 366 The use of podcasts in the classroom. J. J. Parrish*, University of Wisconsin, Madison.

11:35 AM 367 Teaching and learning with an instructional web site. M. A. Wattiaux*, University of Wisconsin, Madison.

11:55 AM Panel Discussion: Can we go too far in adapting your teaching to student needs? D. S. Buchanan, L. C. Martin, J. A. Sterle, H. Khatib, J. J. Parrish, M. A. Wattiaux.

### Danisco International Dairy Science Award Lecture

**Chair: Carmen Moraru, Cornell University**

**Sponsor: Danisco Animal Nutrition**

10:30 AM Introduction

10:35 AM Danisco International Dairy Science Award—An overview of the Danisco Award and a summary of the history and results of Dr. Peter Parodi’s, 2008 Danisco Awardee, work. D. Bauman, Cornell University, Ithaca, NY.

11:20 AM Discussion
Nonruminant Nutrition
Feed Additives I
Chairs: Nathan Apsurger, JBS United, and Wilson G. Pond, Cornell University
105–106


11:45 AM  369  Effects of dietary yeast culture supplementation to gestation and lactation diets on performance of sows and litters. S. W. Kim*,1, M. Brandherm*, B. Newton1, D. Cook1, and I. K. Yoon1, 1North Carolina State University, Raleigh, 2Hitch Pork Producers, Gaymon, OK, 3Akey, Lewisburg, OH, 4Diamond V Mills, Cedar Rapids, IA.

12:00 PM  370  *In vitro* efficacy of yeast cell walls to bind pathogenic bacteria and to influence performance of broiler chickens. A. Ganner*, S. Nitsch, and G. Schatzmayr, *Biomin Research Center, Tulln, Lower Austria, Austria.*

12:15 PM  371  Effect of enzymatically hydrolyzed yeast supplementation on performance and in protecting broilers against a mild coccidiosis challenge. S. Jalukar*, J. Oppy1, and S. Davis2, 1Varied Industries Corporation, Mason City, IA, 2Colorado Quality Research Inc., Wellington, CO.

Physiology and Endocrinology
Effects of Environment and Handling on Performance
Chair: David Miller, University of Illinois
Sagamore Ballroom 7


12:00 PM  374  The influence of bovine temperament on rectal temperature and stress hormones in response to transportation. N. C. Burdick*, J. A. Carroll2, R. D. Randel1, R. C. Vann3, S. T. Willard1, L. C. Caldwell1, J. W. Dailey2, L. E. Hulbert2, and T. H. Welsh Jr.1, 1Agrilife Research, Texas A&M System, College Station, TX, 2USDA-ARS Livestock Issues Research Unit, Lubbock, TX, 3Agrilife Research, Texas A&M System, Overton, TX, 4Mississippi State University, Raymond, 5Mississippi State University, Mississippi State.

12:15 PM  375  Effects of acclimation on performance, physiologic responses, and puberty attainment of Brahman-crossbred heifers. R. F. Cooke*, B. R. Austin2, J. V. Yelich2, and J. D. Arthington1, 1University of Florida - IFAS, Range Cattle Research and Education Center, Okeechobee, 2University of Florida - IFAS, Animal Sciences, Gainesville.

12:30 PM  376  Effects of acclimation on performance, physiologic responses, and pregnancy rates of Brahman-crossbred cows. R. F. Cooke*, D. B. Araujo2, G. C. Lamb3, and J. D. Arthington1, 1University of Florida - IFAS, Range Cattle Research and Education Center, Okeechobee, 2University of Florida - IFAS, Animal Sciences, Gainesville, 3University of Florida - IFAS, North Florida Research and Education Center, Marianna.

ADSA Foundation Scholar Lecture
Production
Chair: Lloyd Metzger, South Dakota State University
Sponsor: ADSA Foundation
120

2:00 PM  Introduction


2:50 PM  Discussion
Animal Behavior and Well-Being
Livestock: Swine and Sheep
Chair: Trevor Devries, University of Guelph
101–102

2:00 PM  Introduction of Centennial speaker

2:05 PM  377  ASAS Centennial Presentation: Animal behavior as a discipline within the American Society of Animal Science: One hundred years of change and promise. W. R. Stricklin*, University of Maryland, College Park.

2:35 PM  Break


3:00 PM  379  The motivation of dominant and subordinate gestating sows for an enriched group pen. M. R. Pittman*, A. K. Johnson1, J. P. Garner1, R. D. Kirkden1, B. T. Richert1, and E. A. Pajor1, Purdue University, West Lafayette, IN, 2Iowa State University, Ames.

3:15 PM  380  Behavioral changes in young pigs infected with Salmonella. J. Higgenson*, J. T. Gray2, and S. T. Millman1, 1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Department of Microbiology & Immunology, Des Moines University, Des Moines, IA, 3Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames.

3:30 PM  381  The social behavior carried out by unacquainted sows on mixing may predict the likelihood of escalation into aggression. J. N. Marchant-Forde*, J. P. Garner2, E. L. Schenck1, A. K. Johnson3, and D. C. Lay Jr.1, 1USDA-ARS, West Lafayette, IN, 2Purdue University, West Lafayette, IN, 3Iowa State University, Ames.

3:45 PM  382  The effects of ractopamine, gender, and social rank on aggression and peripheral monoamine levels in finishing pigs. R. Poletto*, J. P. Garner1, H. W. Cheng2, B. T. Richert1, and J. N. Marchant-Forde2, 1Purdue University, West Lafayette, IN, 2USDA-ARS-LBRU, West Lafayette, IN.

4:00 PM  383  Preference for foods by lambs conditioned with rumen distension and contraction. J. J. Villalba* and F. D. Provenza, Department of Wildland Resources, Utah State University, Logan.

4:15 PM  384  Feeding behavior and rumen pH of lactating dairy sheep fed diets with different starch, NDF, and pNDF content. G. Molle*, F. Boe1, V. Giovannetti1, M. Decandia1, E. Zerbini1, and A. Cannas2, 1AGRIS Sardegna, Dipartimento Ricerca nelle Produzioni Animali, Olmedo, Italy, 2Dipartimento di Scienze Zootecniche, University of Sassari, Italy, 3Cargill Animal Nutrition, Spessa, Italy.

Animal Health V
Chair: James Strickland, USDA-ARS
Sagamore Ballroom 2

2:00 PM  385  Advances in respiratory disease research. G. D. Snowden*, National Center for Foreign Animal and Zoonotic Disease Defense, College Station, TX.

3:00 PM  386  An evaluation of tulathromycin treatment at post-weaning movement on the incidence of respiratory disease and on growth in commercial dairy calves. A. Stanton*, S. J. LeBlanc1, R. T. Dingwell1, D. Kelton1, S. T. Millman1, J. Wormuth1, and K. E. Leslie1, 1University of Guelph, Guelph, ON, Canada, 2CY Heifer Farm, Elba, NY.


3:30 PM  388  Comparison of Brix (sugar) refractometer and colostrometer for evaluation of colostrum quality in dairy cows. P. Dinsmore* and A. Skidmore2, 1Colorado State University, Fort Collins, 2Schering-Plough Animal Health, Alexander, NY.

3:45 PM  389  Thermal imaging of the bovine muzzle and the correlation to rectal temperature. S. M. Behrends*, T. B. Schmidt, P. Ryan, S. Willard, M. McGee, C. Welch, C. Trejo, J. O. Buntyn, and C. Huston, Mississippi State University, Mississippi State.

4:00 PM  390  Sorting heifers with high risk of bovine respiratory disease based on arrival serum haptoglobin concentration. B. P. Holland*, L. O. Burciaga-Robles, D. L. Step, and C. R. Krehbiel, Oklahoma State University, Stillwater.
Effects of on-arrival vs. delayed clostridial or modified-live respiratory vaccinations on health, performance, bovine viral diarrhea titers, and physiological measures in high-risk, newly received beef calves. J. T. Richeson*, E. B. Kegley1, M. S. Gadberry2, P. A. Beck3, J. G. Powell1, and C. Jones4, 1University of Arkansas, Fayetteville, 2University of Arkansas, Little Rock, 3University of Arkansas, Hope, 4Boehringer-Ingelheim Vetmedica Inc., St. Joseph, MO.

Effect of length of time between maternal separation and shipping on post-weaning performance of beef calves weaned during the fall. J. W. Bolte*, K. C. Olson1, J. R. Jaeger1, T. B. Schmidt2, D. U. Thomson1, B. J. White1, R. L. Larson1, A. Sproul1, L. A. Pachenco1, and M. D. Thomas1, 1Kansas State University, Manhattan, 2Mississippi State University, Starkville.


SYMPOSIUM
ARPAS Symposium
Livestock Pharmaceuticals: The Past, The Present, The …
Chair: Marit Arana, A.L. Gilbert Co.

2:00 PM 391 Symposium Welcome. Marit Arana.

2:05 PM 392 ARCAS-ARPAS: Then and Now. W. D. Price, DAF/OSC/CVM/FDA, Smithburg, MD.

2:20 PM 393 50 years of pharmaceutical technology and its impact on the livestock we produce. R. L. Preston*, Professor Emeritus, Bellingham, WA.

2:50 PM 394 How are we making bacteria more resistant to antibiotics? Darwinian impacts. T. R. Callaway*, J. L. Rychlik2, T. S. Edrington1, R. C. Anderson1, and D. J. Nisbet1, 1ARS, Food and Feed Safety Research Unit, College Station, TX, 2Rychlik and Associates, Hillsboro, OR.

3:20 PM 395 Antibiotic resistance gene transfer in the intestinal tract – Possible implications for agriculture? A. Slayers*, University of Illinois, Urbana.


4:20 PM Discussion/Wrap-up

SYMPOSIUM
ASAS Graduate Student Symposium
Academia, Industry, Government, or None of the Above: Graduation is Coming, What Next?
Chair: Craig Gifford, University of Idaho
Sponsor: American Society of Animal Science

Sagamore Ballroom 7

2:00 PM 397 Applying for an academic position. T. Etherton*, Penn State University, University Park.


2:50 PM 399 Careers in government. R. D. Green*, Pfizer Animal Genetics, Sutton, NE.

3:15 PM 400 Graduate student career opportunities in the animal science industry. J. F. Stika*, Certified Angus Beef LLC, Wooster, OH.

3:40 PM 401 Opportunities for graduate students in American Society of Animal Science. A. E. Radunz*, The Ohio State University, Columbus.
Breeding and Genetics
Applications of Genomic Analysis
Chair: Janice Rumph, Michigan State University
Sagamore Ballroom 3

2:00 PM 403 Validation of multiple marker DNA profiles for carcass merit across multiple populations of beef cattle. J. D. Nkrumah* and B. W. Woodward, Merial Limited, Duluth, GA.

2:15 PM 404 Genetic prediction of beef tenderness using a multi-marker SNP panel. S. P. Miller*1, M. J. Kelly1, and D. J. Nkrumah1, 1University of Guelph, Guelph, ON, Canada.

2:30 PM 405 Multiple marker DNA profiles for production, fertility, and functional traits in Holstein cattle. J. D. Nkrumah and B. W. Woodward*, Merial Limited, Duluth, GA.

2:45 PM 406 Application of a Bayesian approach to identify candidate markers for marker assisted selection in pigs. M. A. Cleveland* and N. Deeb, Genus plc, Hendersonville, TN.

3:00 PM 407 Genomic selection of purebreds using data from admixed populations. A. Toosi*1, R. Fernando1, J. C. M. Dekkers1, and R. L. Quaas2, 1Iowa State University, Ames, 2Cornell University, Ithaca, NY.

3:15 PM 408 A marker-assisted assessment of genotype by environment interaction: SNP-mortality association in broilers in two hygiene environments. N. Long1, D. Gianola1, G. J. M. Rosa*1, K. A. Weigel1, and S. Avendaño2, 1University of Wisconsin, Madison, 2Aviagen Ltd., Newbridge, UK.

3:30 PM Break

3:45 PM 409 Linkage disequilibrium and persistence of phase in Holstein Friesian, Jersey and Angus cattle. A. P. W. De Roos*1, B. J. Hayes2, R. J. Spelman3, and M. E. Goddard2,4, 1CRV, Arnhem, the Netherlands, 2Animal Genetics and Genomics, Primary Industries Research Victoria, Atwood, Australia, 3Livestock Improvement Corporation, Hamilton, New Zealand, 4University of Melbourne, Melbourne, Australia.

4:00 PM 410 Estimated linkage disequilibrium in a multi-breed beef herd based on the Illumina BovineSNP50 BeadChip. M. J. Kelly*1, M. Sargolzaei1, Z. Wang2, D. Kolbehdari2, P. Stothard2, F. Schenkel1, S. S. Moore2, and S. P. Miller1, 1University of Guelph, Guelph, ON, Canada, 2University of Alberta, Edmonton, AB, Canada.

4:15 PM 411 Linkage disequilibria of the SLA region loci with malignant melanoma in Sinclair swine. L. Gomez-Raya*1, M. Miller1, C. S. Ho2, V. Kirchhoff2, D. M. Smith2, W. M. Rauw1, D. Thain1, A. Rink1, and C. W. Beattie1, 1University of Nevada, Reno, 2University of Illinois, Chicago.

4:30 PM 412 QTL with dominance effect affecting residual feed intake on BTA6. G. C. Márquez*1, R. M. Enns1, M. D. Grosz2, and M. D. MacNeil1, 1Colorado State University, Fort Collins, 2Monsanto Co., St. Louis, MO, 3USDA, Agricultural Research Service, Miles City, MT.


SYMPOSIUM
Companion Animals
Perceptions and Implications of Companion Animals in Research and Teaching – Domestically and Globally
Chair: Ryan Yamka, Hill’s Pet Nutrition Inc.
Sponsors: European Association of Animal Production, Hill’s Science Diet, Iams, and Nestle Purina
105–106

2:00 PM Introduction. R. Yamka, Hill’s Pet Nutrition Inc.

2:05 PM 414 ASAS Centennial Presentation: Evolution of companion animals – A perception shift. L. P. Case*12, 1University of Illinois, Urbana, 2AutumnGold Consulting, Mahomet, IL.

2:35 PM 415 Past-present perceptions and research in companion animals – A domestic viewpoint. G. Czarnecki-Maulden*, Nestle Purina Research Center, St. Louis, MO.
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<th>Time</th>
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<td>2:55 PM</td>
<td>Past-present perceptions and research in companion animals – An international viewpoint. P. Nguyen*, L. Prola², R. C. Nap¹, P. P. Mussa, and J. Nery¹, ¹National Veterinary School of Nantes, Nantes, France, ²Veterinary School of Turin, Turin, Italy, ³Uppertunity Consultants, Utrecht, the Netherlands.</td>
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<td>3:55 PM</td>
<td>Break</td>
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<td>4:15 PM</td>
<td>Alternatives to live animal models in companion animals: Research location shift. G. Kuhlman* and M. A. Tetrick, Procter &amp; Gamble Pet Care Research &amp; Development, Lewisburg, OH.</td>
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<td>4:30 PM</td>
<td>Alternative systems for evaluating digestion in companion animals. D. L. Harmon* and M. R. C. de Godoy, University of Kentucky, Lexington.</td>
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<td>4:45 PM</td>
<td>Computer modeling: An alternative to live companion animal testing. R. M. Yamka* and N. Z. Frantz, Hill’s Pet Nutrition Inc., Topeka, KS.</td>
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<td>5:00 PM</td>
<td>ASAS Centennial Presentation: The future of teaching and research in companion animal biology in departments of animal sciences. J. McNamara*, Washington State University, Pullman.</td>
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**SYMPOSIUM**

**Dairy Foods**

**Changes and Challenges of Probiotics in Dairy Products**

Chair: David McCoy, Chr. Hansen

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<tr>
<td>2:00 PM</td>
<td>Probiotics: From Metchnikoff to bioactives. N. P. Shah*, Victoria University, Melbourne, Victoria, Australia.</td>
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<td>2:30 PM</td>
<td>Probiotics in natural cheese. B. Dias* and N. Mix, Kraft Foods Inc, Glenview, IL.</td>
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<td>3:00 PM</td>
<td>Development of yoghurt and specialty milks containing probiotics. C. P. Champagne*, Agriculture and Agri-Food Canada, St. Hyacinthe, QC, Canada.</td>
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<td>3:30 PM</td>
<td>Break</td>
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<td>3:45 PM</td>
<td>Recent trends in the microencapsulation and delivery of probiotics in dairy foods. K. Kailasapathy*, University of Western Sydney, Hawkesbury, NSW, Australia.</td>
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**SYMPOSIUM**

**Extension Education**

**From 40 Acres and a Mule to Today: Historical Perspective of Extension Programming**

Chair: Joe Harrison, Washington State University

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<tr>
<td>2:00 PM</td>
<td>ASAS Centennial Presentation: History of extension. J. Paterson*, Montana State University, Bozeman, MT.</td>
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<td>2:30 PM</td>
<td>ASAS Centennial Presentation: Evolution of delivery methods. M. Hutjens*, University of Illinois, Urbana, IL.</td>
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<td>3:00 PM</td>
<td>ASAS Centennial Presentation: From 40 acres and a mule to today: Historical perspective of extension programming: HorseQuest. E. A. Greene*, University of Vermont, Burlington.</td>
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</tbody>
</table>
3:40 PM 432 ASAS Centennial Presentation: Beef Cattle Clearinghouse: An eXtension Website. R. Rasby*, G. Selk2, L. Anderson1, R. Weaber1, T. Marston1, C. Wright1, J. Paterson1, C. Mathis1, G. Lardy1, J. Whittier11, D. Strohbehn11, T. McCollum11, S. Paisley11, C. Lane11, D. Hamernik11, 1University of Nebraska, Lincoln; 2Oklahoma State University, Stillwater; 3University of Kentucky, Lexington; 4University of Missouri, Columbia; 5Kansas State University, Manhattan; 6South Dakota State University, Brookings; 7Montana State University, Bozeman; 8New Mexico State University, Las Cruces; 9North Dakota State University, Fargo; 10Colorado State University, Fort Collins; 11Iowa State University, Ames; 12Texas A&M University, Amarillo; 13University of Wyoming, Laramie; 14University of Tennessee, Knoxville; 15USDA-CSREES, Washington, DC.

4:00 PM 433 ASAS Centennial Presentation: Pork Information Gateway in eXtension. D. J. Meisinger*, US Pork Center of Excellence, Iowa State University, Ames.

4:20 PM Discussion

Forages and Pastures II
Chair: Guillermo Scaglia, Louisiana State University
103

2:00 PM 434 Effect of limiting hay access time on dry matter intake by beef cows. C. J. Fleenor*, R. P. Lemenager, M. C. Claey, and S. L. Lake, Purdue University, West Lafayette, IN.

2:15 PM 435 Effect of ruminal fermentation and microbial population on the growth performance of dairy heifers. S. Marín N. México. 1Facultad de Agronomía Universidad Autónoma de Nuevo León, Marín N. L. México. 2Facultad de Medicina Veterinaria y Zootecnia Universidad Juárez del Estado de Durango, Durango, México. 3Instituto de Ciencia Animal, San José de Las Lajas, Habana, Cuba.


3:00 PM 438 Morphological composition of marandu palisadegrass pasture managed under different herbage allowance grazed by dairy cattle in rotational stocking system. A. C. R. Ruggieri*, E. R. Janusckiewicz1, D. R. Casagrande1, R. A. Reis2, and M. A. Magalhães2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil; 2Conselho Nacional de desenvolvimento Científico e Tecnológico, Brasília, DF, Brazil; 3Fundação de Amparo a Pesquisa do Estado de São Paulo, São Paulo, Brazil.

3:15 PM 439 Evaluation of forage sampling method and chemical composition of diet selection by cattle grazing subtropical forages during the summer. A. Hughes* and M. Hersom, University of Florida, Gainesville.


Horse Species II
Chair: Jason Turner, New Mexico State University
104

2:00 PM 441 ASAS Centennial Presentation: Historical review and future outlook of equine nutrition. H. Hintz*, Cornell University, Ithaca, NY.

3:00 PM 442 Glycemic and insulinemic responses differ in the morning versus the afternoon. L. M. Williamson1, W. B. Stanley2, and R. J. Geor1, 1Virginia Polytechnic Institute and State University, Blacksburg; 2Pennsylvania State University, State College.


3:30 PM 444 Glycemic response to meal length in equines. J. R. Bland*, E. L. Wagner1, and W. H. McElhenney2, 1Auburn University, Auburn, AL; 2Tuskegee University, Tuskegee, AL.

3:45 PM Break

4:15 PM 446 Inflammation and vitamin E intake in horses during a CCI**/CCI*** three-day event. C. A. Williams*, E. D. Lamprecht, and A. O. Burk, *Rutgers, The State University of New Jersey, New Brunswick, **University of Maryland, College Park.


Lactation Biology I
Chair: Ben Corl, Virginia Polytech

2:00 PM 449 The acute response to milk removal and the long-term response to frequent milking treatment involve distinct mechanisms. E. H. Wall*, J. P. Bond, and T. B. McFadden, *University of Vermont, Burlington.

2:15 PM 450 The effects of increased milking frequency during early lactation on metabolism and mammary cell proliferation in Holstein cows. F. Soberon*, J. L. Lukas, M. E. Van Amburgh, A. V. Capuco, and T. R. Overton, *Cornell University, Ithaca, NY, **Bovine Functional Genomics Laboratory, USDA-ARS, Beltsville, MD.


3:00 PM Break

3:15 PM 453 Suppression of bovine αS1-casein gene expression during involution of the mammary gland is associated with increased DNA methylation at a STAT5-binding site in the αS1-casein promoter. K. Singh*, K. Swanson, C. Couldrey, H.-M. Seyfert, and K. Stelwagen, *AgResearch Ltd, Ruakura Research Centre, Hamilton, New Zealand, **Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.


3:45 PM 455 Effect of the prolactin-release inhibitor Quinagolide on dairy cows. P. Lacasse*, V. Lollivier, R. M. Bruckmaier, Y. R. Boisclair, G. W. Wagner, and M. Boutinaud, *Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, **INRA, Agrocampus Rennes, St-Gilles, France, ***University of Bern, Switzerland, *Cornell University, Ithaca, NY, **University of Western Ontario, London, ON, Canada.


Meat Science and Muscle Biology

Beef Quality

Chair: Dean Pringle, The University of Georgia

Sagamore Ballroom 1

2:00 PM 458 National Market Cow and Bull Beef Quality Audit-2007: A survey of producer-related defects. J. D. W. Nicholson1, R. J. Maddock2, R. J. Delmore1, T. E. Lawrence1, W. R. Henning1, T. D. Pringle2, D. D. Johnson1, J. C. Paschal1, R. J. Gill1, J. J. Cleere1, B. B. Carpenter1, R. V. Machen1, J. P. Banta1, J. W. Savell1, D. S. Hale*1, and D. B. Griffin1, 1Texas A&M University, College Station, 2North Dakota State University, Fargo, California Poly Technical University, San Luis Obispo, 3West Texas A&M University, Canyon, 4Pennsylvania State University, University Park, 5University of Georgia, Athens, 6University of Florida, Gainesville.

2:30 PM 459 Expression of myosin heavy chain mRNA in skeletal muscle of zilpaterol-HCl fed steers. R. J. Rathmann*1, T. J. Baxa2, J. T. Vasconcelos1, M. L. Galyean1, B. J. Johnson1, and M. F. Miller1, 1Texas Tech University, Lubbock, 2Kansas State University, Manhattan.

2:45 PM 460 Zilpaterol-HCl feeding reduces myosin heavy chain mRNA abundance in skeletal muscle of finishing steers. T. J. Baxa*1, J. P. Hutcheson2, M. F. Miller1, W. T. Nichols2, M. N. Streeter2, D. A. Yates2, and B. J. Johnson1, 1Kansas State University, Manhattan, 2Intervet Inc., Millsboro, DE, 3Texas Tech University, Lubbock.

3:00 PM 461 Effects of ractopamine hydrochloride and zilpaterol hydrochloride fed to beef steers for the final 33 days of the finishing period on growth performance, carcass traits and Warner Bratzler shear force. W. J. Platter1, R. A. Gomez1, W. T. Choat*1, S. M. Scramlin2, and F. K. McKeith2, 1Elanco Animal Health, Greenfield, IN, 2University of Illinois, Urbana.

3:15 PM 462 Sensory attributes of beef from steers finished with corn or high-tannin sorghum. R. E. Larraín*1,2, D. M. Schaefer1, and J. D. Reed1, 1University of Wisconsin, Madison, 2Pontificia Universidad Católica de Chile, Santiago, RM, Chile.

3:30 PM 463 Development of a natural beef production and marketing program for Holstein bull calves. M. J. Baker*1, D. G. Fox2, W. R. Henning3, L. O. Tedeschi1, and D. J. Ketchen1, 1Cornell University, Ithaca, NY, 2Pennsylvania State University, University Park, 3Texas A&M University, College Station.

3:45 PM 464 Fatty acid composition of beef finished on various forage species or concentrates. S. K. Duckett*1, J. P. S. Neel2, J. P. Fontenot3, W. Clapham2, and W. S. Swecker Jr.3, 1Clemson University, Clemson, SC, 2USDA-ARS, Beaver, WY, 3Virginia Tech University, Blacksburg.

4:00 PM 465 Effect of finishing steers on different forages or high concentrate diet on rib composition, color, and palatability. S. K. Duckett*1, J. P. S. Neel3, J. P. Fontenot1, W. Clapham1, and W. S. Swecker Jr.1, 1Clemson University, Clemson, SC, 2USDA-ARS, Beaver, WY, 3Virginia Tech University, Blacksburg.

SYMPOSIUM

Nonruminant Nutrition

Oxidative Stress and the Use of Antioxidants for Nonruminant Animals

Chair: Sung Woo Kim, North Carolina State University


Sagamore Ballroom 4

2:00 PM Introduction. S. W. Kim, North Carolina State University.

2:10 PM 466 Oxidative stress during the lifecycle of animals. W. P. Weiss* and D. C. Mahan, The Ohio State University, Wooster and Columbus.

2:50 PM 467 Roles in animals of the antioxidant micronutrients vitamin E, vitamin C, and selenium. R. F. Burk*, Vanderbilt University, Nashville, TN.

3:35 PM 468 Bioavailability of natural and synthetic vitamin E in sows and their progeny. C. Lauridsen*, University of Aarhus, Tjele, Denmark.

# Physiology and Endocrinology

**The Physiology of Gestation and the Post-Partum Interval**  
**Chair: Rhonda Vann, Mississippi State University**  
**Sagamore Ballroom 6**

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<tr>
<td>2:00 PM</td>
<td>470</td>
<td>Fibroblast growth factor 2-induced expression of interferon-tau is mediated by protein kinase C in bovine trophotrope. Q. Yang*, S. E. Johnson, and A. D. Ealy, <em>University of Florida, Gainesville.</em></td>
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<td>2:30 PM</td>
<td>472</td>
<td>Reduced angiogenic factor expression in cotyledonary (COT) arteries of overnourished, obese ewes at midgestation. Y. Ma*, M. J. Zhu, P. W. Nathanielsz<em>1,2, and S. P. Ford, 1</em>University of Wyoming, Laramie,* 2<em>University of Texas, San Antonio.</em></td>
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<tr>
<td>2:45 PM</td>
<td>473</td>
<td>Increased circulating progesterone (P_4) levels during the estrous cycle in offspring of nutrient restricted ewes. L. A. George*, P. W. Nathanielsz<em>1,2, and S. P. Ford, 1</em>University of Wyoming, Laramie,* 2<em>University of Texas, San Antonio.</em></td>
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<tr>
<td>3:00 PM</td>
<td>474</td>
<td>Increased macrophage migration inhibition factor (MIF) in the pancreas of fetuses gestated by overnourished, obese ewes. L. Zhang*, M. J. Zhu, P. W. Nathanielsz<em>1,2, and S. P. Ford, 1</em>University of Wyoming, Laramie,* 2<em>University of Texas Health Sciences Center, San Antonio, TX.</em></td>
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<td>3:30 PM</td>
<td>Break</td>
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<tr>
<td>3:45 PM</td>
<td>476</td>
<td>Meta-analysis of progesterone supplementation during early pregnancy in cattle. G. E. Mann*, <em>University of Nottingham, Sutton Bonnington Campus, Loughborough, UK.</em></td>
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# Production, Management and the Environment  
**Disease, Management and Environment**  
**Chair: Micheal Brouk, Kansas State University**  
**205**

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<th>Time</th>
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Incidence of peripartum health related problems in Argentine dairy herds. C. Corbellini¹, F. Busso¹, F. Bargo², B. Suarez², J. Grigera², M. Podetti², and G. Tuñon³, ¹INTA, Argentina, ²Elanco, Argentina, ³AACREA, Argentina.

Relationships between production measurements and sow longevity in a university research herd. M. S. Hicks* and W. F. Owsley, *Auburn University, Auburn, AL.

**SYMPOSIUM**

**Ruminant Nutrition**

**Glycerin as a Feed for Ruminants**

**Chair: Cathy Bandyk, QLF**

**Sponsors: Prince Agri-Products Inc., and Vi-Cor, Varied Industries Corporation**

**500 Ballroom**

2:00 PM  Introduction. C. Bandyk, QLF.

2:05 PM  488 Glycerin as a feed ingredient, official definition(s) and approvals. R. S. Sellers*, *American Feed Industry Association, Arlington, VA.

2:30 PM  489 Ruminal and physiological metabolism of glycerin. C. R. Krehbiel*, *Oklahoma State University, Stillwater.

3:00 PM  490 Glycerin as a feed for ruminants: Using glycerin in high-concentrate diets. J. S. Drouillard*, *Kansas State University, Manhattan.

3:30 PM  491 Using glycerin as a supplement for forage-fed ruminants. B. W. Hess¹, S. L. Lake², and S. A. Gunter¹, ¹University of Wyoming, Laramie, ²Purdue University, West Lafayette, IN, ³University of Arkansas, Hope.

4:15 PM  492 Use of glycerin in dairy diets. S. S. Donkin*, *Purdue University, West Lafayette, IN.

**Small Ruminant**

**Sheep**

**Chair: Kenneth M. Andries, Kentucky State University**

**107–108**

2:00 PM  493 **ASAS Centennial Presentation:** Impacts of animal science research on US sheep production and predictions for the future. C. J. Lupton*, *Texas AgriLife Research, San Angelo, TX.

2:30 PM  Discussion

2:45 PM  494 Impact of grazing systems on management of gastrointestinal nematodes in weaned lambs in Arkansas. J. M. Burke*, ¹J. E. Miller², and T. H. Terrill³, ¹USDA, ARS, Booneville, AR, ²Louisiana State University, Baton Rouge, ³Fort Valley State University, Fort Valley, GA.


3:15 PM  Withdrawn by author.

3:15 PM  Break

3:45 PM  497 Ability of ewes to rebreed while lactating in spring. K. M. Jordan*, J. W. Knight, and D. R. Notter, *Virginia Polytechnic Institute and State University, Blacksburg.

Effect of protein degradability on milk production of dairy ewes. C. M. Mikolayunas*, L. E. Armentano, and D. L. Thomas, University of Wisconsin, Madison.

Implementing electronic identification for milk recording in dairy sheep. A. Ait-Saidi, A. A. K. Salama, S. Carné*, and G. Caja, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain.

Teaching/Undergraduate and Graduate Education
Teaching in the Animal Sciences
Chairs: Jeannette Moore, North Carolina State University, and John Parrish, University of Wisconsin-Madison


The Graduate Experience Program. J. A. Atkins*, D. L. McNamara², and G. W. Jesse¹, University of Missouri, Columbia, ²University of Wisconsin, Platteville.


The challenges and opportunities of teaching a virtual introduction to animal science course. M. Latour*, Purdue University, West Lafayette, IN.

Engaging students with service learning within an animal science curriculum at Texas Tech University- a ten year perspective. H. Brady*, Texas Tech University, Lubbock.

Use of eID to monitor classroom attendance. L. D. Luqué* and D. A. Nichols, Kansas State University, Manhattan.


TH2  Validation of a water HOBO and the Noldus Observer for drinking behavior in the nursery pig. A. M. Meiszberg*, A. M. Meiszberg¹, A. K. Johnson¹, J. W. Dailey², J. A. Carroll², J. R. Garvey¹, and N. Krebs¹, Animal Science, Iowa State University, Ames; USDA-ARS, Livestock Issues Research Unit, Lubbock, TX; Pork Industry Institute, Texas Tech University, Lubbock.

TH3  Temporary glycosuria alters molasses consumption in Holstein calves. C. S. Wilcox*, M. M. Schutz¹, S. S. Donkin¹, and S. D. Eicher², Purdue University, West Lafayette, IN; USDA-ARS, West Lafayette, IN.

TH4  Effect of alternative models for increasing stocking density on the lying behavior, hygiene, and short-term productivity of lactating Holstein dairy cattle. P. D. Krawczel*, C. S. Mooney¹, H. M. Dann¹, M. P. Carter¹, R. E. Butzler¹, C. S. Ballard¹, and R. J. Grant¹, William H. Miner Agricultural Research Institute, Chazy, NY; USDA-ARS, West Lafayette, IN.

TH5  Hard water preservative effect of Birjand Quanats to reduce lead acetate toxicity on Capoeta fusca. A. Omidi* and H. Farhangfar, Birjand University, Birjand, Iran.

TH6  Less common complication of traumatic reticulitis in cattle: Abscess on left thoracic wall. A. Omidi*, Birjand University, Birjand, Iran.

TH7  Comparison of attachment to feed ingredients of whole E. coli K88 cells and purified F4/K88 fimbriae. P. M. Becker¹, S. Galetti³, J. Van der Meulen¹, A. Bannink*¹, and H. C. A. Widjaja¹, Wageningen University Research Centre, Lelystad, the Netherlands; University of Milan, Milan, Italy.

TH8  Effects of spray-dried porcine plasma on nasal associated lymphoid tissue in a lung inflammation model in mice. A. Pérez-Bosque¹, L. M. Miró, J. Polo⁰, L. Russell¹, J. Campbell¹, E. Weaver¹, J. Crenshaw¹, and M. Moreto*, Universitat de Barcelona, Barcelona, Spain; APC Europe, Granollers, Barcelona, Spain; APC Inc., Ankeny, IA.

TH9  Endophyte infected fescue seed causes vasoconstriction in horses as measured by Doppler ultrasonography. E. S. Moore*, A. G. Parks, L. M. Lawrence, and K. J. McDowell, University of Kentucky, Lexington.

TH10  Survey of Clostridium perfringens Type A prevalence and genotypes in calves and in vitro development of Omni-Bos CB™, a calf specific, Bacillus-based direct fed microbial. C. Wehnes*, V. Patkevich, K. Mertz, and T. G. Rehberger, Agtech Products Inc., Waukesha, WI.

TH11  The effects of feeding tall fescue seed on daily feed intakes of horses. A. G. Parks* and L. M. Lawrence, University of Kentucky, Lexington.

TH12  Hemodynamics in the caudal artery of beef heifers fed different ergot alkaloid concentrations. G. E. Aiken*, J. R. Strickland¹, M. L. Looper², and F. N. Schrick³, USDA-ARS-Forage-Animal Production Research Unit, Lexington, KY; USDA-ARS-Dale Bumpers Small Farms Research Center, Booneville, AR; University of Tennessee, Knoxville.

TH13  Analysis of locomotion scores with altered periparturient management. S. Eicher*, M. M. Schutz², J. Townsend², K. Daniels², S. Donkin¹, and A. Parkhurst¹, USDA-ARS, West Lafayette, IN; Purdue University, West Lafayette, IN; University of Nebraska, Lincoln.

TH14  Experimental haemonchosis in resistant and susceptible Creole kids. J. C. Bambou*, E. Gonzalez-Garcia, C. de la Chevrotière, R. Arquet, N. Vachiéry, and F. Mandonet, INRA UR143 Unité de Recherches Zootechniques (URZ), Centre Antilles Guyane, Domaine Duclos, 97170 Petit Bourg, Guadeloupe (French West Indies).

TH15  JDIP – Phase II. K. E. Olson*, KEO Consulting, Schaumburg, IL.
Contemporary and Emerging Issues
Exhibit Hall CDE


TH17  Animal biotechnology: The movie. A. L. Van Eenennaam* and W. E. Pohlmeier, University of California, Davis.

Dairy Foods
Dairy Products and Processing I
Exhibit Hall CDE


TH19  Thirty-four percent whey (WPC) and serum protein (SPC) concentrate and 65% serum protein (SP) reduced micellar casein: Production and composition. J. Zulewska*, D. M. Barbano2, M. W. Newbold2, M. A. Drake1, E. A. Foegeding1, and C. Moraru2, 1University of Warmia and Mazury, Olsztyn, Poland, 2Cornell University, Ithaca, NY, 3North Carolina State University, Raleigh.

TH20  Comparison of sensory and functional properties of 34% serum (SPC) and 34% whey protein concentrates (WPC). J. P. Evans*, P. J. Luck1, E. A. Foegeding1, J. Zulewska*, D. M. Barbano, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Cornell University, Ithaca, NY, 3University of Warmia and Mazury, Olsztyn, Poland.

TH21  The effect of crosslinked β-cyclodextrin treatment on the rheological and sensory properties of ice cream. H. J. Ha* and H. S. Kwak, Sejong University, Seoul, Korea.


TH23  Addition of rice extract improves the quality characteristics and consumer acceptability of banana flavored yogurt. T. Bor*, D. Song, C. W. Seo, and S. A. Ibrahim, North Carolina A&T State University, Greensboro.

TH24  Functional properties of 65% serum protein reduced micellar casein concentrates obtained by microfiltration. C. M. Belciuc1, J. Zulewska2, M. Newbold1, C. I. Moraru*, and D. M. Barbano1, 1Cornell University, Ithaca, NY, 2University of Warmia and Mazury, Olsztyn, Poland.

TH25  Surface hydrophobicity of co-extruded and milled corn starch with whey protein concentrate as a function of pH. S. L. Amaya-Llano*, E. Castano-Tostado2, F. Martinez-Bustos1, and L. Oszimek3, 1Ciencia de Materiales, CINVESTAV Queretaro, Queretaro, Queretaro, Mexico, 2PRO-PAC, Universidad Autonoma de Queretaro, Queretaro, Queretaro, Mexico, 3University of Alberta, Edmonton, AB, Canada.

TH26  Effect of ultrasound treatment on microbial load in milk. S. Gokavi, T. Silk, and M. Guo*, University of Vermont, Burlington.

TH27  Effects of high pressure homogenization on milk. C. A. Boeneke*, A. Pastorek, and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

TH28  Classification of cream butter by infrared spectroscopy and multivariate analysis. S. Herringshaw*, N. Kocaoglu-Vurma, and L. Rodriguez-Saona, The Ohio State University, Columbus.

TH29  Effect of various antioxidants on the characteristics of plain yogurt. B. Brignac1 and K. Aryana*, 1Louisiana State University, Baton Rouge, 2Louisiana State University Agricultural Center, Baton Rouge.

TH30  Effect of stabilizer and emulsifier concentration on particle size and melting rate of ice cream. S. L. Cropper*, N. A. Kocaoglu-Vurma, and W. J. Harper, The Ohio State University, Columbus.

TH31  Fluctuation on composition and insoluble aggregates in a whey protein concentrate (WPC) manufacturing line: Implications for quality and function. M. Costa1, M. Gigante2, P. Tong1, and R. Jimenez-Flores*, 1California Polytechnic State University, San Luis Obispo, 2UNICAMP, Campinas-Sao Paulo, Brazil.

TH32  Influence of pulsed electric field processing on protease activity of Lactobacillus acidophilus LA-K in skim milk. O. Cueva1 and K. Aryana*, 1Louisiana State University, Baton Rouge, 2Louisiana State University Agricultural Center, Baton Rouge.

TH33  Production of native whey from whole milk. J. Jarto*, J. A. Lucey1, D. Zhu1, and K. E. Smith2, 1University of Wisconsin, Madison, 2Wisconsin Center for Dairy Research, Madison, WI.

TH34  Flavor assessments of heated sweet cream butter. E. L. Harvey*, A. M. Renaud, and S. A. Rankin, University of Wisconsin, Madison.


Behavior of steers grazing novel endophyte tall fescue in southern Arkansas. B. Stewart*, P. Beck, D. Singh, and S. Gunter, *University of Arkansas, Hope, AR. **Barenbrug USA, Tangent, OR.

Comparing mathematical models to estimate productivity, utilization and nutritive quality of dallisgrass (*Brachiaria* cv. Tanzania pasture) as influenced by stocking density under continuous or rotational grazing. E. J. Bungenstab*, A. C. Pereira, J. C. Lin, B. Gamble, S. P. Schmidt, C. R. Kerth, and R. B. Muntifering, Auburn University, Auburn, AL.


Performance and carcass characteristics of the supplemented or not beef heifers grazing palisadegrass (*Brachiaria brizantha*) on the rainy season. D. R. Casagrande, R. A. Reis, A. C. Ruggieri, T. T. Berchielli, M. H. Moretti, J. F. de Mattos, and M. A. A. Balsalobre, São Paulo State University, Jaboticabal, São Paulo, Brazil. *Fundação de Amparo Pesquisa do Estado de São Paulo, São Paulo, Brazil. **Conselho Nacional de Desenvolvimento Científico Tecnológico, Brasília, Distrito Federal, Brazil. ***Bellman Nutrição Animal, Mirassol, São Paulo, Brazil.

Productivity, utilization and nutritive quality of dallisgrass (*Paspalum dilatatum*) as influenced by stocking density under continuous or rotational grazing. E. J. Bungenstab*, A. C. Pereira, J. C. Lin, J. L. Holliman, and R. B. Muntifering, Auburn University, Auburn, AL.

Supplementation with different levels and sources of energy for steers on *Panicum maximum* jaq cv. Tanzania pasture: forage availability, morphological composition and nutritive value. M. C. Ar. Santana*, V. P. B. Euclides, and A. B. Mancio, *Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil, **Empresa Brasileira de Pesquisa Agropecuária-Embrapa, Campo Grande, Mato Grosso do Sul, Brazil. ***Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Monensin and *Saccharomyces cerevisiae* as additive for beef heifers grazing *Brachiaria brizantha* cv. Marandu. L. M. Abaker Bertipaigual, G. M. Perca de Melo, A. Prates e Oliveira, R. Andrade Reis, T. T. Berchielli, A. S. Ferrado, E. Braga Malheiros, and L. Abaker Bertipaigual, *São Paulo State University, Jaboticabal, São Paulo, Brazil. **Conselho Nacional de Desenvolvimento e Tecnológico, Brasília, Distrito Federal, Brazil. ***Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, Brasília, Distrito Federal, Brazil. ****Fundação de Amparo à Pesquisa do Estado de São Paulo, São Paulo, Brazil.


Effects of urea inclusion and cooking time on intake of blocks containing greasy cottonseed meal by beef cows. T. A. Wickersham*, F. M. Rouquette, E. Sawyer, and R. O. Dittmar III, *Texas A&M University, College Station, **Texas AgriLife Research, Overton, TX.


TH57  Measures of acid detergent lignin recovery and evaluations of the 2.4 time lignin factor for estimating indigestible NDF. E. Raffrenato*, M. E. Van Amburgh, and P. J. Van Soest, Cornell University, Ithaca, NY.

TH58  Supplementation of arginine plus conjugated linoleic acid decreases the fat/lean mass ratio in rats. J. Nall*, G. Wu1, K. H. Kim2, S. B. Smith1, and L. A. Ford3, 1Texas A&M University, College Station, 2National Institute of Animal Science, Suwon, Korea.

TH59  Developmental regulation of delta-like protein 1 (DLK1) expression during chicken muscle development and regeneration. J. Shin*, D. Bae, J. A. Deulitis, S. G. Velleman, S. Lim, J. D. Latshaw, M. P. Wick, and K. Lee, The Ohio State University, Columbus.

TH60  Serum amyloid A protein mediates the regulation of docosahexaenoic acid on the expression of porcine genes related to lipid metabolism. S. T. Ding*, C. H. Chen, and H. J. Mersmann, National Taiwan University, Taipei, Taiwan, ROC.

TH61  Exocrine pancreatic insufficiency arrests growth of young pigs even after the parenteral or enteral feeding of an elemental diet. S. Rengman*, O. Fedkiv*, J. Botermans1, J. Svendsen2, B. R. Weström1, and S. G. Pierzynowski1, 1Lund University, Lund, Sweden, 2Swedish University of Agricultural Sciences, Alnarp, Sweden.


TH63  Effects of maternal low and high protein diets on body composition and skeletal muscle properties of newborn piglets. C. Rehfeldt, C. Kalbe, J. Block, G. Nuernberg, B. Stabenow, D. Loesel*, and C. C. Metges, Research Institute for the Biology of Farm Animals, Dummerstorf, Germany.

TH64  Body composition of transgenic pigs expressing the myostatin pro domain. A. D. Mitchell* and R. J. Wall, USDA-ARS, Animal Bioscience and Biotechnology Laboratory, Beltsville, MD.

TH58  Supplementation of arginine plus conjugated linoleic acid decreases the fat/lean mass ratio in rats. J. Nall*, G. Wu1, K. H. Kim2, S. B. Smith1, and L. A. Ford3, 1Texas A&M University, College Station, 2National Institute of Animal Science, Suwon, Korea.

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TH64  Body composition of transgenic pigs expressing the myostatin pro domain. A. D. Mitchell* and R. J. Wall, USDA-ARS, Animal Bioscience and Biotechnology Laboratory, Beltsville, MD.

TH65  Characterization of putative mammary stem cells in intact and ovariectomized prepubertal heifers. N. Korn1, L. Riggs2, R. M. Akers2, and S. Ellis*1, 1Clemson University, Clemson, SC, 2Louisiana State University, Baton Rouge, 3Virginia Polytechnic Institute and State University, Blacksburg.

TH66  Cloning the promoter region for bovine phosphoenolpyruvate carboxykinase gene and identification of propionate responsive region. S. L. Koser*, M. Thomas, and S. S. Donkin, Purdue University, West Lafayette, IN.

TH67  Quantification of glucose-6-phosphatase mRNA abundance in liver of transition dairy cows. E. M. Cedeno*, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.

TH68  Plasma and tissue concentrations of glucose, acetate, propionate, lactate, and hydroxybutyrate in calves subjected to conventional and accelerated milk replacer programs. H. A. Weeks*, A. G. Rius, K. M. Daniels, R. M. Akers, C. Umberger, and M. D. Hanigan, Virginia Polytechnic Institute and State University, Blacksburg.
TH69  Effect of β-mannanase enzyme mixture addition to soy-containing milk replacers on growth and health of neonatal calves. M. E. Van Amburgh*1, L. Nabte-Solis1, E. B. Helmes2, D. A. Ross3, and T. D. Sonnenberg1, 1Cornell University, Ithaca, NY, 2ChemGen, Gaithersburg, MD.


TH71  Increasing levels of dietary corn oil to grazing steers alters lipogenic gene expression. S. K. Duckett*, S. L. Pratt1, and E. Pavan2, 1Clemson University, Clemson, SC, 2INTA, Balcarce, Argentina.

TH72  Lipogenic gene expression in steers finished on high concentrate diets and pasture with or without energy supplementation. S. K. Duckett*, S. L. Pratt1, and E. Pavan2, 1Clemson University, Clemson, SC, 2INTA, Balcarce, Argentina.

TH73  Melengestrol acetate enhances adiogenic gene expression in an in vitro muscle-derived cell transdifferentiation model. K. Y. Chung* and B. J. Johnson, Kansas State University, Manhattan.

TH74  More selenium (Se) accumulates in whole blood, red blood cells, and liver of beef heifers when supplemented by an organic vs inorganic source. S. F. Liao*, W. R. Burris, K. R. Brown, J. A. Boling, and J. C. Matthews, University of Kentucky, Lexington.

TH75  Basal content of sugar transporter mRNA in small intestinal epithelia of beef steers is differentially increased by abomasal vs ruminal infusion of starch hydrolysate. S. F. Liao*, D. L. Harmon, E. S. Vanzant, K. R. McLeod, J. A. Boling, and J. C. Matthews, University of Kentucky, Lexington.

TH76  Roles of increased IGF-I expression and the estrogen 17β, androgen and IGF-I receptors in estradiol-17β and trenbolone acetate-stimulated proliferation of cultured bovine satellite cells. E. Kamanga-Sollo1, M. E. White*, M. R. Hathaway1, K. Y. Chung2, B. J. Johnson2, and W. R. Dayton*, 1University of Minnesota, St. Paul, 2Kansas State University, Manhattan.

TH77  Effects of trenbolone acetate (TBA), Estradiol (E2) and combined TBA/E2 implants on muscle IGF-I and IGF-II mRNA levels in feedlot steers. M. S. Pampusch1, M. E. White*, M. R. Hathaway1, K. Y. Chung2, B. J. Johnson2, and W. R. Dayton1, 1University of Minnesota, St. Paul, 2Kansas State University, Manhattan.

TH78  Effects of androgen and estrogen (E2) receptor blockers and E2-conjugated BSA on estrogen and trenbolone acetate-stimulated IGF-I expression in cultured bovine satellite cells. E. Kamanga-Sollo1, M. E. White*, M. R. Hathaway1, K. Y. Chung2, B. J. Johnson2, and W. R. Dayton1, 1University of Minnesota, St. Paul, 2Kansas State University, Manhattan.

TH79  Proglucagon and GLP-2 receptor mRNA distribution in the ruminant gastrointestinal tract. C. C. Taylor-Edwards*, D. B. Edwards, M. J. Doig, E. S. ciency of crossbred beef cattle


TH81  Biological efficiency of crossbred beef cattle finished on feedlot and slaughtered with distinct body weights. R. Mello*1,3, M. H. de Faria, A. C. de Queiroz2, F. D. de Resende2, D. S. Henrique3, and F. Maldonado2, 1Universidade de São Paulo/ESALQ, Piracicaba, SP, Brazil, 2Universidade Federal de Viçosa, Viçosa, MG, Brazil.


TH83  Temporal variables of the Arabian and Morgan Western Pleasure Jog. M. Nicodemus* and A. Luckett, Mississippi State University, Mississippi State.

TH84  Use of chicken vs. chukar (Alectoris chukar) egg yolk as components of freezing media for stallion semen. S. E. Harmon and G. W. Webb*, University of Kentucky, Lexington.


TH86  Estimation of body weight in ponies. G. S. Owen*, E. L. Wagner1, and W. S. Eller2, 1Auburn University, Auburn, AL, 2Louisiana State University, Baton Rouge.

TH87  Basal insulin and glucose concentrations in horses of North Carolina. K. M. Owens*, S. E. Pratt, L. E. Dowler, and M. T. Cloninger, North Carolina State University, Raleigh.


Application of forensic science technique to the management of an endangered horse population. E. Bömecke*1,2 and N. Gengler1,3, 1Gembloux Agricultural University, Gembloux, Belgium, 2FRIA, Brussels, Belgium, 3FNRs, Brussels, Belgium.

Sites of active nutrient absorption in the equine gastrointestinal tract. B. E. Aldridge*, T. B. Lescun, and J. S. Radcliffe, Purdue University, West Lafayette, IN.

Genistein reduces LPS stimulated TNFα release from equine monocytes. A. R. Taylor* and J. A. Clapper, South Dakota State University, Brookings.

Effect of exercise and superoxide dismutase on systemic antioxidants and nitric oxide in horses. E. D. Lamprecht*, C. A. Bagnell, and C. A. Williams, Rutgers, The State University of New Jersey, New Brunswick.


Effect of selenium supplementation and dietary energy manipulation on mares and their foals: Foaling parameters and foal physical characteristics. B. J. Karren*, J. F. Thorson2, C. A. Cavinder3, C. J. Hammer4, and J. A. Coverdale5, 1Texas A&M University, College Station, 2North Dakota State University, Fargo.

Effect of selenium supplementation and dietary energy manipulation on mares and their foals: Placental dynamics. J. F. Thorson*, B. J. Karren2, M. L. Bauer1, C. A. Cavinder2, J. A. Coverdale3, and C. J. Hammer4, 1North Dakota State University, Fargo, 2Texas A&M University, College Station.


International Animal Agriculture
Exhibit Hall CDE

A model of personal preparation for the international agricultural teaching and extension program between the United States and China. J. Peng*, Purdue University, West Lafayette, IN.

Energy and financial analysis of the conversion of a conventional beef cattle production system to an organic beef foodchain in Veracruz, Mexico. P. Fajersson*, G. Alvarado1, G. Benítez1, I. J. González1, J. Nieto1, W. Sangabriel1, and P. Parada2, 1Colegio de Postgraduados, Campus Veracruz, Veracruz, Mexico, 2Carnes La Rumorosa, Poza Rica, Veracruz, Mexico.

A meta-analysis on effects of supplementing low quality roughages with tree foliages on intake and growth in sheep. A. K. Patra*, West Bengal University of Animal and Fishery Sciences, Belghacia, Kolkata, India.

Lactation Biology
Exhibit Hall CDE

Identification of internal controls for quantitative PCR in mammary tissue from lactating cows receiving various lipid supplements. A. K. G. Kadegowda*, M. Bionaz2, B. Thering3, L. S. Piperova1, R. A. Erdman1, and J. J. Loor2, 1University of Maryland, College Park, 2University of Illinois, Urbana.

Gene network analysis in mammary tissue of lactating cows receiving abomasal infusions of butterfat, long-chain fatty acids, or CLA. A. K. G. Kadegowda*, L. S. Piperova1, S. L. Rodriguez-Zas2, R. E. Everts2, H. A. Lewin2, R. A. Erdman1, and J. J. Loor2, 1University of Maryland, College Park, 2University of Illinois, Urbana.

Differential expression of lipid transporters and their regulators during the lactation cycle in the bovine mammary gland. O. Mani1, M. T. Sorensen2, K. Sejrsen2, R. M. Bruckmaier*, and C. Albrecht1, 1University of Bern, Switzerland, 2University of Aarhus, Denmark.

Effects of rumen-protected choline administration on mRNA expressions of selected enzymes involved in mammary lipid metabolism. L. Pinotti*, F. D’Ambrosio*, R. Bruckmaier*, C. Albrecht*, V. Dell’Orto*, and A. Baldi*, University of Milan, Milan, Italy, University of Bern, Bern, Switzerland.

Hormonal influence on mammary tissue composition in pre-pubertal Holstein heifers. B. P. Hudson*, B. T. Velayudhan*, S. E. Ellis*, and R. M. Akers*, Virginia Polytechnic Institute and State University, Blacksburg, Clemson University, Clemson, SC.

Feeding genistein to prepubertal gilts stimulates their mammary development. C. Farmer*, S. Gilani*, M.-F. Palin*, H. Weiler*, M. Vignola*, R. K. Choudhary*, and A. V. Capuco*, Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, QC, Canada, Nutrition Research Division, Health Canada, Ottawa, ON, Canada, McGill University, Ste-Anne-de-Bellevue, QC, Canada, Nutreco Canada Agresearch, St-Romuald, QC, Canada, USDA-ARS, Bovine Functional Genomics Lab, Beltsville, MD.


Reduced nursing frequency during prolonged lactation in the mouse decreases milk production and increases mammary expression of tryptophan hydroxylase 1 (TPH1), but does not accelerate mammary gland remodeling. D. L. Hadsell*, W. Olea*, D. Torres*, J. George*, and R. J. Collier*, Baylor College of Medicine, Houston, TX, The University of Arizona, Tucson.

Evaluation and classification of milking disorders in Swiss dairy cattle. C. J. Belo*, S. Schlegel*, J. Moll*, and R. M. Bruckmaier*, University of Bern, Bern, Switzerland, Swiss Federal Institute of Technology Zurich, Zurich, Switzerland, Swiss Brown Cattle Breeders Federation, Zug and ASR, Bern, Switzerland.

Prestimulation combined with a short waiting time before cluster attachment affects milk removal in dairy cows. S. Kaskous* and R. M. Bruckmaier*, Damascus University, Damascus, Syria, University of Bern, Bern, Switzerland.


Effect of dry period length on calving related disorders. M. S. Gulay*, M. J. Hayes*, K. C. Bachman*, and H. H. Head*, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey, University of Florida, Gainesville.


Nonruminant Nutrition
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Impact of massive doses of copper or zinc on growth performance and nutrient digestibility of newly weaned piglets. M. Pelletier-Grenier*, A. Giguere, and F. Guay*, Universite Laval, Quebec, QC, Canada, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

Effect of different Ca and P level on early growth of fast-growth lines of Wulong Goose. B. W. Wang*, M. A. Zhang, X. P. Wu, G. L. Liu, and X. H. Jia, Qingdao Nongye University, Qingdao, Shandong Province, China.

TH122 Effects of rare earth supplementation on growth performance, blood immunological parameters, meat quality and fecal odor emission gases in finishing pigs. S. O. Shin1, J. H. Lee1, H. D. Jang1, Y. J. Chen1, J. H. Cho1, J. D. Hancock2, K. Y. Whang1, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2Korea University, Seoul, Korea.

TH123 The effect of different copper (inorganic and organic) and fat (tallow and glycerol) sources on growth performance, nutrient digestibility, and fecal excretion profile in growing pigs (regional study). Y. Huang1, J. S. Yoo1, H. J. Kim1, Y. J. Chen1, J. H. Cho1, Y. K. Han1, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2Sungkyunkwan University, Suwon, Korea.

TH124 The effects of 200 ppb added chromium from chromium propionate on the growth performance and carcass characteristics of finishing pigs. J. R. Bergstrom1, M. D. Tokach1, S. S. Dritz1, J. L. Nelssen1, R. D. Goodband1, J. M. DeRouchey1, J. D. Hahn2, and F. R. Valdez2, 1Kansas State University, Manhattan, 2Kemin Industries Inc., Des Moines, IA.

TH125 Evaluation of organic and inorganic trace minerals for pigs. Y. L. Ma1, M. D. Lindemann1, G. L. Cromwell1, R. B. Cox1, and G. Rentfrow1, University of Kentucky, Lexington.

TH126 Iron status evolution of weaned piglets fed different iron sources. P. Schlegel1, S. Durosoy1, and M. Dupas1, 1Pancosma S.A., Geneva, Switzerland, 2IDENA, Sautron, France.

TH127 Effects of sodium bisulfate on growth performance of weanling pigs. J. Jarrett1, S. Carter1, J. Bundy1, M. Lachmann1, and T. Walraven1, Oklahoma State University, Stillwater.


TH129 Differential expression of 15 selenoprotein genes in various tissues of pigs. H. Zhao1, J. C. Zhou1, X. Xiu1, K. N. Wang1, J. G. Li1, Y. Zhao1, Y. Liu1, and X. G. Lei1,2, 1Sichuan Agricultural University, Ya’an, China, 2Cornell University, Ithaca, NY.

TH130 Intestinal and renal Type II NaPi co-transporter gene expression patterns in growing pigs fed with different levels of dietary calcium. Y. Yin1, J. C. Zhou1, X. Xia1, K. N. Wang1, Y. Zhao1, Y. Han2, and I. H. Kim1, 1Korea University, Suwon, Korea, 2Dankook University, Cheonan, Chungnam, Korea.

TH131 Determination of the order of limiting amino acids in milk-based liquid diets for pigs from 1.5 to 5.5 kg. A. I. Broome1, R. J. Harrell2, J. Odle1, K. E. Sullivan1, and J. H. Eisemann1, 1North Carolina State University, Raleigh, 2Novus International Incorporated, St. Louis, MO.

TH132 Use of distillers dried grains with solubles and soybean hulls in nursery pig diets. F. F. Barbosa1, S. S. Dritz1, M. D. Tokach1, J. M. DeRouchey1, J. L. Nelssen1, R. D. Goodband1, and J. L. Nelssen, Kansas State University, Manhattan.

TH133 Amino acid supplementation of hydrolyzed feather meal diets for finisher pigs: I. Growth performance and serum metabolite profile. K. C. Divakala1, L. I. Chiba1, R. B. Kamalakar1, S. P. Rodning1, E. G. Welles1, K. A. Cummins1, J. Swann2, F. Cespedes2, and R. L. Payne2, 1Auburn University, Auburn, AL, 2American Proteins Inc., Hanceville, AL, 3Evonik-Degussa Corp., Kennesaw, GA.

TH134 Amino acid supplementation of hydrolyzed feather meal diets for finisher pigs: II. Carcass traits, meat quality, and internal organs. K. C. Divakala1, L. I. Chiba1, R. B. Kamalakar1, S. P. Rodning1, E. G. Welles1, K. A. Cummins1, J. Swann2, F. Cespedes2, and R. L. Payne2, 1Auburn University, Auburn, AL, 2American Proteins Inc., Hanceville, AL, 3Evonik-Degussa Corp., Kennesaw, GA.


TH136 Feed preferences in nursery pigs fed diets containing varying fractions and qualities of dried distillers grains with solubles. B. S. Seabolt1, E. van Heugten1, K. D. Angevan Heugten1, and E. Roura2, 1North Carolina State University, Raleigh, 2Universitat de Barcelona, Barcelona, Spain.

TH137 Effect of dietary protein level on serum haptoglobin and pro-inflammatory cytokine concentrations in piglets challenged with Escherichia coli K88. F. O. Opapeju1, R. L. Payne2, and C. M. Nyachoti1, 1University of Manitoba, Winnipeg, MB, Canada, 2Evonik-Degussa Corporation, Kennesaw, GA.


TH139 Effects of including field peas in diets fed to weanling pigs. H. H. Stein1 and D. N. Peters2, 1University of Illinois, Urbana, 2South Dakota State University, Brookings.


TH142  Effects of dietary level of brewer’s grain on growth performance and digestibility in growing pigs. J. S. Yoo*, J. D. Kim2, K. Y. Whang3, H. J. Jung4, S. B. Cho1, H. B. Seok1, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 3CJ CheilJedang, Seoul, Korea, 2Korea University, Seoul, Korea, 3National Institute of Animal Science, Korea.

TH143  Effect of bedding types and different crude protein levels on growth performance, visceral organ weight and blood characteristics in broiler chickens. Y. Huang*, J. S. Yoo1, Y. J. Chen1, J. H. Cho1, J. D. Kim1, J. D. Hancock1 and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 3CJ CheilJedang, Seoul, Korea, 2Korea University, Seoul, Korea, 3National Institute of Animal Science, Korea.


TH145  Effect of deoiled corn dried distillers grains with solubles, solvent extracted on nursery pig growth performance. J. Y. Jacela*, S. Dritz1, M. D. Tokach1, R. D. Goodband1, J. L. Nelssen1, R. C. Thaler1, D. Peters3, and D. E. Little1, 1Kansas State University, Manhattan, 2South Dakota State University, Brookings, 3DairyNet Inc., Brookings, SD.

TH146  Evaluation of distillers dried grains with solubles (DDGS) and Allzyme® SSF in grow-finish pigs. J. Pierce* and J. Bannerman, Alltech Inc., Nicholasville, KY.


TH149  Comparison of chromic oxide and acid insoluble ash as digestibility markers in the determination of apparent total tract digestibility in finishing pigs. V. D. Naranjo*, S. Powell, T. D. Bidner, and L. L. Southern, LSU Agricultural Center, Baton Rouge.

TH150  Effects of dried distillers grains and Gromega365™ on sow bratwurst quality. H. White*, K. Hesselbrock2, N. Augspurger2, J. Spencer2, A. Schinkel1, and M. Latour1, 1Purdue University, West Lafayette, IN, 2JBS United, Sheridan, IN.


TH152  L-Tryptophan dietary supplementation stimulated an earlier feed intake and reduced the physical activity of early weaned piglets. M. Anguita1, R. G. Hermes*, J. Gas1, D. Melchior2, and J. F. Pérez2, 1Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, 2Ajinomoto Eurolysine S.A.S., Paris, France.

TH153  Lysine restriction and realimentation affected growth, blood metabolites, and myostatin and leptin expressions in weaned pigs. Y. X. Yang1, J. Guo1, Z. Jin1, S. Y. Yoon1, J. Y. Choi1, M. H. Wang2, X. S. Piao2, S. J. Oh1, B. W. Kim1, and B. J. Chae1*, 1College of Animal Life Sciences, Changsh, 2National Key Lab of Animal Nutrition, China Agricultural University, Beijing, P. R. China.

TH154  Impaired translation initiation activation and reduced protein synthesis in weaned piglets fed a low-protein diet supplemented with essential amino acids. Y. Yin*, D. Deng, W. Chua1, K. Yao1, T. Li1, R. Huang1, Z. Liu1, and G. Wu1, 1The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 2Texas A&M University, College Station.

TH155  Effects of dietary protein level on intramuscular fat content and its fatty acid composition in lean and obese genotype finishing pigs. H-J. Xu1, Y-L. Liu1, W-T. Gu1, Y-L. Yin1, X-F. Kong1, R-L. Huang1, W-J. Tang1, and Z-Q. Liu1, 1The Chinese Academy of Sciences, Changsha, Hunan, P.R. China, 2West Anhui University, Luan, Anhui, China, 3Wuhan Hubei University, Wuhan, Hubei, China.

TH156  Dietary protein intakes affect expression of the cationic amino acid transporter-1 gene in the small intestine of finishing pigs. C. Y. Shi1, W. Y. Chu2, T. J. Li2, M. M. Geng1, R. L. Huang2, S-Y. Bin1, and Y-L. Yin1*, 1Guangxi Normal University, Guilin, Guangxi, China, 2The Chinese Academy of Sciences, Changsha, Hunan, P. R. China.

TH157  Molecular cloning, distribution and expression of the amino acid transporter y+LAT1 gene in tissues of young Tibet pigs. W. T. Gu1, W. Y. Chu1, W. C. Wang1, M. M. Geng1, T. J. Li1, Y. L. Yin1*, and G. Y. Wu1, 1The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 2Texas A&M University, College Station.
TH158 Molecular cloning, distribution and expression of the amino acid transporter b0,+ mRNAs in young Tibet pigs. W. Y. Chu1, W. C. Wang1, W. T. Gu1, M. M. Gen1, T. J. Li1, Y. L. Yin*, and G. Y. Wu1,2, 1The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 2Texas A&M University, College Station.


TH160 Ontogenetic development and nutritional regulation of amino acid transporter EAAC1 in intestine of swine. X. Wu1, C. Y. Xie2, Y. L. Yin*, L. Wang3, W. Y. Chu1, M. M. Geng1, T. J. Li1, R. L. Huang1, and Y. Q Hou3, 1The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 2Huazhong Agricultural University, Wu Han, China, 3Wuhan Polytechnic University, WuHan, Hubei, China.

Physiology and Endocrinology
Physiology of Heat Stress
Exhibit Hall CDE


TH162 Seasonal differences in gene expression in oocytes from Holstein cows in a subtropical environment as revealed by gene array analysis. P. J. Hansen*, M. Salem2, A. M. Brad1, J. Yao2, and G. W. Smith1, 1University of Florida, Gainesville, 2West Virginia University, Morgantown, 3Michigan State University, East Lansing.


TH165 Effects of elevated ambient temperature on length of gestation and ruminal temperature at parturition of beef cows. E. C. Wright*, M. J. Prado-Cooper, C. L. Bailey, and R. P. Wettemann, Oklahoma Agricultural Experiment Station, Stillwater, OK.

Physiology and Endocrinology
Poultry and Swine Physiology
Exhibit Hall CDE


TH167 Detection of microRNA in porcine somatic and reproductive tissues. S. L. Pratt*, E. Curry, and H. M. Barton, Clemson University, Clemson, SC.

TH168 Endocrine regulation of colostrum production in primiparous sows. A. Foisnet1, C. Farmer2, M. Etienne1, J. Le Dividich1, and H. Queznel1, 1INRA, Saint Gilles, France, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

TH169 Maintenance of pregnancy with Matrix® in PGF2α-treated sows. C. E. Ferguson*, M. C. Poole, D. M. Gandy, and F. M. LeMieux, McNeese State University, Lake Charles, LA.

TH170 Defined pattern of Sertoli cell differentiation in pubertal porcine testes. J. J. Ford* and T. H. Wise, USDA/ARS/USMARC, Clay Center, NE.

TH171 Comparison of domestic and feral pig physiology, immunity and growth. B. L. Davis*1,2, M. A. Sutherland1,2, P. J. Bryer1,2, J. F. Smith1,2, and J. J. McGlone1,2, 1Pork Industry Institute, Lubbock, TX, 2Texas Tech University, Lubbock.


TH176 Effects of dietary fats differing in n-3/n-6 ratio on oocyte quality in dairy cows. M. Zachut*, I. Dekel1, H. Lehrer1, A. Arieli2, and U. Moallem3, Faculty of Agriculture, Hebrew University, Rehovot, Israel.

TH177 Effects of preincubation of sperm at 38.5 or 40°C before insemination on developmental competence of bovine embryos derived from in vitro fertilization. K. E. M. Hendricks* and P. J. Hansen, University of Florida, Gainesville.


TH182 Insulin-like growth factor-1 reduces the anti-development effects of menadione on development of bovine preimplantation embryos. J. I. Moss* and P. J. Hansen, University of Florida, Gainesville.

TH183 Effect of the addition of hyaluronan to bovine embryo culture on in vitro survival after cryopreservation and in vivo survival following transfer to recipients. L. Bonilla*, J. Block1,2, and P. J. Hansen, University of Florida, Gainesville, Embogen LLC, Gainesville, FL.


TH186 Nursery performance in gilts farrowed by females housed in individual stalls and/or group pens during gestation. M. J. Estienne* and A. F. Harper, Virginia Polytechnic Institute and State University, Blacksburg.


Effect of the origin, month born, and shipment group on growth of Holstein heifers at a raising facility. J. Wohlt*, C. Jin, and J. Ferguson*, Rutgers University, New Brunswick, NJ, University of Pennsylvania, Kennett Square.

The association of mortality and 60 day culling rates with housing, feeding and pasture systems. C. D. Dechow* and R. C. Goodling*, Penn State University, University Park, Pennsylvania State Cooperative Extension, University Park.

How winter conditions affect feed intake of steers in different housing systems. H. Koknaroglu*, Z. Otles*, T. Mader*, T. Purejav*, and P. Hoffman*, Saleman Demirel University, Department of Animal Science, Isparta, Turkey, 2 Frontier Science and Technology Research Foundation, Madison, WI, 1 University of Nebraska, Lincoln, 3 Iowa State University, Ames.


Influence of horn flies on the behavior of beef cattle. H. T. Boland* and G. Scaglia*, Virginia Tech, Blacksburg, 1 Virginia Research Station, LSU Agricultural Center, Iberia, LA.

Description of factors influencing reticular temperatures in lactating dairy cows. J. M. Bewley*, M. E. Einstein, M. W. Grott, and M. M. Schutz, Purdue University, West Lafayette, IN.

Relationship of temperament and growth in the suckling beef calf. K. J. Matheney*, J. P. Banta, D. A. Neuendorff, T. H. Welsh Jr., R. C. Vann, and R. D. Randel, Texas AgriLife Research and Extension, Overton, Texas AgriLife Research, College Station, Mississippi State University, Raymond.

Ocular thermography as a measure of body temperature in beef cattle: Influences of environmental factors. S. M. Dray*, R. C. Vann, A. B. Chromiak1, J. K. Lyons3, T. H. Welsh Jr, R. D. Randle1, and S. T. Willard1, *MAFES, Mississippi State University, Mississippi State, **MAFES, Mississippi State University, Raymond, †Texas A&M System, College Station, ‡Texas AgriLife Research and Extension Center, Texas A&M System, Overton.

Forced-traffic in automatic milking systems effectively reduces the need to fetch cows but alters eating behavior of dairy cattle. A. Bach*1,2, M. Devant, and A. Ferrer, *ICREA, Barcelona, Spain, †IRTA-Unidad de Remugants, Barcelona, Spain.

**Ruminant Nutrition**

**Fats and Carbohydrates – Beef, Sheep, Miscellaneous Ruminants**

Exhibit Hall CDE

Effect of physical particle size on ruminal and post-ruminal disappearance of nutrients of a mixed concentrate in Holstein steers. H. H. Jahani-Azizabadi1, M. Danesh Mesgaran*, and A. Rahmatimanesh2, *Ferdowsi University of Mashhad, Mashhad, Iran, †Heram Talaee Sharq Feed Mill Company, Nishabour, Iran.


Effects of replacing barley with corn grain in finishing diets on blood and rumen metabolites of Holstein male calves. F. Fatehi, K. Reza-Yazdi, M. A. Alai, and R. Babu*, †University of Southern Illinois University, Carbondale, ‡Egyptian National Research Center, Cairo, Egypt.

Effect of Bacillus cereus var. toyoi supplementation on performance, metabolism, and histological morphology of the digestive tract in young Holstein bulls fed a high-concentrate diet. S. Marti1, A. Bach1,2, and M. Devant*, †Animal Nutrition, Management, and Welfare Group, IRTA-Unidad de Remugants, Barcelona, Spain, ‡ICREA, Barcelona, Spain.

Blood cell profiles and plasma concentrations of glucose and cortisol of Nellore steers and bulls selected for low and high residual feed intake before and following a mild stressor. R. C. Gomes*, M. A. Ballou2, R. F. Siqueira, T. R. Stell1, J. A. Negro1, R. D. Sainz2, and P. R. Leme1, *University of São Paulo, Pirassununga, Brazil, †Texas Tech University, Lubbock, ‡University of California, Davis.

Nutritional assessment of banana (Musa paradisiaca) leaves and pseudostems for ruminants. E. González-García*, O. Cáceres1, H. Archiméde1, J. Arece1, H. Santana1, and R. Delgado1, *Estación Experimental de Pastos y Forrajes 'Indio Hatuey', Matanzas, Cuba, †INRA UR143 Unité de Recherches Zootéchniques (URZ), Guadeloupe (French West Indies).

The effect of replacing corn with glycerol on rumen fermentation and fiber digestibility. A. A. AbuGhazaleh1, S. Abo El-Nor2, and R. Babu*, †Southern Illinois University, Carbondale, ‡Egyptian National Research Center, Cairo, Egypt.

Effects of replacing barley with corn grain in finishing diets on blood and rumen metabolites of Holstein male calves. F. Fatehi, K. Reza-Yazdi, M. Dehghan-Banakady1, M. Moradi-Shahrbabak, and H. Bahrami, Tehran University, Karaj, Tehran, Iran.

Nutritional and growth patterns of Nellore bulls, steers and heifers, fed diets containing two concentrate allowance levels. P. V. R. Paulino*, S. de C. Valadares Filho1, M. A. Fonseca1, M. I. Marcondes1, E. Detmann1, N. K. de P. Souza1, and R. D. Sainz1, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, †University of California, Davis.


Effect of substitution barley grain with dried sugar beet pulp on venous blood gas of Holstein steers. M. Mojtahedi, M. Danesh Mesgaran*, A. Heravi Moussavi, and A. Tahmasebi, Ferdowsi University of Mashhad, Mashhad, Iran.

Ruminal, fecal and urine pH of Holstein steers fed diets containing barley grain and(or) sugar beet pulp. M. Mojtahedi, M. Danesh Mesgaran*, A. Heravi Moussavi, and A. Tahmasebi, Ferdowsi University of Mashhad, Mashhad, Iran.

Feedlot performance, carcass traits and meat tenderness of Bos indicus type bullock fed high concentrate diets. T. de O. Cucki1, M. D. B. Arrigon1, C. L. Martins1, L. A. L. Chardal1, A. C. Silveira1, H. N. de Oliveira1, R. da C. Cervieri1, D. D. Miller1, R. D. L. Pacheco*, S. R. Baldwin, J. P. S. T. Bastos1, T. M. Mariani1, L. M. N. Sarti1, R. S. Barducci1, T. C. B. de Silva1, *FMVZ/Unesp, Botucatu, São Paulo, Brazil, †Faculdade de Zootecnia/ Unesp, Dracena, São Paulo, Brazil.

Frothy bloat-related shifts in the ruminal bacterial population in steers fed Bermuda grass hay and grazing wheat forage. W. E. Pinchak*, B. R. Min1, C. Hernandez2, and M. E. Hume2, †Texas AgriLife Research, Vernon, TX, ‡USDA-ARS, Southern Plains Agricultural Research Center, Food and Feed Safety Research Unit, College Station, TX, †Ichthus Education Center, La Trinitaria, Chiapas, Mexico.
TH224 Beef heifers performance fed with different forage sources. G. R. Siqueira1, R. A. Reis*1,4, R. P. Schocken-Iturrino1,4, F. Dutra de Resende2, T. T. Berchielli1,4, M. de Toledo Piza Roth1,4, and A. P. de Toledo Piza Roth1,4, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2University of Wisconsin, Madison, WI, 3Apta Regional de Coimbra, Coimbra, Portugal, 4Fundação de Amparo Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil, 5Conselho Nacional de Desenvolvimento Científico e Tecnológico, Brasilia, Distrito Federal, Brazil.

TH225 Effects of hay restriction with additional co-product supplementation on cow and calf performance and hay disappearance during a winter feeding program. A. Brauch*, J. Sexton, B. Wiegand, M. Kerley, D. Wilson, D. Mallory, H. Smith, M. Ellersieck, and J. Williams, University of Missouri, Columbia.


TH227 Feeding behavior of feedlot cattle from different breed types fed high concentrate diets with different NDF levels. L. M. N. Sarti1, R. D. L. Pacheco1, S. A. Matsuura1, M. Parrili1, M. V. Fossa1, J. P. S. T. Bastos1, T. M. Mariani1, R. S. Barducci1, T. C. B. da Silva1, L. F. S. Niero1, S. R. Balbin1, H. N. de Oliveira1, FMYZ/UNESP, Botucatu, São Paulo, Brazil, 2Faculdade de Zootecnia/UNESP, Dracena, São Paulo, Brazil, 3Apoyo FAPESP.


TH229 Supplementation programs for wheat straw-based wintering cow programs. K. M. Wood*, I. B. Mandell, and K. C. Swanson, University of Guelph, Guelph, ON, Canada.

TH230 Effect of n-3 PUFA supplementation on embryo recovery rate, quality and gene expression in beef heifers. S. Childs*1,2, F. Carter2, C. O. Lynch1,2, 1Teagasc Production Research Centre, Athenry, Co. Galway, Ireland, 2University College Dublin, Belfield, Dublin, Ireland, 3Teagasc Food Research Centre, Moorepark, Fermoy, Co. Cork, Ireland.

TH231 Qualitative aspects of the carcass and meat of Nellore cattle fed diet with different levels of fat. J. Duarte Messana*, T. T. Berchielli1,4, R. P. Schocken-Iturrino1,4, F. Dutra de Resende2, T. M. Mariani1, R. S. Barducci1, T. C. B. da Silva1, L. F. S. Niero1, S. R. Balbin1, H. N. de Oliveira1, FMYZ/UNESP, Botucatu, São Paulo, Brazil, 2Faculdade de Zootecnia/UNESP, Dracena, São Paulo, Brazil, 3Apoyo FAPESP.

TH232 Beef heifers performance fed with different forage sources. G. R. Siqueira1, R. A. Reis*1,4, R. P. Schocken-Iturrino1,4, F. Dutra de Resende2, T. T. Berchielli1,4, M. de Toledo Piza Roth1,4, and A. P. de Toledo Piza Roth1,4, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2University of Wisconsin, Madison, WI, 3Apta Regional de Coimbra, Coimbra, Portugal, 4Fundação de Amparo Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil, 5Conselho Nacional de Desenvolvimento Científico e Tecnológico, Brasilia, Distrito Federal, Brazil.


TH227 Feeding behavior of feedlot cattle from different breed types fed high concentrate diets with different NDF levels. L. M. N. Sarti1, R. D. L. Pacheco1, S. A. Matsuura1, M. Parrili1, M. V. Fossa1, J. P. S. T. Bastos1, T. M. Mariani1, R. S. Barducci1, T. C. B. da Silva1, L. F. S. Niero1, S. R. Balbin1, H. N. de Oliveira1, FMYZ/UNESP, Botucatu, São Paulo, Brazil, 2Faculdade de Zootecnia/UNESP, Dracena, São Paulo, Brazil, 3Apoyo FAPESP.


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TH232 Effects of glycerin supplementation on performance and meat quality of young Holstein bulls fed high-concentrate diets. N. Mach*, A. Bach1,2, and M. Devant1, 1Animal Nutrition, Management, and Welfare Group, IRTA-Unitat de Remugants, Barcelona, Spain, 2ICREA, Barcelona, Spain.

Ruminant Nutrition
Minerals and Vitamins – Dairy
Exhibit Hall CDE


TH234 Effects of different rates of abomasal infusion of nicotinic acid on plasma NEFA concentrations in feed-restricted Holstein cows. J. B. Pescara*, J. A. A. Hennessy3, and D. A. Kenny2, 1Teagasc Production Research Centre, Athenry, Co. Galway, Ireland, 2University College Dublin, Belfield, Dublin, Ireland, 3University of Limerick, Limerick, Ireland.


TH237 Bone development in dairy heifers fed diets with and without supplemental phosphorus. N. M. Esser*, P. C. Hoffman1, W. K. Coblenz2, M. W. Orth1, and K. A. Weigel1, 1University of Wisconsin, Madison, 2US Dairy Forage Research Center, Marshfield, WI, 3Michigan State University, East Lansing.

TH238 Dairy cows might discriminate between vitamin D3 and vitamin D2 in the gastro intestinal tract. L. Hymoeller*, S. K. Jensen2, and M. O. Nielsen1, 1University of Copenhagen, Groenegaardsvej, Frederiksborg C, 2University of Aarhus, Blichers Allé, Tjele, Denmark

TH239 Effects of supplements of folic acid, vitamin B12, and rumen-protected methionine on whole body kinetics of glucose and methionine (Met) in lactating dairy cows. A. Preynat*, H. Lapierre1, C. Thivierge1, M. F. Palin1, J. J. Matte1, A. Desrochers1, and C. L. Girard1, 1Universite Laval, Quebec, QC, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Universite de Montreal, St-Hyacinthe, QC, Canada.

TH240 Effect of organic trace mineral (4-Plex®) supplementation on dry matter intake, milk production, health events, and body weight in dairy cows. K. S. Hackbart*, R. M. Ferreria1, M. T. Socha2, R. D. Shaver1, M. C. Wiltbank1, and P. M. Fricke1, 1University of Wisconsin, Madison, 2Zinpro Corp., Eden Prairie, MN.
Non-acid-base factors partly responsible for increased urinary calcium excretion when anionic salts are fed. L. Irvine1, M. Freeman1, D. J. Donaghy1, and J. R. Roche1,2,1University of Tasmania, Burnie, Australia, 2DairyNZ, Hamilton, New Zealand.

Influence of a high potassium diet on the excretion of minerals after calving. M. Rérat1, A. Philipp1,2, H. D. Hess1, F. Dohme1, and A. Liesegang2, Agroscope Liebefeld-Posieux Research Station ALP, Postieux, Switzerland, 2University Zürich, Zürich, Switzerland.

Effect of selenium yeast on selenium status, thyroid hormone concentrations and passive transfer of immunoglobulins in dairy cows and calves. K. M. Koenig* and K. A. Beauchemin, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.

Plasma concentration of nicotinic acid and derivatives in response to abomasal infusions of nicotinic acid. J. A. A. Pires*1, C. L. Girard2, and R. R. Grummer1, University of Wisconsin, Madison, Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Lennoxville, QC, Canada.

Carry-over effects of iodine and selenium supplements in lactating dairy cows. M. Battaglia, M. Moschini, G. Piva*, and F. Masoero, Università Cattolica del Sacro Cuore, Piacenza, Italy.


Ruminant Nutrition
Proteins and Amino Acids – Dairy
Exhibit Hall CDE

Influence of concentrate and protein levels on milk production by Holstein cows. R. P. Lana1,2, G. F. Sobreira1, M. I. Leão1, J. A. Freitas1, D. C. Abreu1, W. C. Lopes1, and G. Guimarães1, Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2CNPq, Brasilia, DF, Brazil, 3Universidade Federal do Paraná, Palotina, PR, Brazil.

Blood and ruminal metabolites of early lactating Iranian Holstein cows fed raw or roasted whole soybean. M. H. Fathi Nasri*1, M. Daneshfl.

Effect of selenium yeast on selenium status, thyroid hormone concentrations and passive transfer of immunoglobulins in dairy cows and calves. K. M. Koenig* and K. A. Beauchemin, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.

Increasing methionine, lysine or both does not increase milk protein percent in either high producing or low producing dairy cows. H. F. Bucholtz*1, J. S. Liesman1, P. N. Naaz2, M. J. Stevenson1, W. H. Heimbeck1, and R. A. Patton1, Michigan State University, East Lansing, Upper Peninsula Experiment Station, Chatham, MI, 2Evonik-Degussa AG, Hanau, Germany, 3Nittany Dairy Nutrition, Mifflinburg, PA.

Nitrogen balance and excretion from grazing lactating cows supplemented with conjugated linoleic acid (CLA). D. E. de Oliveira1, S. R. de Medeiros1, and D. P. D. Lanna1, Centro de Educação Superior do Oeste, Universidade Estadual de Santa Catarina/CEO, Chapecó, Santa Catarina, Brasil, 2Centro Nacional de Pesquisa de Gado de Corte, Campo Grande, Mato Grosso do Sul, Brasil, 3Universidade de São Paulo/ESALQ, Piracicaba, São Paulo, Brasil.

Response in feed intake, blood metabolites, and milk production to varying ruminal protein undegradability in early lactation Holstein cows. M. Jahani-Moghadam1, H. Amanlou2, and A. Nikkhah*1,2,3, Islamic Azad University, Karaj, Iran, 2Zanjan University, Zanjan, Iran, 3University of Illinois, Urbana.

Effect of rumen degraded and rumen undegraded protein on microbial protein synthesis in mid-lactation cows. S. K. Ivan-Dinh*1, R. L. Baldwin, VF, and R. A. Kohn1, University of Maryland, College Park, 1USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD.

Nitrogen balance and excretion from grazing lactating cows supplemented with conjugated linoleic acid (CLA). D. E. de Oliveira1, S. R. de Medeiros1, and D. P. D. Lanna1, Centro de Educação Superior do Oeste, Universidade Estadual de Santa Catarina/CEO, Chapecó, Santa Catarina, Brasil, 2Centro Nacional de Pesquisa de Gado de Corte, Campo Grande, Mato Grosso do Sul, Brasil, 3Universidade de São Paulo/ESALQ, Piracicaba, São Paulo, Brasil.


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Effect of abomasal glucose infusion on splanchnic amino acid metabolism in freshening dairy cows. M. Larsen* and N. B. Kristensen, University of Aarhus, Tjele, Denmark.

The performance of calves fed a milk replacer containing wheat protein. A. B. Chestnut* and D. L. Carr, Vigortone Ag Products, Hiawatha, IA.


TH262  Response of lactating cows to the partial replacement of soybean meal by Optigen® II or urea. J. F. dos Santos1, M. N. Pereira1, G. S. Dias Júnior1, L. L. Bitencourt1, N. M. Lopes1, S. Síecola Júnior1, and J. R. R. Silva2, Universidade Federal de Lavras, Lavras, MG, Brazil, Centro Federal de Educação Tecnológica, Januária, MG, Brazil.


TH265  Digestibility of corn distillers protein treated with glutamic acid fermentation solubles or not and exposed to heat damage. P. Summer*, A. McLeod2, G. A. Harrison1, L. M. Clark2, M. D. Meyer1, R. Garcia-Gonzalez1, and K. A. Dawson1, Alltech Inc., Nicholasville, KY, University of Kentucky, Lexington, Global Dairy Consultancy Co. Ltd., Holderness, NH.


TH268  Do feedstuffs contain a constant protein fraction that is both undegradable in the rumen and indigestible in the small intestine? S. E. Boucher1, C. M. Parsons2, and C. G. Schwab1, University of New Hampshire, Durham, University of Illinois, Urbana.

TH269  Effects of 2-hydroxy 4-(methylthio) butanoic acid isopropyl ester (HMBi) on the organic matter digestibility (OMD) and energy value of corn dried distillers grains with solubles (DDGS). E. Devillard*, L. Ducrocq, C. Richard, and P. A. Geraert, Adisseo, Commentry, France.

TH270  Effects of feeding a controlled rumen release urea on productivity of Holstein cows. A. Highstreet*, J. Robison1, P. H. Robinson2, and J. G. Garrett3, California State University, Fresno, University of California, Davis, Balchem Encapsulates, New Hampton, NY.

TH271  In vitro ruminal protein degradation and microbial protein formation of seed legumes. S. Colombini1 and G. A. Broderick2*, University of Milan, Milano, Italy, US Dairy Forage Research Center, Madison, WI.

TH272  In situ ruminal degradation of nitrogen fractions of cottonseed and canola meals. T. Tashakkori, M. Danesh Mesgaran*, A. R. Heravi Mousavi, and H. Nasri Moghaddam, Ferdowsi University of Mashhad, Mashhad, Iran.

Small Ruminant Sheep
Exhibit Hall CDE

TH273  Influence of production traits on the sheep enterprise profitability: A modeling approach. V. Demers Caron*, D. Pellerin1, and F. W. Castonguay1, 2, Université Laval, Québec, Canada, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada.


TH277  Comparative reproduction characterization among four crossbred groups of hair sheep: Prolificacy. W. R. Getz*, S. Mobini, and S. Gelaye, Fort Valley State University, Fort Valley, GA.

TH279 Retention of sperm motility, viability and fertility in ram semen after liquid storage at 4°C for up to 96 hours. J. L. Mook, J. R. Collins, and S. Wildeus, Virginia State University, Petersburg.

TH280 Meat characteristics of crossbred lambs fed normal or heated whole cottonseed. R. R. P. S. Corte, P. R. Leme, G. Aferri, A. S. C. Pereira, and J. C. C. Balieiro, Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, SP, Brazil.

TH281 Fatty acid composition of meat from crossbred lambs fed normal or heated whole cottonseed. R. R. P. S. Corte, P. R. Leme, A. S. C. Pereira, G. Aferri, and J. C. C. Balieiro, Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, SP, Brazil.

TH282 Effects of added protein and dietary fat on lamb performance and carcass characteristics when fed differing levels of dried distiller’s grains with solubles. M. L. Van Emon, A. F. Musselman, P. J. Gunn, M. K. Neary, R. P. Lemenager, and S. L. Lake, Purdue University, West Lafayette, IN.


TH284 Dried distillers grains as a supplement for grazing ewe lambs. I. Susin, D. D. Clevenger, G. D. Lowe, P. A. Tirabasso, and S. C. Loerch, Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, SP, Brazil, The Ohio State University, Wooster.


TH286 Effects of barley straw treated with different levels of urea and elemental sulfur in diets of late gestation ewes. K. RezaYazdi, H. Khalilvandi, and N. Vahdani, University of Tehran, Karaj, Tehran, Iran.

TH287 Effects of urea treated barely straw and inorganic sulfur inclusion on in vitro digestibility of TMR and performance of fattening Varanini lambs. K. RezaYazdi, N. Vahdani, and H. Khalilvandi, University of Tehran, Karaj, Tehran, Iran.


TH292 Apparent digestibility and ruminal parameters of diets containing sugarcane silage with or without additives or fresh sugarcane fed to lambs. R. C. Amaral, A. V. Pires, I. Susin, C. Q. Mendes, E. M. Ferreira, R. S. Gentil, M. V. Biehl, M. A. A. Queiroz, and G. H. Rodrigues, Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, SP, Brazil.


OTHER EVENTS
ADSA Business Meeting
206
9:30 AM – 10:00 AM

ASAS Business Meeting
203
9:30 AM – 10:30 AM

SYMPOSIA AND ORAL SESSIONS
Dairy Foods Dairy Products and Processing II
Chair: Kayanush Aryana, Louisiana State University
121


10:30 AM 510 Performance comparison of ceramic and polymeric microfiltration (MF) membranes for separation of casein and serum protein (SP) from skim milk at 50°C. J. Zulewska*, M. W. Newbold2, and D. M. Barbano3, 1University of Warmia and Mazury, Olsztyn, Poland, 2Cornell University, Ithaca, NY.

10:45 AM 511 Functional properties of whey proteins affected by heat and high pressure shearing. M. Dissanayake and T. Vasiljevic*, Victoria University, Melbourne, VIC, Australia.

11:00 AM 512 Production of whey protein concentrate 80 with improved clarity and flavor. I. Jarto*, J. A. Lucey1, S. Damodaran1, S. A. Rankin1, and K. E. Smith2, 1University of Wisconsin, Madison, 2Wisconsin Center for Dairy Research, Madison, WI.

11:15 AM 513 Production of structured lipids containing palmitic acid for infant milk formulation and characterization of their oxidative stability. C. O. Maduko1, C. C. Akoh1, R. R. Eitenmiller1, and Y. W. Park*, 1University of Georgia, Athens, 2Fort Valley State University, Fort Valley, GA.

11:30 AM 514 The impact of fat globules' colloidal stability on the pre-gelation stages of rennet coagulation process. Z. Gaygadzhiev*, M. Alexander, A. Hill, and M. Corredig, University of Guelph, Guelph, ON, Canada.

11:45 AM 515 Impact of changing temperature after measurable gelation on the properties of fermented milk gels. Y. Peng*, D. S. Horne2, and J. A. Lucey1, 1University of Wisconsin, Madison, 2Formerly of Hannah Research Institute, Ayr, Scotland.

12:00 PM 516 Rheological properties of stirred yoghurts made with whey protein isolate-pectin complexes as stabilizing agent. M.-C. Gentès*, S. L. Turgeon1, and D. St-Gelais1, STELA Dairy Research Centre and Institute of Nutraceuticals and Functional Foods (INAF), Quebec, QC, Canada, 2Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint-Hyacinthe, QC, Canada.

12:15 PM 517 Changes in relative percentages of fatty acids in raw goat milk, its yoghurt and salted yoghurt during manufacture. Z. Guler*, and Y. W. Park2, 1Mustafa Kemal University, Antakya, Hatay, Turkey, 2Fort Valley State University, Fort Valley, GA.

SYMPOSIUM
The DC Connection: Science Policy, Research Support, and the Professional Animal Scientist
Chair: Jerry Baker, Executive Director, Sigma Xi
Sponsors: Federation of Animal Science Societies (FASS) and Monsanto Company
Sagamore Ballroom 7

This session will help you discover the impacts of the federal budget proposals on major R&D agencies, examine historical R&D trends and their impact on US science and engineering, and discuss the political outlook for R&D in the appropriations process.

10:30 AM Introduction. Dr. Jerry Baker, Sigma Xi.

10:40 AM An insider: Serving on the personal staff of a member of Congress. Dr. Christy Oliver, 2007-2008 FASS Congressional Science Fellow.

11:20 AM  Federal support for research in the 2009 budget. Mr. Kei Koizumi, Director R&D Budget and Policy Program Directorate for Science and Policy Programs at AAAS.

11:50 AM  Telling the research funding story to someone that matters. Dr. Ashley B. Peterson, Director Legislative Affairs, American Meat Institute.

12:20 PM  Questions and wrap-up. Dr. Jerry Baker, Sigma Xi.

SYMPOSIUM
Animal Behavior and Well-Being
Animal Welfare Standards – Who Decides and How?
Chair: Anna Butters-Johnson, Iowa State University
101–102

10:30 AM  Welcome


11:55 AM  520 Pressures to regulate animal welfare and food production in the USA. K. Johnson*, Animal Agriculture Alliance, Arlington, VA.

12:35 PM  Concluding thoughts

Breeding and Genetics
Computational Issues in Genomic Analysis
Chair: Dorian Garrick, Iowa State University
109–110


10:45 AM  522 Effects of allele frequency estimation on genomic predictions and inbreeding coefficients. P. M. VanRaden1, M. E. Tooker*,1 and N. Gengler1,2, 1USDA Animal Improvement Programs Laboratory, Beltsville, MD, 2Gembloux Agricultural University, Gembloux, Belgium.

11:00 AM  523 Strategies to incorporate genomic prediction into population-wide genetic evaluations. N. Gengler1,2,3 and P. M. VanRaden1, 1Gembloux Agricultural University, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium, 3USDA Animal Improvement Programs Laboratory, Beltsville, MD.

11:15 AM  524 Selection of single nucleotide polymorphisms and genotype quality for genomic prediction of genetic merit in dairy cattle. G. R. Wiggans*, T. S. Sonstegard2, P. M. VanRaden1, L. K. Matukumalli1,2,3, R. D. Schnabel1, J. F. Taylor1, F. S. Schenkel1, and C. P. Van Tassell1, 1ARS, USDA, Beltsville, MD, 2George Mason University, Manassas, VA, 3University of Missouri, Columbia, 4University of Guelph, Guelph, ON, Canada.


11:45 AM  526 Statistical design of validation studies for transcriptional profiling experiments. J. P. Steibel*, R. J. Tempelman1, and G. J. M. Rosa2, 1Michigan State University, East Lansing, 2University of Wisconsin, Madison.

12:00 PM  527 Model selection in gene-specific mixed linear models for microarray data with application to joint analysis of multiple experiments. L. Qu, N. Bacciu*, D. Nettleton, and J. C. M. Dekkers, Iowa State University, Ames.

12:15 PM  528 Reconstruction of metabolic pathways for the cattle genome. S. Seo* and H. A. Lewin, Institute for Genomic Biology, University of Illinois, Urbana.
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<th>Time</th>
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<tr>
<td>11:00 AM</td>
<td>531</td>
<td>Heritability of longevity in Yorkshire females.</td>
<td>M. D. Hoge* and R. O. Bates, Western Illinois University, Macomb, Michigan State University, East Lansing.</td>
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<tr>
<td>12:00 PM</td>
<td>535</td>
<td>Genetic parameters for longitudinal feed intake and weight gain in Durocs.</td>
<td>C. Y. Chen*, I. Misztal, S. Tsuruta, W. O. Herring, T. Long, M. Culbertson, University of Georgia, Athens, Smithfield Premium Genetics Group, Rose Hill, NC.</td>
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<tr>
<td>10:30 AM</td>
<td>537</td>
<td>ADSA Pioneer: White cheese development.</td>
<td>R. Richter, Texas A&amp;M University, College Station.</td>
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<tr>
<td>11:00 AM</td>
<td>538</td>
<td>Impact of the type of milk protein used to prepare starter media on properties of Mozzarella cheese.</td>
<td>S. Govindasamy-Lucey*, B. Dosti, J. Jaeggi, M. Johnson, and J. Lucey, University of Wisconsin, Madison.</td>
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<td>11:30 AM</td>
<td>540</td>
<td>Effect of brine composition on cheese physical properties in Ragusano cheese.</td>
<td>N. Fucà*, L. Tuminello, S. La Terra, M. Caccamo, M. Manenti, G. Licitra, and D. J. McMahon, D.A.C.P.A., Catania University, Catania, Italy, Regione Siciliana, Ragusa, Italy, Utah State University, Logan.</td>
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<tr>
<td>11:45 AM</td>
<td>541</td>
<td>Studies on various paneer based spreads.</td>
<td>H. A. Kumar and H. G. R. Rao, Dairy Science College, KVAFSU, Hebbal, Bangalore, Karnataka, India.</td>
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### Food Safety

**Centennial Presentations**

**Chair:** Todd Callaway, USDA-ARS Southern Plains Agricultural Research Center

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<tr>
<td>10:30 AM</td>
<td>542</td>
<td><strong>ASAS Centennial Presentation:</strong> Developments and future outlook for preharvest food safety.</td>
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<td>S. P. Oliver*, D. A. Patel¹, T. R. Callaway², and M. E. Torrence¹, ¹The University of Tennessee,</td>
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<td>Knoxville, ²USDA/ARS Southern Plains Agricultural Research Center, College Station, TX, ³National</td>
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<td>Program Leader, Food Safety, USDA/ARS, Beltsville, MD.</td>
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<tr>
<td>11:15 AM</td>
<td>543</td>
<td><strong>ASAS Centennial Presentation:</strong> Developments and future outlook for postharvest food safety.</td>
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<td>J. Sofos*, Colorado State University.</td>
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### Forages and Pastures

**Centennial Presentations**

**Chair:** Ted McCollum, Texas AgriLife Extension

**Sponsor:** Mycogen

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<tr>
<td>10:30 AM</td>
<td>544</td>
<td><strong>ASAS Centennial Presentation:</strong> Historical perspective on the advances in forage research.</td>
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<td>J. Burns*¹, ²USDA-ARS, Raleigh, NC, ³North Carolina State University, Raleigh.</td>
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<td>11:00 AM</td>
<td>545</td>
<td><strong>ASAS Centennial Presentation:</strong> Research and extension needs in forage utilization in the</td>
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<tr>
<td></td>
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<td>future. F. M. Rouquette Jr.*, ¹L. A. Redmon¹, G. E. Aikin¹, G. M. Hill³, L. E. Sollenberger¹,</td>
</tr>
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<td></td>
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<td>and J. Andrae¹, ¹Texas AgriLife Research, Texas A&amp;M System, Overton, TX, ³Texas AgriLife</td>
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<td></td>
<td>Extension Service, Texas A&amp;M System, College Station, TX, ²USDA-ARS Forage Animal Production</td>
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<td>Research Unit, Lexington, KY, ¹University of Georgia, Tifton, ³University Florida, Gainesville,</td>
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<td></td>
<td></td>
<td>²Clemson University, Clemson, SC.</td>
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### Horse Species III

**Chair:** Jason Turner, New Mexico State University

**Sagamore Ballroom 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Number</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>546</td>
<td><strong>ASAS Centennial Presentation:</strong> History and future outlook of equine science teaching programs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. H. Wood*, University of Kentucky, Lexington.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>547</td>
<td>Effect of ad libitum concentrate feeding on cribbing behavior in horses. T. R. Fenn*, C. A.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>McCall¹, C. E. Eckert¹, W. H. Brown¹, and W. H. McElhenney², ¹Auburn University, Auburn, AL,</td>
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<tr>
<td></td>
<td></td>
<td>²Tuskegee University, Tuskegee, AL.</td>
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<tr>
<td>11:30 AM</td>
<td>548</td>
<td>Epidemiologic and economic study of Hyperelastosis Cutis/HERDA in the quarter horse cutting</td>
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<td></td>
<td></td>
<td>industry. S. G. Tipton*, J. D. Anderson¹, T. S. Smith¹, N. J. Winand¹, P. R. Ryan¹, R. L.</td>
</tr>
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<td></td>
<td>Linford¹, and A. M. Rashmir¹, ¹Mississippi State University, Mississippi State, ²Cornell</td>
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<td></td>
<td></td>
<td>University, Ithaca, NY.</td>
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<tr>
<td>11:45 AM</td>
<td>549</td>
<td>Gastric ulcer incidence rate and relationship to other parameters in 40 Standardbred racehorses.</td>
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<td></td>
<td></td>
<td>R. E. Cate*, B. D. Nielsen, C. I. O’Connor-Robison, H. S. Spooner, J. L. Feldpausch, and H. C.</td>
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<td>Schott II, Michigan State University, East Lansing.</td>
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<tr>
<td>12:00 PM</td>
<td>550</td>
<td>Use of slow-release urea to facilitate composting of horse manure. S. C. Dilling* and L. K.</td>
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<td>Warren, University of Florida, Gainesville.</td>
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<td>Robison-O’Connor, and J. M. Witherspoon, Michigan State University, East Lansing.</td>
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</table>

### Lactation Biology III

**Chair:** Steve Davis, ViaLactia Biosciences (NZ) Ltd.

**Sagamore Ballroom 6**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Number</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>10:30 AM</td>
<td>552</td>
<td><strong>ASAS Centennial Presentation:</strong> Historical perspective on lactation biology. R. S. Kensinger*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oklahoma State University, Stillwater.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>553</td>
<td><strong>ASAS Centennial Presentation:</strong> Lactation biology for the 21st century. J. J. Loor*¹ and W.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cohick², ¹University of Illinois, Urbana, ²Rutgers, The State University of New Jersey, New</td>
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<td>Brunswick.</td>
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</tbody>
</table>
12:00 PM 554 | The persistent milk yield response to frequent milking during early lactation is associated with persistent changes in mammary gene expression. E. H. Wall*, J. P. Bond, and T. B. McFadden, University of Vermont, Burlington.


**SYMPOSIUM**

**Meat Science and Muscle Biology**

**Postmortem Changes in Myofibrillar Protein and the Associated Contribution to Meat Quality**

Chair: Giuseppe Bee, Agroscope Liebefeld-Posieux, ALP

Sponsor: European Association of Animal Production

Sagamore Ballroom 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>10:30 AM</td>
<td>Historical perspective of postmortem changes in myofibrillar proteins and their relationship to meat quality. F. C. Parrish*, Iowa State University, Ames.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Relationship of postmortem changes in myofibrillar protein to meat quality. E. Huff-Lonergan* and S. Lonergan, Iowa State University, Ames.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>New methods to investigate changes in meat and myofibrillar proteins. E. Veiseth*, Matforsk, Ås, Norway.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Post harvest processes that influence myofibrillar protein degradation and meat quality. M. N. Lund1, R. Lametsch*, M. S. Hvid2, and L. H. Skibsted1, 1University of Copenhagen, Frederiksberg, Denmark; 2Danish Meat Research Institute, Roskilde, Denmark.</td>
</tr>
</tbody>
</table>

**SYMPOSIUM**

**Mixed Models Workshop**

Session 1

Chair: Rob Tempelman, Michigan State University, Bruce Craig, Purdue University, and Larry Douglas, University of Maryland.

103 (Second session on 7/11, 8:30 AM – 12:30 PM; Interested parties should attend both sessions. Preregistration fee required.)

10:30 AM | A professional development opportunity in the use of mixed models for the analysis of common experimental designs in the animal sciences. Topic areas include repeated measures analysis, mixed model analysis of categorical data, growth curve modeling using random coefficient, nonlinear, and spline models, and power and sample size determinations for comparing alternative designs for continuous and categorical responses. All presented applications will be based on the new SAS software procedure PROC GLIMMIX.

**Nonruminant Nutrition**

**Distillers Grains for Swine**

Chairs: L. Lee Southern, Louisiana State University, and Aaron Gaines, The Maschhoffs Inc.

Sagamore Ballroom 4

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tr>
<td>10:30 AM</td>
<td>Digestible energy and metabolizable energy in distillers dried grains with solubles (DDGS) and enhanced DDGS. J. A. Soares*, H. H. Stein, V. Singh, and J. E. Pettigrew, University of Illinois, Urbana.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Effect of deoiled corn dried distillers grains with solubles (solvent extracted) on growth performance and carcass characteristics of growing and finishing pigs. J. Y. Jacela*, J. M. DeRouchey1, S. S. Dritz1, M. D. Tokach1, R. D. Goodband1, J. L. Nelssen1, J. M. Ben2, K. Prusa2, R. C. Thaler1, and D. E. Little1, 1Kansas State University, Manhattan; 2Iowa State University, Ames; 3South Dakota State University, Brookings; 4DairyNet Inc., Brookings, SD.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Effect of dried corn distillers grains with solubles (DDGS) on growth performance of growing-finishing gilts with previous exposure to DDGS in the nursery. T. E. Burkey*, R. Moreno, E. E. Carney, and P. S. Miller, University of Nebraska, Lincoln.</td>
</tr>
</tbody>
</table>
11:15 AM 564 Alternating dietary inclusion of corn dried distillers grains with solubles did not impact growth performance of finishing pigs. N. R. Augspurger*, G. I. Petersen¹, J. D. Spencer¹, and E. N. Parr¹, ¹JBS United Inc., Sheridan, IN, ²University of Illinois, Urbana.

11:30 AM 565 Effects of excess dietary crude protein from soybean meal and distillers dried grains with solubles in diets for finishing pigs. S. C. Williams*, J. D. Hancock, C. Feoli, S. Issa, and T. L. Gugle, Kansas State University, Manhattan.

Physiology and Endocrinology
Enhancing Reproductive Efficiency
Chair: Mark Estienne, Virginia Tech
205


11:00 AM 567 Effect of antioxidants on oxidative stress during maturation and in vitro culture of pig embryos. B. D. Whitaker* and J. W. Knight, Virginia Tech, Blacksburg.

11:15 AM 568 Glycomic analysis of saccharides that bind porcine sperm. E. D. Collins, C. Korneli, and D. J. Miller*, University of Illinois, Urbana.

11:30 AM 569 The relationship between sperm nuclear shape and boar fertility using Fourier harmonics. K. L. Willenburg*, K. J. Rozeboom², and J. J. Parrish¹, ¹University of Wisconsin, Madison, ²ReproQuest, LLC, Fitchburg, WI.

11:45 AM 570 Effect of number of motile, frozen-thawed boar sperm and number of inseminations on fertility in post-pubertal gilts. K. Spencer*, P. Purdy², H. Blackburn³, S. Spiller⁴, C. Welsh⁵, T. Stewart¹, S. Breen⁶, J. Taibi⁷, B. Yantis⁸, and R. Knox¹, ¹University of Illinois, Urbana, ²National Animal Germplasm Program, ARS, USDA, Fort Collins, CO, ³Purdue University, West Lafayette, IN.

12:00 PM 571 Comparison of exogenous porcine FSH/LH to PMSG/hCG for inducing follicular development and fertility in prepubertal gilts. S. M. Breen* and R. V. Knox, University of Illinois, Urbana.

Physiology and Endocrinology
Health and Immunology
Chair: Ricardo Chebel, University of California
206

10:30 AM 572 Energy-related metabolites and hormones as surrogate markers for chronic wasting disease in cervids. J. R. Olsen*, R. A. Bessen¹, T. Rocke¹, S. D. Wright¹, J. D. Bailey¹, and J. G. Berardinelli¹, ¹Montana State University, Bozeman, ²USGS National Wildlife Health Center, Madison, WI.


11:00 AM 574 Withdrawn by author.

11:15 AM 575 Early weaning alters the acute phase immune response to an endotoxin challenge in beef cattle. J. A. Carroll*, J. D. Arthington², and C. C. Chase Jr.³, ¹Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, ²University of Florida-IFAS, Range Cattle Research and Education Center, Ona, FL, ³SubTropical Agricultural Research Station, USDA-ARS, Brooksville, FL.

11:30 AM 576 Relationship of temperament and circulating concentrations of cortisol, total protein, and immunoglobulin G with growth in Angus crossbred calves. K. R. Parker*, S. T. Willard¹, A. N. Musselwhite¹, R. D. Randel¹, T. H. Welsh⁴, and R. C. Vann³, ¹MAFES/Brown Loam Experiment Station, Raymond, MS, ²Mississippi State University, Starkville, ³Texas A&I University, College Station.

11:45 AM 577 Influence of bovine temperament, transportation, and lipopolysaccharide challenge on ultrasound body composition traits. R. C. Vann*, N. C. Burdick¹, J. A. Carroll¹, R. D. Randel¹, S. T. Willard¹, L. C. Caldwell¹, J. W. Dailey², L. E. Hulbert³, A. N. Loyd¹, and T. H. Welsh Jr.³, ¹MAFES-Mississippi State University, Raymond, ²Agrilife Research, College Station, TX, ³USDA-ARS Livestock Issues Research Unit, Lubbock, TX.
Ruminant Nutrition
Carbohydrate Byproducts – Dairy
Chair: Allen Young, Utah State University
Sagamore Ballroom 5

10:30 AM 579 Feeding two corn milling co-products to dairy cattle: Intake and milk production. A. M. Gehman* and P. J. Kononoff, University of Nebraska, Lincoln.


11:00 AM 581 Effects of two dietary non-fiber carbohydrate levels on ruminal fermentation and animal metabolism of lactating cows. M. Blanch*, S. Calsamiglia1, M. Devant2, and A. Bach3, 1UAB, Spain, 2IRTA, Spain, 3ICREA, Spain.


11:30 AM 583 Evaluation of low starch diets for lactating Holstein dairy cattle. H. M. Dann*, K. W. Cotanch1, P. D. Krawczel1, C. S. Mooney1, R. J. Grant1, and T. Eguchi2, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2Zen-Noh National Federation of Agricultural Cooperative Associations, Tokyo, Japan.

11:45 AM 584 Ground vs steam-rolled barley grain for lactating cows: A clarification into conventional beliefs. A. Soltani1, G. R. Ghorbani1, M. Alikhani1, and A. Nikkhah2, 1Isfahan University of Technology, Isfahan, Iran, 2University of Illinois, Urbana.

12:00 PM 585 Replacement of starch from corn with non-forage fiber from distillers grains in diets of lactating dairy cows. S. D. Ranathunga*, K. F. Kalsecheur, A. R. Hippen, and D. J. Schingoethe, South Dakota State University, Brookings.

Ruminant Nutrition
Nitrogen Sources and Utilization
Chair: Paul Kononoff, University of Nebraska
Sagamore Ballroom 3

10:30 AM 586 Effects of feeding triticale dried distillers grains with solubles as a N source on productivity of lactating dairy cows. M. Oba* and T. D. Whyte, University of Alberta, Edmonton, AB, Canada.


11:00 AM 588 Digestibility of rumen undegraded amino acids estimated in cecectomized roosters and the modified three-step in vitro procedure. S. E. Boucher*, S. Calsamiglia2, M. D. Stern3, C. M. Parsons4, and C. G. Schwab5, 1University of New Hampshire, Durham, 2Universitat Autònoma de Barcelona, Bellaterra, Spain, 3University of Minnesota, St. Paul, 4University of Illinois, Urbana.


11:30 AM 590 Feeding two corn milling co-products to dairy cattle: Nutrient digestibility, purine derivatives excretion, and nitrogen utilization. A. M. Gehman* and P. J. Kononoff, University of Nebraska, Lincoln.

11:45 AM 591 Milk urea concentration as an indicator of ammonia emission from dairy cow houses in a situation with restricted grazing. G. van Duinkerken*, M. C. J. Smits1, G. André1, P. F. G. Vereijken2, L. B. J. Sebek1, A. Bannink1, and J. Dijkstra1, 1Wageningen University and Research Center, Lelystad, the Netherlands, 2Wageningen University and Research Center, Wageningen, the Netherlands.

12:00 PM 592 A meta-analysis of the effects of protein concentration and degradability on milk N efficiency in dairy cows. P. Huhtanen*, A. N. Hristov1, and M. Rinne2, 1Cornell University, Ithaca, NY, 2Pennsylvania State University, State College, 3MTT-Agrifood Finland, Jokioinen, Finland.

Withdrawn by author.
SYMPOSIUM
Swine Species
Intestinal Barrier Function
Chair: Mark E. Wilson, Zinpro Corporation
Sponsors: European Association of Animal Production and Newsham Genetics
105–106


12:00 PM 596 Strategies to minimize inflammatory taxation on animal performance. M. E. Cook*, University of Wisconsin, Madison.

Forages and Pastures III
Chair: Ted McCollum, Texas AgriLife Extension
104

11:30 AM 597 Performance by spring- and fall-calving cows grazing with full access, limited access, or no access to endophyte-infected tall fescue. J. Caldwell*, K. Coffey1, D. Philipp1, J. Jennings1, D. Hubbell, III1, T. Hess1, D. Kreider1, M. Looper2, M. Popp1, M. Savin1, and C. Rosenkrans Jr.3, 1University of Arkansas, Fayetteville, 2USDA-ARS, Booneville, AR, 3Cooperative Extension Service, Little Rock, AR.


12:00 PM 599 Forage species alters animal performance, carcass quality, and fatty acid composition of forage-finished beef produced in summer months. J. Schmidt*, J. Andrae, S. Duckett, M. Miller, and S. Ellis, Clemson University, Clemson, SC.

12:15 PM 600 Performance of finishing steers on corn silage or low grain sorghum silage with corn oil supplementation. V. A. Corriher*, G. M. Hill, and B. G. Mullinix Jr., University of Georgia, Tifton.

SYMPOSIUM
ADSA Production Division Symposium
Dairy Replacement Heifers: Cost-Effective Strategies from Weaning to Calving
Chair: Leo Timms, Iowa State University
Sponsor: European Association of Animal Production
Sagamore Ballroom 2

2:00 PM Introduction. L. Timms, Iowa State University, Ames.

2:05 PM 601 Potential and limitations associated with manipulating dairy replacement heifer nutrition programs. P. C. Hoffman*, University of Wisconsin, Madison.

2:45 PM 602 Using growth monitoring in heifer management and research. A. Bach*, J. Ahedo1, and A. Kertz2, 1IRTA-Unitat de Remugants, Barcelona, Spain, 2ICREA, Barcelona, Spain, 3Rancho Las Nieves, Mallen, Spain, 4ANDHILL LLC, St. Louis, MO.

3:25 PM Break


4:20 PM 604 Raising healthy dairy replacements: How we get the job done. G. Goodell*, The Dairy Authority LLC, Greeley, CO.
ASAS Centennial Presentation: The promise of proteomics in animal science. J. D. Lippolis* and T. A. Reinhardt, National Animal Disease Center, USDA-ARS, Ames, IA.

Periparturient liver and mammary tissue-explant gene expression is responsive to bacterial lipopolysaccharide (LPS) in vitro: A model to study tissue-specific genomic responses to infection. M. Mukesh*, D. E. Graugnard, M. Bionaz, and J. J. Loot, University of Illinois, Urbana.


Breeding and Genetics
Breeding for Milk Quality and Test-Day Model Applications
Chair: Nicolas Gengler, Gembloux Agricultural University
Sagamore Ballroom 7

Quantitative trait loci for milk-fat composition in Dutch Holstein Friesians. A. Schennink*1, W. M. Stoop1, H. Bovenhuis1, J. M. L. Heck2, P. D. Koks1, M. H. P. W. Visker1, and J. A. M. van Arendonk1, Animal Breeding and Genomics Centre, Wageningen University, Wageningen, the Netherlands, 1National Fund for Scientific Research, Brussels, Belgium.

Genetic parameters of saturated and monounsaturated fatty acids estimated by test-day model in Walloon dairy cattle. H. Soyeurt*1, C. Bastin1, P. Dardenne2, F. Deharena2, and N. Gengler1, Gembloux Agricultural University, Gembloux, Belgium, 2Agricultural Walloon Research Centre, Gembloux, Belgium, 3National Fund for Scientific Research, Brussels, Belgium.

Genetic parameters of stearoyl coenzyme-A desaturase 9 activity estimated by test-day model. V. M. M.-R. Arnould*, N. Gengler1, P. Dardenne1, F. Dehareng2, and N. Gengler1, Gembloux Agricultural University, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

Relationship between lactoferrin, minerals, and somatic cells in bovine milk. H. Soyeurt*1, V. M.-R. Arnould1, D. Bruwier1, P. Dardenne2, J.-M. Romnee2, and N. Gengler1, Gembloux Agricultural University, Gembloux, Belgium, 2Agricultural Walloon Research Centre, Gembloux, Belgium, 3National Fund for Scientific Research, Brussels, Belgium.

Genetic variation in milk protein composition and the effects of genetic variants on the concentration of individual proteins. J. M. L. Heck*1, A. Schennink2, G. C. B. Schopen2, H. J. F. van Valenberg1, H. Bovenhuis2, M. H. P. W. Visker1, J. A. M. van Arendonk1, and A. C. M. van Hooijdonk1, Agricultural Walloon Research Centre, Gembloux, Belgium.

Effect of casein genotypes on heritability of milk coagulation ability in Holstein Friesian cows. M. Cassandro*1, R. Dal Zotto1, M. De Marchi1, A. Comin1, S. Chessa1, and G. Bittante1, Dipartimento di Scienze Zootecniche, Universita di Sassari, Sassari, Italy, 2Department of Animal Science, University of Padova, Legnaro, Padova, Italy, 3Department of Veterinary Science and Technology for Food Safety, University of Milano, Italy.
4:15 PM 619 Improving stability of test day model bull proofs. F. Canavesi, S. Biffani*, E. L. Nicolazzi, and R. Finocchiaro, ANAFI, Cremona, Italy.

4:30 PM 620 Genetic parameters for milk, fat and protein in Holsteins using a multiple-parity test day model that accounts for heat stress. I. Aguilar*1,2, I. Misztal3, and S. Tsuruta1, 1University of Georgia, Athens, GA, 2Instituto Nacional de Investigación Agropecuaria, Las Brujas, Uruguay.

4:45 PM 621 An alternative model to accommodate very large numbers of traits in random regression test-day models. N. Gengler*1,2, 1Gembloux Agricultural University, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

Breeding and Genetics
Current Issues in Beef Cattle Breeding
Chair: Janice Rumph, Michigan State University
Sagamore Ballroom 4

2:00 PM 622 ASAS Centennial Presentation: Animal breeding and the Journal of Animal Science: A century of co-evolution. W. Hohenboken*1,2, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Oregon State University, Corvallis.


2:45 PM 624 Estimates of genetic variation for feed intake and other characteristics in growing beef cattle. K. M. Rolfe*1,2, M. K. Nielsen1, C. L. Ferrell1, and T. G. Jenkins1, University of Nebraska, Lincoln, 2US Meat Animal Research Center, Clay Center, NE.

3:00 PM 625 Analysis of beef cattle growth with a Kalman filter. S. Forni*, D. Gianola, G. J. M. Rosa, G. de los Campos, and K. A. Weigel, University of Wisconsin, Madison.

3:15 PM 626 Bayesian estimation of the covariance between permanent maternal and temporary environmental effects for weaning weight in beef cattle. R. Cantet*1,2, University of Buenos Aires, Buenos Aires, Argentina, 2CONICET, Argentina.

3:30 PM Break

3:45 PM 627 ASAS Centennial Presentation: Future needs in animal breeding. R. D. Green*, Pfizer Animal Genetics, Sutton, NE.


4:30 PM 629 Clustering of herds to account for heterogeneous variance of docility scores in Limousin cattle. D. W. Beckman* and D. J. Garrick, Iowa State University, Ames.

4:45 PM 630 Estimation of breed and heterosis effects for growth and carcass traits in cattle using published crossbreeding studies. J. L. Williams*, R. Rekaya, and J. K. Bertrand, University of Georgia, Athens.

SYMPOSIUM
Companion Animals
Exotic Animal Nutrition
Chair: Nancy A. Irlbeck, Colorado State University
Sponsors: Hill’s Science Diet, Iams, and Nestle Purina

104

2:00 PM Introduction – Welcome and Why an Exotic Animal Symposium?

2:10 PM 631 Zoo nutrition: In the beginning. D. E. Ullrey*, Michigan State University, East Lansing.

2:40 PM 632 Forty-plus years of exotic animal management – A director’s perspective. L. Simmons*, Omaha’s Henry Doorly Zoo, Omaha, NE.

3:00 PM 633 Amphibians and reptiles – Trials and tribulations. C. Dikeman*, Saint Louis Zoo, St. Louis, MO.

3:20 PM 634 Carnivores: From mouse to moose. E. S. Dierenfeld*, Saint Louis Zoo, St. Louis, MO.
### Comparative avian nutrition – Lessons learned from domesticated poultry

E. A. Koutsos*, Mazuri Exotic Animal Nutrition/PMI Nutrition International LLC.

### Ungulates: Are they cows with long necks?

M. S. Edwards*, California Polytechnic State University, San Luis Obispo.

### Omnivores – Models of metabolism

J. Williams*, Indianapolis Zoological Society, Indianapolis, IN.

### Summary – What is the Future in Exotic Animal Nutrition?

#### SYMPOSIUM

**Contemporary and Emerging Issues**

**Healthfulness of Dairy and Meat Products**

Chair: Edward Stanisiewski, Pfizer

Sponsor: Elanco Animal Health

**Sagamore Ballroom 3**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>The current nutrition environment: Beef lipids in perspective. S. McNeill*, National Cattlemen's Beef Association, Centennial, CO.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>Role of animal protein in optimal health. N. Rodriguez*, University of Connecticut, Storrs.</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>Milk fat globule membrane components and their interactions with lactic acid bacteria. R. Jimenez-Flores*, California Polytechnic State University, San Luis Obispo.</td>
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</table>

#### SYMPOSIUM

**Dairy Foods**

**Emerging Nonthermal Food Processing Technologies- Their Potential in Dairy Systems**

Chair: Geoffrey Smithers, Food Science Australia

Sponsor: European Association of Animal Production

**121**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>Introduction to nonthermal processing technologies and dairy systems. G. Smithers*, C. Versteeg, and J. Sellahewa, Food Science Australia, Melbourne &amp; Sydney, Australia.</td>
</tr>
<tr>
<td>3:05 PM</td>
<td>Microstructural effects in thermo-sonicated yogurt and other dairy products: Understanding and exploiting the science. G. V. Barbosa-Canovas* and D. Bermudez-Aguirre, Washington State University, Pullman.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Membrane and other processing technologies for dairy fluids: Effectiveness of ultrasound in enhancing productivity. R. Mawson*, S. Kentish*, M. Ashokkumar*, S. Udabage*, and M. Golding**, Food Science Australia, Werribee, Victoria, Australia, University of Melbourne, Melbourne, Victoria, Australia.</td>
</tr>
<tr>
<td>3:55 PM</td>
<td>Microbial safety and bioactive efficacy: Effectiveness of pulsed electric field processing of dairy fluids. J. Wan*, K. Shamsi*, Q. Sui*, D. Bermudez-Aguirre*, C. P. Dunne*, G. Barbosa-Canovas*, and C. Versteeg*, Innovative Foods Center, Food Science Australia, Melbourne, Australia, RMIT University, Melbourne, Australia, University of Melbourne, Melbourne, Australia, Washington State University, Pullman, US Army Natick Soldier Center, MA.</td>
</tr>
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</table>
Extension Education

All Species

Chair: Jodi Sterle, Texas A&M University

206

2:00 PM 650  A tool to optimize the length of time a boar is in an AI stud. J. S. Fix*1, M. T. See1, and D. S. Casey2, 1North Carolina State University, Raleigh, 2Pig Improvement Company, Hendersonville, TN.

2:15 PM 651  State funded genetic enhancement programs: An example from Tennessee. M. L. Spangler* and D. Kirkpatrick, 1University of Nebraska, Lincoln, 2University of Tennessee, Knoxville.

2:30 PM 652  Transferring technology to beef producers in Missouri to facilitate expanded use of estrus synchronization and AI. D. C. Busch*1, N. R. Leitman1, D. A. Mallory1, J. F. Bader2, D. J. Wilson1, S. E. Poock1, M. F. Smith1, and D. J. Patterson1, 1University of Missouri, Columbia, 2Merial Limited, Fulton, MO.

2:45 PM 653  Evaluation of on-farm pasteurization systems. J. A. Elizondo-Salazar*1,2, C. F. Vargas-Rodríguez2, S. C. Donaldson1, B. M. Jayarao1, and A. J. Heinrichs1, 1The Pennsylvania State University, University Park, 2Estación Experimental Alfredo Volio Mata, Costa Rica.

3:00 PM 654  Managing the newly created Livestock Gross Margin for Dairy (LGM-Dairy) insurance under seasonal climate variability. V. E. Cabrera*1 and D. Solis2, 1New Mexico State University, Clovis, 2University of Miami, Tallahassee, FL.

3:15 PM 655  A stochastic simulation model for assessment of investments in Precision Dairy Farming technologies: Model enhancements and utility demonstration. J. M. Bewley*1, M. D. Boehlje1, A. W. Gray1, H. Hogreve2, S. D. Eicher1, and M. M. Schutz2, 1Purdue University, West Lafayette, IN, 2Utrecht University, Utrecht, the Netherlands, 3USDA-ARS, West Lafayette, IN.

3:30 PM 656  Assessing the potential value of automated body condition scoring through stochastic simulation. J. M. Bewley*1, M. D. Boehlje1, A. W. Gray1, H. Hogreve2, S. D. Eicher1, and M. M. Schutz2, 1Purdue University, West Lafayette, IN, 2Utrecht University, Utrecht, the Netherlands, 3USDA-ARS, West Lafayette, IN.

3:45 PM 657  Analysis of corn distillers grain for expansion of the FeedAC database to include pre-digestion fractionated high protein distillers’ grains (HP-DG). T. R. Johnson*1, J. Goodson2, D. P. Casper3, T. J. Applegate4, K. E. Ilieji4, B. T. Ulrich5, F. P. Lundy III6, and C. G. Schwab7, 1Pig Improvement Company, Clovis, 2PigCHAMP Pro Europa, S.A., Segovia, Spain, 3Segovia, Spain, 4Spain, Madrid, Spain, 5Feaspor, Segovia, Spain, 6Spanish Ministry of Agriculture, Fisheries and Food, Madrid, Spain.

4:00 PM 658  Development of a software to calculate pollutant emissions, resources consumption and best available techniques effects from Spanish farms. C. Pineiro*1, G. Montalvo2, M. A. Garcia2, M. Herrero1, and M. Bigeriego*, 1Spanish Ministry of Agriculture, Fisheries and Food, Madrid, Spain, 2Segovia, Spain, 3University of Hawaii, Honolulu, 4University of Guelph, Guelph, ON, Canada.

4:15 PM 659  Using an iClicker audience response system to engage participants in extension programs. J. Andrae*, Clemson University, Clemson, SC.

Growth and Development

General Topics

Chairs: Anthony Capuco, USDA-ARS, and Aubrey Schroeder, Elanco

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2:00 PM 660  Ovariectomy alters myoepithelial cell populations in the prepubertal bovine mammary gland. K. E. Ballagh1, N. Korn1, L. Riggs2, R. M. Akers1, and S. Ellis*, 1Clemson University, Clemson, SC, 2Louisiana State University, Baton Rouge, 3Virginia Polytechnic Institute and State University, Blacksburg.

2:15 PM 661  Dihydroxy vitamin D affects the myogenic potential of porcine satellite cells. A. Qu1, R. P. Rhoads2, and C. H. Stahl*, 1Iowa State University, Ames, 2University of Arizona, Tucson, 3North Carolina State University, Raleigh.

2:30 PM 662  Calpain and calpastatin mRNAs expressions in skeletal muscle are highly correlated with protein accretion activities in neonatal pigs. Z. Li*, B. Zhao1, X. Yang2, M. Z. Fan2, and J. Yang1, 1University of Hawaii, Honolulu, 2University of Guelph, Guelph, ON, Canada.

2:45 PM 663  A low-fat liquid diet decreases AMPK and increases mTOR phosphorylation in skeletal muscle of 10-day-old pigs. W. Oliver* and J. Miles, USDA, ARS, US Meat Animal Research Center, Clay Center, NE.

3:00 PM 664  Media components including exogenous lipid and PPAR-γ agonists influence the differentiation of primary bovine adipocytes in vitro. A. J. Lengi and B. A. Corl*, Virginia Polytechnic Institute and State University, Blacksburg.

Dry matter intake based on birth weight as weaning criterion in Brown Swiss calves. B. Saremi*, A. Foroughi, and A. Rahimi, Education Center of Jihad-e Agriculture, Mashhad, Khorasan-e Razavi, Iran.

Effects of plane of nutrition and bioavailable trace minerals on growth of transported male dairy calves. J. S. Osorio**, J. K. Drackley1, R. L. Wallace1, D. Rincker1, D. J. Tomlinson1, and T. J. Earleywine1, 1University of Illinois, Urbana, 2Zinpro Performance Minerals, Jeffersonton, VA, 3Land O’ Lakes Animal Milk Products Inc., Madison, WI.

Relationship of ghrelin with growth performance and carcass composition of beef cattle. J. S. Jennings1, R. H. Pritchard1, K. W. Bruns1, A. Trenkle2, D. H. Keisler1, and A. E. Wertz-Lutz1, 1South Dakota State University, Brookings, 2Iowa State University, Ames, 3University of Missouri, Columbia, 4Berry College, Rome, GA.


Sheep differing in exogenous adrenocorticotropin hormone induced cortisol responses are different in body composition and residual feed intake. S. A. Knott1, L. J. Cummins2, F. R. Dunshea*3, and B. J. Leury3, 1Charles Sturt University, Wagga Wagga, NSW, Australia, 2Ivanhoe, Cavendish, Victoria, Australia, 3The University of Melbourne, Parkville, Victoria, Australia.

Wool growth is negatively related to exogenous adrenocorticotropin hormone induced cortisol responses in sheep with a low wool growth potential but not with a high potential. G. M. Butler1, M. W. Robertson1, A. J. Tilbrook2, F. R. Dunshea3, and B. J. Leury*4, 1The University of Melbourne, Parkville, Victoria, Australia, 2Monash University, Clayton, Victoria, Australia.

SYMPOSIUM
International Animal Agriculture
Welfare in Animal Production, from Science to Practice
Chair: Sergio Calsamiglia, Universitat Autonoma de Barcelona
Sponsor: European Association of Animal Production
101–102

Introduction. S. Calsamiglia, Universitat Autonoma de Barcelona.

ASAS Centennial Presentation: The impact of current global challenges in the animal agricultural industry. A. Tewolde*1 and T. Diaz1, Inter American Institute for Cooperation on Agriculture - IICA, San José, Costa Rica, 2Food and Agriculture Organization - FAO, Santiago de Chile.

Farm animal welfare: The science behind the standards. D. Fraser*, University of British Columbia, Vancouver, BC, Canada.

Strategies to improve animal welfare in poultry production: From science to practice. J. A. Mench*, University of California, Davis.

Strategies to improve animal welfare in farm animals: From science to practice. X. Manteca*, A. Bach1, S. Calsamiglia1, A. Ferret1, J. Gasa1, and B. Jones1, 1School of Veterinary Science, UAB, Bellaterra, Barcelona, Spain, 2IRTA-Unitat de Remugants & ICREA, Barcelona, Spain, 3Animal Behaviour & Welfare Consultant, Edinburgh, Scotland.


Lactation Biology III
Chair: Lance Baumgard, University of Arizona
Sagamore Ballroom 6

Inhibitory effect of unsaturated fatty acids on de novo fatty acid synthesis in bovine mammary epithelial cells. J. W. McFadden*, I. K. Mullarky, and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.

Lipogenic gene expression in MAC-T cells is affected differently by fatty acids and enhanced by PPAR-gamma activation. A. K. G. Kadegowda*, M. Bionaz1, L. S. Piperova1, R. A. Erdman1, and J. J. Loor2, 1University of Maryland, College Park, 2University of Illinois, Urbana.

2:45 PM 680 SREBP1 and Spot14 are acutely down-regulated in mammary tissue during abomasal infusion of *trans*-10, *cis*-12 conjugated linoleic acid (CLA) in the dairy cow. K. J. Harvatine*, Y. R. Boisclair, and D. E. Bauman, *Cornell University, Ithaca, NY.*

3:00 PM 681 PPAR-gamma activation and *trans*-10, *cis*-12-CLA affect gene expression profiles and intracellular lipid droplet formation and secretion to different extents in MAC-T cells. A. K. G. Kadegowda*, M. Bionaz2, R. E. Everts2, H. A. Lewin2, L. S. Piperova1, R. A. Erdman1, and J. J. Loor*, 1*University of Maryland, College Park, 2University of Illinois, Urbana.*


3:30 PM Summary discussion: Mechanism of CLA effect on milk fat synthesis.


4:00 PM 684 Mammary fat pad but not parenchyma is affected by diet in pre-weaned Holstein heifers. K. M. Daniels*, S. R. Hill1, K. F. Knowlton1, R. E. James1, M. L. Mc Gilliard1, A. V. Capuco2, and R. M. Akers1, 1*University of Maryland, College Park, 2USDA-Agricultural Research Service, Beltsville, MD.*

4:15 PM 685 Hormone interactions modulate mammary growth, morphogenesis and local IGF expression in peripubertal gilts. K. C. Horigan1, J. F. Trott1,2, and R. C. Hovey*1,2, 1*University of Vermont, Burlington, 2University of California, Davis.*

4:30 PM 686 Possible involvement of connective tissue growth factor (CTGF) in insulin-like growth factor-I (IGF1) stimulation of proliferation of bovine mammary epithelial cells. Y. Zhou1, A. V. Capuco2, and H. Jiang*, 1*Virginia Polytechnic Institute and State University, Blacksburg, 2USDA-ARS, Beltsville, MD.*


**Meat Science and Muscle**

**Biology Meat Science Research: Past, Present, and Future**

*Chair: Dean Pringle, The University of Georgia*

120

2:00 PM 688 **ASAS Centennial Presentation:** A century of pioneers and progress in meat science leads to new frontiers. D. H. Beermann*, *University of Nebraska, Lincoln.*


3:15 PM 692 **ASAS Centennial Presentation:** Current and future meat science research needs. T. H. Powell* and R. D. Huffman*, 1*American Meat Science Association, Savoy, IL, 2American Meat Institute, Washington, DC.*

3:45 PM Discussion
Nonruminant Nutrition
Energy Utilization

Chairs: Jack Odle, North Carolina State University, and Joe Crenshaw, APC Inc.

105–106

2:00 PM 693 Effects of enzyme additions to diets with corn- and sorghum-based distillers dried grains with solubles on growth performance and nutrient digestibility in nursery and finishing pigs. C. Feoli*, J. D. Hancock, T. L. Gugle, S. D. Carter, and N. A. Cole, Kansas State University, Manhattan, Oklahoma State University, Stillwater, USDA/ARS, Bushland, TX.

2:15 PM 694 A multi-substrate enzyme blend for weaned pigs fed corn- or wheat-barley-based diets and its relationship with water acidification. Y. Han*, A. Humphreys, P. Lessard, and M. Vignola, Nutreco Canada Agresearch, Guelph, ON, Canada, Nutreco Canada West, Winnipeg, MB, Canada, Nutreco Canada East, St. Hugues, QC, Canada, Nutreco Canada Agresearch, St-Roumain, QC, Canada.


3:00 PM 697 Variation in chemical composition of soybean hulls. F. F. Barbosa*, M. D. Tokach, J. M. DeRouchey, R. D. Goodband, J. L. Nelssen, and S. S. Dritz, University of Viçosa, Viçosa, Minas Gerais, Brazil, Kansas State University, Manhattan.


3:30 PM 699 Carbohydrate X gut environment modifier interaction in weaned pigs. B. V. Lawrence*, R. J. Harrell, R. A. Anderson, and F. Navarro, NUFFUS International Inc, St. Louis, MO.

3:45 PM 700 Dietary fatty acids can alter markers of inflammation in cartilage and synovial fluid from multiparous sows. C. I. O’Connor-Robison*, J. M. Mapes, J. D. Spencer, and M. W. Orth, Michigan State University, East Lansing, JBS United, Sheridan, IN.

4:00 PM 701 Effect of pelleting and fat content on energy value of corn for pigs. J. Noblet* and Y. Jaguelin, INRA, Saint Gilles, France.


4:45 PM 704 Effect of insoluble and soluble dietary fiber on the standardized ileal digestibility of protein and selected amino acids in growing pigs. V. Halas*, G. Végvári, and L. Babinszky, Kaposvár University, Kaposvár, Hungary, Corvinus University of Budapest, Budapest, Hungary.

Nonruminant Nutrition
Feed Additives II

Chairs: Don Giesting, Cargill Animal Nutrition, and Robert Dove, University of Georgia

107–108

2:00 PM 705 Effects of dietary supplementation of benzoic, formic, and lactic acids on nitrogen balance of pigs. B. J. Min*, D. A. Monson, J. O. Vaughn, and S. W. Kim, North Carolina State University, Raleigh, Texas Tech University, Lubbock, Emerald Performance Materials, Kalama, WA.


2:45 PM 708 Gut environment modifier × lactose interaction in weaned pigs. J. Lampe1, B. V. Lawrence*2, R. J. Harrell1, G. Gourley1, R. A. Anderson2, and F. Navarro2, 1Swine Graphics Enterprises, Webster City, IA, 2Novus International Inc., St. Louis, MO.


3:15 PM 710 Kinetics of glucose absorption is affected by dietary oat β-glucans in portal-vein catheterized grower pigs. S. Hooda*, J. J. Matte2, T. Vasanthan1, and R. T. Zijlstra1, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lennoxville, QC, Canada.


3:45 PM 712 Effects of EcoCare® feed on growth performance and nutrient excretion of finishing pigs. T. Walraven*, S. Carter2, M. Lachmann1, J. Bundy1, J. Jarrett1, and B. De Rodas2, 1Oklahoma State University, Stillwater, 2Land O’Lakes Purina Feed, Gray Summit, MO.

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**Physiology and Endocrinology**

**Synchronization of Estrus in Cattle**

**Chair: Raymond Nebel, Select Sires**

2:00 PM 713 ASAS Centennial Presentation: Development of cattle estrus and breeding management. J. W. Lauderdale*, Lauderdale Enterprises Inc, Augusta, MI.

2:30 PM 714 Identification of differential gene expression during transition of bovine corpus luteum from early to mid-phase and their potential role in acquisition of luteolytic sensitivity to prostaglandin F2 alpha. M. P. Gorvanahally*, M. Salem, J. Yao, K. Inskeep, and J. A. Flores, West Virginia University, Morgantown.

2:45 PM 715 Synchronizing new follicular wave emergence in Bos indicus-influenced heifers with estradiol benzoate: Role of the magnitude of the acute increase in progesterone. J. D. Pack*1,2, I. C. Velez1,2, M. Amstalden1,2, and G. L. Williams1,2, 1Texas Agrilife Research, Beeville, TX, 2Texas A&M University, College Station.


3:30 PM 718 Timing of artificial insemination in beef cows following the CO-Synch + CIDR protocol. D. C. Busch*, D. J. Schafer2, D. J. Wilson1, D. A. Mallory1, N. R. Leitman1, J. K. Haden2, M. R. Ellersieck1, M. F. Smith1, and D. J. Patterson1, University of Missouri, Columbia, 2MFA Inc., Columbia, MO.

3:45 PM 719 Substitution of estradiol benzoate for GnRH in the Select Synch + CIDR protocol with or without temporary calf removal in Bos indicus-influenced cattle. J. D. Pack*1,2, I. C. Velez1,2, M. Amstalden1,2, and G. L. Williams1,2, 1Texas AgriLife Research, Beeville, TX, 2Texas A&M University, College Station.

4:00 PM 720 Ovarian and fertility responses of Holstein heifers after GnRH, progesterone, and PGF2α at five stages of the estrous cycle. J. S. Stevenson*, Kansas State University, Manhattan.


4:30 PM 722 Comparison of pregnancy rates in beef cattle after fixed-time AI using semen processed with two different extenders. D. C. Busch*, N. R. Leitman1, D. A. Mallory1, D. J. Wilson1, J. F. Bader2, J. L. Martin1, M. F. Smith1, and D. J. Patterson1, University of Missouri, Columbia, 2Merial Limited, Fulton, MO, 3Accelerated Genetics, Baraboo, WI.

Ruminant Nutrition
Protein and Amino Acids – Beef
Chair: Kristy Dorton, Diamond V
109–110


2:30 PM 726 Effects of increasing level of corn dried distiller’s grains with solubles on intake, digestion, and ruminal fermentation in steers fed backgrounding diets. J. L. Leupp*, G. P. Lardy, and J. S. Caton, North Dakota State University, Fargo.

2:45 PM 727 Effect of feeding distillers grains on performance and marbling deposition in steers fed high-concentrate or high-forage diets. J. P. Schoonmaker*, A. H. Trenkle, and D. C. Beitz, Iowa State University, Ames, IA.

3:00 PM 728 Effect of wheat-, corn-, and triticale-based distillers grains with solubles on performance and carcass characteristics of growing lambs. L. E. McKeown*1, A. V. Chaves2, M. Oba1, E. Okine1, T. A. McAllister2, and D. Gibb2, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

3:15 PM 729 Feeding dry-rolled or steam-flaked corn with increasing levels of wet distillers grains to finishing steers. C. M. Godsey*, M. K. Luebbe, G. E. Erickson, and T. J. Klopfenstein, University of Nebraska, Lincoln.

3:30 PM 730 Effects of distiller’s grain and probiotic on growth and carcass characteristics of finishing beef steers. F. F. Korthaus*1, E. S Vanzant2, G. Rentfrow2, K. K. Kreikemeier1,2, D. L. Harmon1, and K. R. McLeod1, 1University of Kentucky, Lexington, 2Vit-E-Men, NE.

3:45 PM 731 Effect of varying ruminally degradable to undergradable protein ratio on feed intake, nutrient digestion and N balance of buffalo calves. J. I. Sultan*, A. Javed1, M. Yaqoob2, and P. Akhtar2, 1Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan, 2Institute of Agriculture, Faisalabad, Pakistan.

4:00 PM 732 Effects of 20% corn wet distillers grain’s plus solubles in steam-flaked and dry-rolled corn- based finishing diets. J. C. MacDonald1,2, K. H. Jenkins*1, F. T. McCollum III1, and N. A. Cole1, 1Texas AgriLife Research, Amarillo, TX, 2West Texas A&M University, Canyon, 3Texas AgriLife Extension, Amarillo, TX, 4USDA-Agricultural Research Service, Bushland, TX.

4:15 PM 733 Effect of supplementation frequency of soyhulls and corn gluten feed based mix on digestion and nitrogen balance of beef steers. M. E. Drewnoski* and M. H. Poore, North Carolina State University, Raleigh.

Ruminant Nutrition
Rumen Fermentation Modifiers
Chair: Allen Young, Utah State University
Sagamore Ballroom 5

2:00 PM 734 Effect of Rumensin® and Tylan® in feedlot diets containing wet distillers grains plus solubles fed to beef steers. N. F. Meyer*, G. E. Erickson1, T. K. Klopfenstein1, J. R. Benton1, M. K. Luebbe1, and S. B. Laudert1, 1University of Nebraska, Lincoln, 2Elanco Animal Health, Greenfield, IN.

2:15 PM 735 Effect of Rumensin® and Tylan® fed separately on in combination on feedlot performance and carcass characteristics of feedlot cattle. G. J. Vogel*, S. B. Laudert1, and R. S. Swingle2, 1Elanco Animal Health, Greenfield, IN, 2Cactus Feeders, Amarillo, TX.

2:30 PM 736 Interactions of monensin with dietary fat and carbohydrate components on ruminal fermentation and production responses by dairy cows. B. Mathew*, E. R. Oelker, M. L. Eastrudge, and J. L. Firkins, The Ohio State University, Columbus.

2:45 PM 737 Effects of Optaflexx™ on ruminal ammonia and amino acid concentrations in cattle fed dry-rolled or steam-flaked corn finishing diets with or without dried distiller’s grains. C. E. Walker* and J. S. Drouillard, Kansas State University, Manhattan.

3:00 PM 738 Effects of cinnamaldehyde-eugenol and capsicum on rumen fermentation and feeding behavior in beef heifers fed a high-concentrate diet. M. Rodriguez-Prado1, S. Calsamiglia1, A. Ferret1, J. Zwieten1, L. Gonzalez1, and D. Bravo*2, 1Universitat Autonoma de Barcelona, Spain, 2Pancosma, Switzerland.
Friday, July 11

Animal Behavior and Well-Being
Beef and Dairy Cattle

Chair: Jeremy Marchant-Forde, USDA-ARS and Purdue University
101–102

8:30 AM 746 Effect of receiving weight on predicted days to onset of respiratory disease in feedlot steers. C. M. McAllister*1, R. M. Enns1, R. L. Weaber2, H. Van Campen3, G. H. Loneragan4, J. L. Salak-Johnson5, C. C. L. Chase6, J. J. Wagner1, and E. J. Pollak7, 1Colorado State University, Fort Collins, 2University of Missouri, Columbia, 3Colorado State University, Fort Collins, 4West Texas A&M University, Canyon, 5University of Illinois, Urbana, 6South Dakota State University, Brookings, 7Cornell University, Ithaca, NY.

8:45 AM 747 Correlations among measures of temperament, weight, and gain of steers at placement and reimplant in a commercial feed yard. R. L. Weaber*1, R. M. Enns1, H. Van Campen2, G. H. Loneragan3, J. L. Salak-Johnson1, C. C. L. Chase2, J. J. Wagner1, and E. J. Pollak4, 1University of Missouri, Columbia, 2Colorado State University, Fort Collins, 3West Texas A&M University, Canyon, 4University of Illinois, Urbana, 5South Dakota State University, Brookings, 6Cornell University, Ithaca, NY.

9:00 AM 748 The effect of exit velocity at receiving and re-implant on average daily gain and weight at re-implant. A. R. Pepper*1, R. M. Enns1, R. L. Weaber2, H. Van Campen3, G. H. Loneragan4, J. L. Salak-Johnson5, C. C. L. Chase6, J. J. Wagner1, and E. J. Pollak7, 1Colorado State University, Fort Collins, 2University of Missouri, Columbia, 3West Texas A&M University, Canyon, 4University of Illinois, Urbana, 5South Dakota State University, Brookings, 6Cornell University, Ithaca, NY.

9:15 AM 749 Effect of processing stress on feedlot cattle sickness. B. W. Brigham*1, R. M. Enns1, R. L. Weaber2, H. Van Campen3, G. H. Loneragan4, J. L. Salak-Johnson5, C. C. L. Chase6, J. J. Wagner1, and E. J. Pollak7, 1Colorado State University, Fort Collins, 2University of Missouri, Columbia, 3West Texas A&M University, Canyon, 4University of Illinois, Urbana, 5South Dakota State University, Brookings, 6Cornell University, Ithaca, NY.

9:30 AM 750 Effect of daily ambient temperature and wind speed on sickness of feedlot cattle. S. E. Speidel*1, R. M. Enns1, G. H. Loneragan2, R. L. Weaber1, H. Van Campen1, J. L. Salak-Johnson1, C. C. L. Chase1, J. J. Wagner1, and E. J. Pollak2, 1Colorado State University, Fort Collins, 2West Texas A&M University, Canyon, 3University of Missouri, Columbia, 4University of Illinois, Urbana, 5South Dakota State University, Brookings, 6Cornell University, Ithaca, NY.

9:45 AM 751 Break

10:00 AM 752 Effect of rubber flooring on cow locomotion and gene expression. K. O’Driscoll12, M. M. Schutz1, and S. D. Eicher*1, 1Teagasc, Fermoy, Ireland, 2NUIG, Galway, Ireland, 3Purdue University, West Lafayette, IN, 4USDA-ARS, West Lafayette, IN.

10:15 AM 753 Effect of feed bunk sprinklers on attendance at un-shaded feed bunks in dry-lot dairies. B. H. Carter*1, T. H. Friend, J. E. Sawyer, and M. A. Tomazewski, Texas A&M University, College Station.
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<th>Time</th>
<th>Session Number</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>10:30 AM</td>
<td>753</td>
<td>Effect of shade on panting score of feedlot cattle exposed to heat stress.</td>
<td>J. B. Gaughan*, M. L. Sullivan1, J. Cawdell-Smith1, and T. L. Mader2, The University of Queensland, Gatton, Qld, Australia, University of Nebraska, Concord.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>755</td>
<td>Effects of soil surface temperature on daily water intake in feedlot steers.</td>
<td>R. A. Arias* and T. L. Mader2, Universidad Católica de Temuco, Temuco, Chile, University of Nebraska, Lincoln.</td>
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**Breeding and Genetics**

**Dairy, Sheep & Goat – Crossbreeding, Inbreeding & Breed Conservation**

Chair: Kent Weigel, University of Wisconsin

Sagamore Ballroom 7

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<tr>
<td>8:30 AM</td>
<td>757</td>
<td>Genetic variation in the threshold of sensitivity to heat stress in Holsteins.</td>
<td>J. P. Sánchez*, R. Rekaya2, I. Aguilar2, and I. Misztal2,3, Universidad de León, Campus de Vegazana, León, Spain, University of Georgia, Athens, Instituto Nacional de Investigación Agropecuaria, Estación Las Brujas, Canelones, Uruguay.</td>
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<tr>
<td>8:45 AM</td>
<td>758</td>
<td>In situ goat conservation population and selection for parasite resistance.</td>
<td>J. M. Drakumak*, B. M. Johnson1, N. C. Beckford1, L. C. Nutt1, and T. M. Craig2, Prairie View A&amp;M University, Prairie View, TX, Texas A&amp;M University, College Station.</td>
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<tr>
<td>9:00 AM</td>
<td>759</td>
<td>Genetic diversity of US sheep breeds.</td>
<td>H. Blackburn*, S. Hulett1, S. Wildeus2, R. Stobart3, D. Bixby1, S. Ericsson1, W. Getz1, N. Cockett1, D. Matsas2, C. Welsh1, S. Spiller1, and W. M. Hamon4, ARS National Animal Germplasm Program, Ft. Collins, CO, ARS Grazing Lands Research, El Reno, OK, Virginia State University, Petersburg, University of Wyoming, Laramie, American Livestock Breeds Conservancy, Pittsboro, NC, Prairie View A&amp;M University, Prairie View, TX, Texas A&amp;M University, College Station.</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>760</td>
<td>Heterogeneity of founder-specific inbreeding depression on birth BW of Ripollesa lambs.</td>
<td>J. Casellas*, J. Piedra1, C. G. Gómez1, L. Varona1,2, Genética i Millora Animal, IRTA-Lleida, Lleida, Spain, Departamento de Ciencia Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, Departamento de Anatomía, Embriología y Genética Animal, Universidad de Zaragoza, Zaragoza, Spain.</td>
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<tr>
<td>9:30 AM</td>
<td>761</td>
<td>Type appraisal of Holsteins, Jerseys, and reciprocal crosses under two classification systems.</td>
<td>B. G. Cassell*, K. M. Olson1, and A. J. McAllister2, Virginia Polytechnic Institute and State University, Blacksburg, University of Kentucky, Lexington.</td>
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<td>9:45 AM</td>
<td>762</td>
<td>Break</td>
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<td>10:00 AM</td>
<td>763</td>
<td>Montbeliarde-sired crossbred cows compared to pure Holstein cows for production, SCS, days open, and body condition score during their first two lactations.</td>
<td>A. R. Hazel*, B. J. Heins, L. B. Hansen, A. J. Seykora, D. G. Johnson, and J. E. Romano, University of Minnesota, St. Paul.</td>
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<td>Number of services per conception, estimated calving interval and lactation length in New Zealand and Mexican Holstein cows in Torreon, Coahuila, Mexico, Case study.</td>
<td>T. B. Garcia-Peniche* and A. Aranda-Munguía, Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias, Paso del Toro, Veracruz, Mexico, Establo La Montaña, Torreon, Coahuila, Mexico.</td>
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<td>Puberty and conception in Holsteins, Jerseys and reciprocal crossbred heifers.</td>
<td>W. J. Silvia*, K. G. Hall1, C. M. Williams1, A. J. McAllister*, B. G. Cassell1, and S. P. Washburn1, University of Kentucky, Lexington, Virginia Polytechnic Institute and State University, Blacksburg, North Carolina State University, Raleigh.</td>
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<td>11:00 AM</td>
<td>767</td>
<td>Production, conformation, health, and fertility of backcross Holstein × Jersey cattle and their Holstein contemporaries.</td>
<td>K. A. Weigel*, P. C. Hoffman, C. Maltecca, and T. J. Halbach, University of Wisconsin, Madison.</td>
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8:30 AM
Introduction. R. Hill, University of Idaho.

8:40 AM 767 Mitochondrial efficiency in lines of mice divergently selected for heat loss. J. M. McDonald* and M. K. Nielsen, University of Nebraska, Lincoln.

9:10 AM 768 The molecular basis for feed efficiency in beef cattle. S. S. Moore*, E. L. Sherman¹, J. D. Nkrumah², F. D. Mujabi¹, Z. Wang¹, and P. Stothard¹, ¹University of Alberta, Edmonton, AB, Canada, ²Merial Limited, Duluth, GA.

9:40 AM 769 Associations between mitochondrial function and feed efficiency in poultry and livestock species. W. G. Bottje* and G. E. Carstens⁴, ¹University of Arkansas, Fayetteville, ²Texas A&M University, College Station.

10:10 AM 770 Physiological basis for residual feed intake. R. M. Herd* and P. F. Arthur², ¹NSW Department of Primary Industries, Armidale, Australia, ²NSW Department of Primary Industries, Camden, Australia.

10:40 AM 771 Physiological basis for residual feed intake in pigs. C. de Lange* and G. Vander Voort, University of Guelph, Guelph, ON, Canada.

8:30 AM A professional development opportunity in the use of mixed models for the analysis of common experimental designs in the animal sciences. Topic areas include repeated measures analysis, mixed model analysis of categorical data, growth curve modeling using random coefficient, nonlinear, and spline models, and power and sample size determinations for comparing alternative designs for continuous and categorical responses. All presented applications will be based on the new SAS software procedure PROC GLIMMIX.

8:30 AM 772 Bacteria composition, richness and diversity differ in colon digesta of piglets fed diets with different levels of protein and challenged with Escherichia coli K88. F. O. Opapeju¹, R. L. Payne², D. O. Krause¹, and C. M. Nyachoti¹, ¹University of Manitoba, Winnipeg, MB, Canada, ²Evonik-Degussa Corporation, Kennesaw, GA.

8:45 AM 773 Value of spray-dried egg in pig nursery diets. M. Song*¹, B. G. Harmon², M. T. Che¹, M. U. Steidinger⁴, and J. E. Pettigrew¹, ¹University of Illinois, Urbana, ²Raisplitter Feed Technology, Wildwood, MO, ³Swine Nutrition Services Inc., Forrest, IL.

9:00 AM 774 The use of dried bacterial cells in nursery pig diets. R. B. Hinson*, J. L. Usry², A. M. Gaines³, and G. L. Allee¹, ¹University of Missouri, Columbia, ²Ajinomoto Heartland LLC, Chicago, IL, ³The Maschhoffs Inc., Carlyle, IL.


9:30 AM 776 Effects of feeding excess crude protein on growth performance and carcass traits in finishing pigs. S. M. Williams*, J. D. Hancock, C. Feoli, S. Issa, and T. L. Gugle, Kansas State University, Manhattan.
Effects of adding an enhanced flavor to the creep feed on the proportion of piglets consuming creep feed and pre-weaning performance. R. C. Sulabo*1, J. M. DeRouchey1, M. D. Tokach1, C. D. Risley2, R. D. Goodband1, S. S. Dritz1, and J. L. Nelssen1, 1Kansas State University, Manhattan, 2Lucta USA Inc., Northbrook, IL.

Effects of organoleptic properties of the feed and diet complexity on nursery pig performance. R. C. Sulabo*1, J. M. DeRouchey1, M. D. Tokach1, C. D. Risley2, R. D. Goodband1, S. S. Dritz1, and J. L. Nelssen1, 1Kansas State University, Manhattan, 2Lucta USA Inc., Northbrook, IL.

Diet preference and growth performance in weanling pigs fed diets with Morinda citrifolia (noni). C. Feoli*1, J. D. Hancock1, K. C. Behnke1, and R. G. Godbee2, 1Kansas State University, Manhattan, 2Morinda Agricultural Products, Orem, UT.

Effects of Morinda citrifolia (noni) and diet complexity on growth performance in weanling pigs. C. Feoli*1, J. D. Hancock1, K. C. Behnke1, and R. G. Godbee2, 1Kansas State University, Manhattan, 2Morinda Agricultural Products, Orem, UT.

Cloning of Ningxiang porcine growth hormone gene and its construction respectively of prokaryotic and eukaryotic expression vector. W. C. Wang1, W. Y. Chu1, W. T. Gu1, M. M. Geng1, T. J. Li1, Y. L. Yin*1, and G. Y. Wu1,2, 1The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 2Texas A&M University, College Station.

SYMPOSIUM
Nonruminant Nutrition
Energy Systems and Alternative Energy Ingredients for Swine
Chair: Kevin Herkelman, Wenger’s Feed Mill Inc.
Sponsors: Archer Daniels Midland Company, European Association of Animal Production, Evonik Degussa Corp., and Novus International
105–106

Introduction. K. Herkelman, Wenger’s Feed Mill, Inc.

Recent developments in net energy research for pigs. J. Noblet*, INRA, Saint Gilles, France.

Practical application of the net energy system in swine nutrition. R.T. Zijlstra*1 and R. L. Payne2, 1University of Alberta, Edmonton, AB, Canada, 2Evonik-Degussa Corporation, Kennesaw, GA.

Impact of the biofuels industry on alternative ingredients available to swine. B. J. Kerr* and T. E. Weber, USDA-ARS-NSTL, Ames, IA.

Effects of feeding increasing levels of glycerol with or without distillers dried grains with solubles in the diet on grow-finish pig growth performance and carcass quality. J. Stevens*, A. Schinckel, M. Latour, D. Kelly, D. Sholly, B. Legan, and B. Richert, Purdue University, West Lafayette, IN.

Effects of increasing dietary glycerol and dried distillers grains with solubles on growth performance of finishing pigs. A. W. Duttinger*, M. D. Tokach1, S. S. Dritz2, J. M. DeRouchey1, J. L. Nelssen1, R. D. Goodband1, and K. J. Prusa2, 1Kansas State University, Manhattan, 2Iowa State University, Ames.


Ruminant Nutrition
Acidosis, DCAD and Acid-Base Metabolism
Chair: Bill Sanchez, Diamond V Mills
Sagamore Ballroom 2

The relationship between the severity of ruminal acidosis and the expression of genes associated with the absorption and metabolism of volatile fatty acids and glucose in ruminal tissue. G. B. Penner*, M. Taniguchi1, L. L. Guan1, K. A. Beauchemin2, and M. Oba1, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

9:00 AM 790 Effect of dietary cation-anion difference on feedlot performance, N mass balance, and manure pH in open feedlot pens. M. K. Luebbe*, G. E. Erickson, T. J. Klopfenstein, and J. R. Benton, University of Nebraska, Lincoln.

9:15 AM 791 Grain species and cultivars and ruminal acidosis. I. Determination of challenge level. I. J. Lean*1, A. R. Rabiee1, J. L. Black1, and R. H. King1, 1Bovine Research Australasia, Camden, NSW, Australia, 2John L. Black Consulting, Warrimoo, NSW, Australia, 3RHK Consulting, Essendon, Victoria, Australia.

9:30 AM 792 Grain species and cultivars and ruminal acidosis. II. Comparisons and validation of a near infra-red reflectance assay. I. J. Lean*1, A. R. Rabiee1, J. L. Black1, S. Nielsen3, and R. H. King4, 1Bovine Research Australasia, Camden, NSW, Australia, 2John L Black Consulting, Warimoo, NSW, Australia, 3NSW Department of Primary Industries, Orange, NSW, Australia, 4RHK Consulting, Essendon, Victoria, Australia.

9:45 AM 793 Influence of electrolyzed alkaline water on milk production in dairy cows. J. D. Ferguson*, D. Remsberg, and Z. Wu, University of Pennsylvania, Kennett Square.

10:00 AM 794 Timothy hays differing in dietary cation-anion difference affect the capability to maintain calcium homeostasis in dairy cows. V. S. Heron*, G. F. Tremblay2, and M. Oba1, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Quebec, QC, Canada.

Ruminant Nutrition
Energy and Carbohydrate Byproducts – Beef
Chair: Stacey Gunter, USDA-ARS-SPRRS
Sponsors: ASAS Foundation, and Mycogen
Sagamore Ballroom 4

8:30 AM 795 ASAS Centennial Presentation: Discovery and application of energetic principles to feeding systems for beef cattle. C. Ferrell*1 and J. Ohljen2, 1USDA, ARS, US Meat Animal Research Center, Clay Center, NE, 2University of California, Davis.

9:00 AM 796 ASAS Centennial Presentation: Discovery and application of energetic principles to feeding systems for beef cattle: Use of dynamic models. J. W. Ohljen* and C. L. Ferrell1, 1University of California, Davis, 2USDA, ARS, US Meat Animal Research Center, Clay Center, NE.

9:30 AM 797 Introduction of Early Career Award Winner

9:35 AM 797 ASAS Early Career Achievement Award Presentation: Advances in modeling ruminant nutrient utilization. E. Kebreab*, J. Dijkstra1, A. Bannink2, and J. France3, 1University of Manitoba, Winnipeg, MB, Canada, 2Wageningen University, Wageningen, the Netherlands, 3Wageningen University and Research Centre, Wageningen, the Netherlands, 4University of Guelph, Guelph, ON, Canada.

10:05 AM Q&A for Early Career Award Winner

10:15 AM 798 Effects of feeding high levels of byproducts in different combinations to finishing cattle. M. F. Wilken*, M. K. Luebbe, J. R. Benton, G. E. Erickson, and T. J. Klopfenstein, University of Nebraska, Lincoln.

10:30 AM 799 Nutrient digestibility and utilization by cattle consuming cotton gin mote as a replacement for forage. C. M. Welch* and B. J. Rude, Mississippi State University, Mississippi State.

10:45 AM 800 Beef steer intake and performance when fed whole cottonseed free-choice with hay. G. M. Hill*, M. H. Poore2, D. J. Renney1, and A. J. Nichols1, 1University of Georgia, Tifton, 2North Carolina State University, Raleigh.

801 Withdrawn by author.

11:00 AM 802 Influence of roughage source and level in feedlot diets containing wet distillers grains on ruminal metabolism and nutrient digestibility in steers. J. R. Benton*, G. E. Erickson, T. J. Klopfenstein, N. F. Meyer, and C. D. Buckner, University of Nebraska, Lincoln.


11:30 AM 804 Characterizing quality and composition of beef from cattle fed combinations of steam-flaked corn, dry-rolled corn, and dried corn distiller’s grains with solubles. P. L. Black*, G. L. Parsons1, M. K. Shelor1, M. E. Dikeman1, K. K. Karges2, M. L. Gibson3, and J. S. Drouillard4, 1Kansas State University, Manhattan, 2Dakota Gold Research Association, Sioux Falls, SD.
SYMPOSIUM  
Triennial Lactation Symposium joint with Lactation Biology  
9th ASAS-EAAP International Workshop on the Biology of Lactation in Farm Animals  
Chair: Geoffrey E. Dahl, University of Florida  
Sponsors: Elanco Animal Health, Monsanto Company, Pfizer Animal Health, and USDA-CSREES  
Sagamore Ballroom 3

8:30 AM  Introductions


9:30 AM  806  Mammary immunology and protection of the neonate. H. Salmon*, IASP, Lymphocyte et Immunité des Muquesuses, Nouzilly, France.


10:30 AM  808  Neonatal protection by an innate immune system of human milk consisting of oligosaccharides and glycans. D. S. Newburg*, Massachusetts General Hospital and Harvard Medical School, Boston, MA.

11:15 AM  809  Immune signaling during mammary development and involution. C. J. Watson*, University of Cambridge, Cambridge, UK.

12:00 PM  810  Effect of lipopolysaccharides on plasminogen activator activity and lactoferrin mRNA expression in a bovine mammary epithelial cell line. C. Pecorini, R. Rebucci, E. Fusi, F. Galante, L. Rossi, F. Cheli, and A. Baldi*, University of Milan, Milan, Italy.

12:15 PM  811  Pathogen-dependent variations in the innate immune response to intramammary infection. D. D. Bannerman*, USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD.

Ruminant Nutrition  
Feeding Behavior, Chewing and Digestibility  
Chair: John Wagner, Colorado State University  
Sagamore Ballroom 2


11:00 AM  815  Animal feed assessment quality by SMartNose®. T. Rapisarda, G. Belvedere, F. La Terra, A. Cannas, G. Licitra, and S. Carpino, CoRFiLaC Regione Siciliana, Ragusa, Italy.


11:30 AM  817  Depression in nutrient digestibility by lactating dairy cows when dry matter intake is expressed as a multiple of maintenance. D. P. Casper* and D. R. Mertens, Agri-King Inc., Fulton, IL.
SYMPOSIUM
Triennial Lactation Symposium joint with Lactation Biology
9th ASAS-EAAP International Workshop on the Biology of Lactation in Farm Animals
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Sagamore Ballroom 3

2:00 PM 818 Nutritional, hormonal and environmental effects on colostrum in sows. C. Farmer*1 and H. QuesnelF, 1Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, QC, Canada; 2Institut National de la Recherche Agronomique, UMR SENAH, Saint Gilles, France.


3:00 PM 820 Mastitis control on organic and traditional dairies. P. L. Ruegg*, University of Wisconsin, Madison.


4:00 PM 822 Management effects on colostrogenesis in small ruminants. N. Castro*, J. Capote2, R. M. Bruckmaier3, and A. Argüello1, 1Las Palmas de Gran Canaria University, Arucas, Spain; 2Canarian Agronomic Science Institute, La Laguna, Tenerife, Spain; 3University of Bern, Bern, Switzerland.

4:45 PM 823 Haptoglobin, cortisol, albumin/globulin (A/G) ratio and IGF-1 in goat kids around weaning. D. Magistrelli*, L. Pinotti, and F. Rosi, University of Milan, Milan, Italy.
Author Index

Numbers following names refer to abstract numbers: a number alone indicates an oral presentation, a T prior to a number indicates a Tuesday poster, a W indicates a Wednesday poster, a TH indicates a Thursday poster.

The author index is created directly and automatically from the 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>(1:00-3:00 pm)</td>
<td>2008 &amp; 2009 Program Committee Meeting</td>
<td></td>
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<tr>
<td>107-108</td>
<td>(3:00-5:00 pm)</td>
<td>Late Breaking/Hot Topics Abstract Session</td>
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<td>111</td>
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<td>Speaker Ready Room</td>
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<td>Presentation Pre-Loading Room</td>
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<td>Hospitality Room</td>
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<td>116</td>
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<td>SAD Midday Mixer</td>
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<td>117</td>
<td></td>
<td>(2:00-5:00 pm)</td>
<td>ASAS Retirees Gathering</td>
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<tr>
<td>Sagamore Ballroom 3, 4 &amp; 5</td>
<td></td>
<td>7:00 pm Opening Session</td>
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<tr>
<td>201</td>
<td>(10:00-11:00 am)</td>
<td>SAD Quiz Bowl Seating Test</td>
<td>Quiz Bowl holding room</td>
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<tr>
<td>202</td>
<td>(11:30 am-12:00 pm)</td>
<td>SAD Quiz Bowl Seating/ Preliminary Rounds (Room 1)</td>
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<tr>
<td>203</td>
<td></td>
<td>SAD Quiz Bowl Seating/ Preliminary Rounds (Room 2)</td>
<td>(5:30-6:00 pm) SAD Quiz Bowl Final Round</td>
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<td>Room</td>
<td>7:30 am - 9:30 am</td>
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<tr>
<td>Exhibit Hall C,D,E</td>
<td>Poster Presentations</td>
<td>Commercial Exhibits (7:30 am - 6:00 pm)</td>
<td>ALPHARMA Beef Cattle Nutrition and Beef Species Joint Symposium - Producing Quality Beef in a Bio-Based Economy</td>
<td>(4:00-6:00 pm) Exhibitor Reception</td>
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<tr>
<td>500 Ballroom</td>
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<tr>
<td>101-102</td>
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<td>103</td>
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<td></td>
<td>(12:30-1:00 pm) ASAS Graduate Student Business Meeting</td>
<td>(2:00-4:45 pm) Small Ruminant Symposium: The U.S. Goat Meat Industry and Recent Sheep and Goat Activities at the National Research Council of The National Academies</td>
</tr>
<tr>
<td>104</td>
<td>(9:30-10:15 am) ADSA Southern Section GS Competition; (11:00 am-12:30 pm) ADSA/ASAS Northeast Section GS Competition</td>
<td>(12:30-1:00 pm) ASAS Graduate Student Business Meeting</td>
<td></td>
<td>(5:00-6:00 pm) ADSA Town Hall Meeting</td>
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<tr>
<td>105-106</td>
<td>Nonruminant: Mineral Absorption: What is Known?</td>
<td></td>
<td>Nonruminant Nutrition: Protein and Amino Acids</td>
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<tr>
<td>107-108</td>
<td>Production, Management and the Environment: Measuring and Evaluating Environmental Stress</td>
<td></td>
<td>(2:00-4:30 pm) Nonruminant Nutrition: Mineral</td>
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<tr>
<td>109-110</td>
<td>Extension Education: Has the Land Grant College left the farm?</td>
<td></td>
<td>ADSA Southern Section Symposium &amp; Business Meeting</td>
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<td>115</td>
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<td>(10:30 am-12:30 pm) ARPAS Exam</td>
<td>ACAN Annual Meeting</td>
<td>(2:00-4:00 pm) ARPAS Exam</td>
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<td>116</td>
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<td>(12:30-2:00 pm) Michigan State University Lunch</td>
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<td>120</td>
<td></td>
<td>(9:30 am-12:15 pm) Dairy Food: Chemistry and Microbiology</td>
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<td>(2:00-4:00 pm) FASS Ag Guide Workshop</td>
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<tr>
<td>121</td>
<td></td>
<td>(9:30 am-12:00 pm) ADSA Dairy Foods GS Competition</td>
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<td>(1:30-5:00 pm) Dairy Foods: Advances in low fat cheese (DMI)</td>
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<tr>
<td>Sagamore Ballroom 2</td>
<td></td>
<td>(9:30 am-12:00 pm) Beef Species Symposium: The Evolution of Beef Cattle Genetic Evaluation</td>
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<td>(2:00-4:30 pm) ASAS Cell Biology Symposium: The Role of MicroRNA on Cell Function</td>
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<tr>
<td>Sagamore Ballroom 3</td>
<td></td>
<td>(9:30 am-12:15 pm) Meat Science: Meat Quality: Regulation of Intramuscular Fat Deposition</td>
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<td>(2:00-4:45 pm) Ruminant Nutrition and Production, Management &amp; Environment Joint Symposium: Designing Field Studies to Evaluate Nutrition Effects on Production, Reproduction and Health of Dairy Cows</td>
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<tr>
<td>Sagamore Ballroom 4</td>
<td></td>
<td>(9:30-11:30 am) Ruminant Nutrition: Forages</td>
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<td>(2:00-4:45 pm) Ruminant Nutrition: Growing Youngstock, Calves and Heifers</td>
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<td>Sagamore Ballroom 5</td>
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<td>Ruminant Nutrition: Minerals and Vitamins</td>
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<td>Sagamore Ballroom 6</td>
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<td>Breeding &amp; Genetics: Current Issues in Dairy Cattle Breeding</td>
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<td>Breeding &amp; Genetics: Training of Future Animal Breeders</td>
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<tr>
<td>Sagamore Ballroom 7</td>
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<td>Physiology: Nutrition and Growth, Reproductive and Lactational Performance</td>
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<tr>
<td>201</td>
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<td>(9:30-10:30 am) SAD Judging of Yearbooks, Scrapbooks, Annual Reports</td>
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<tr>
<td>202</td>
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<td>(9:30-10:30 am) SAD Interviews for Outstanding Student and Advisor Awards</td>
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<tr>
<td>203</td>
<td>(8:30-9:15 am) SAD Business Meeting; (9:30-10:45 am) SAD Activities Symposium; (11:00 am-12:15 pm) SAD Undergraduate Presentations-Dairy Foods</td>
<td>(12:45-3:00 pm) SAD Undergraduate Presentations-Dairy Production</td>
<td>(3:15-5:15 pm) SAD Undergraduate Presentations-Original Research</td>
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<tr>
<td>204</td>
<td></td>
<td>(9:30-11:30 am) ADSA Dairy Production GS Competition</td>
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<td>(2:00-4:00 pm) Companion Animals: Comparative Animal Biology; (4:00-5:00 pm) Companion Animals: Student Competition</td>
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<tr>
<td>206</td>
<td>(9:30-11:00 am) Animal Health I; (11:00 am-12:30 pm) Animal Health II</td>
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<td>Animal Health III</td>
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<td>Exhibits Open (7:30 am - 5:00 pm)</td>
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<tr>
<td>500 Ballroom</td>
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<td>Breeding &amp; Genetics Symposium: Genome Wide Selection</td>
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<td>Ruminant Nutrition Symposium: Glycerin as a Feed for Ruminants</td>
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<tr>
<td>500 Reception Room</td>
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<td>(11:45 am-2:00 pm)</td>
<td>(2:00-3:00 pm) ADSA-SAD Award and Club Photos</td>
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<tr>
<td>101-102</td>
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<td>Bioethics Symposium: How do we integrate bioethics into our food animal system?</td>
<td>(2:00-4:30 pm) Animal Behavior and Well-Being: Livestock: Swine and Sheep</td>
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<tr>
<td>103</td>
<td>(9:30 am-12:00 pm)</td>
<td>Forages &amp; Pastures Symposium: Forage-based systems for beef and dairy cattle production: Regional challenges and opportunities</td>
<td>(2:00-3:45 pm) Forages and Pastures II</td>
<td>(5:00-6:00 pm) Racing to Indy: The ASAS Open Forum</td>
</tr>
<tr>
<td>104</td>
<td>Horse Species I</td>
<td></td>
<td>Horse Species II</td>
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<tr>
<td>105-106</td>
<td>(9:30-11:30 am) Nonruminant Nutrition: Past and Future of Nonruminant Nutrition; (11:30 am-12:30 pm) Nonruminant Nutrition: Feed Additives I</td>
<td></td>
<td>Companion Animals: Perceptions and Implications of Companion Animals in Research and Teaching - Domestically and Globally</td>
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<tr>
<td>107-108</td>
<td></td>
<td>Swine Species</td>
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<td>Small Ruminant: Sheep</td>
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<tr>
<td>109-110</td>
<td>(9:30 am-12:00 pm) Production, Management and the Environment: Young Stock, Environment and Management</td>
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<td>Extension Education Symposium: From 40 acres and a mule to today: Historical perspective of Extension programming</td>
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<td>(9:30-11:30 am) ARPAS Exam</td>
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<td>116</td>
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<td>NE ASAS/ADSA Business Meeting &amp; Award Luncheon</td>
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<tr>
<td>120</td>
<td>(9:30 am-12:15 pm) Teaching/ Undergraduate and Graduate Education Symposium: The Changing Student and Influence of Technology on Learning</td>
<td>Dairy Foods Programming Meeting</td>
<td>(2:00-3:00 pm) ADSA Foundation Scholar Lecture – Production; (3:30-5:00 pm) ASAS JAS Forum (Division/Associate Editors and Authors)</td>
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</tr>
<tr>
<td>121</td>
<td>(9:30-10:30 am) ADSA Foundation Scholar Lecture – Dairy Foods; (10:30-11:30 am) Danisco International Dairy Science Award Lecture; (11:30 am-12:30 pm) Dairy Foods Division Business Meeting</td>
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<td>Dairy Foods Symposium: Changes and challenges of probiotics in dairy products</td>
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<tr>
<td>Sagamore Ballroom 1</td>
<td>Animal Health IV</td>
<td></td>
<td>(2:00-4:15 pm) Meat Science and Muscle Biology: Beef Quality</td>
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<td>Room</td>
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<td>Sagamore Ballroom 3</td>
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<td>(9:30 am-12:15 pm)</td>
<td>Ruminant Nutrition: Fats and Fatty Acids</td>
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<td>Sagamore Ballroom 4</td>
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<td>Physiology and Endocrinology Symposium: Emerging Concepts on Dietary Components that Influence the Physiology and Endocrinology of Domestic Farm Animals</td>
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<td>Sagamore Ballroom 5</td>
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<td>Growth and Development: Historical Perspective and Future Direction</td>
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<td>Sagamore Ballroom 6</td>
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<td>(9:30 am-12:15 pm)</td>
<td>Ruminant Nutrition: Rumen Fermentation and Microbiology</td>
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<td>Sagamore Ballroom 7</td>
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<td>(9:30 am-11:30 am)</td>
<td>Meat Science and Muscle Biology: Measuring and Manipulating Pork Quality; (11:30 am-12:45 pm) Physiology and Endocrinology: Effects of Environment and Handling on Performance</td>
<td>(2:00-4:00 pm) ASAS Graduate Student Symposium: Academia, Industry, Government, or None of the Above: Graduation is coming, what next?</td>
</tr>
<tr>
<td>201</td>
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<td>ASAS Graduate Student Lunch and Learn: An Industry Perspective on How to Get a Job</td>
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<td>202</td>
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<td>(11:30 am-12:30 pm) ARPAS/PAS Editorial Board Meeting</td>
<td>ADSA DF Division Milk Proteins &amp; Enzyme Committee</td>
<td>(2:30-3:30 pm) ADSA-SAD Committee Meeting - Old and New Officers and Advisors</td>
</tr>
<tr>
<td>203</td>
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<td>(8:30-9:30 am) SAD Business Meeting and Election of Officers; (9:30-11:00 am) SAD Student Career Symposium; (11:30 am-12:30 pm) ADSA Production Division Business Meeting</td>
<td></td>
<td>(2:00-4:15 pm) Teaching/Undergraduate and Graduate Education: Teaching in the Animal Sciences</td>
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<tr>
<td>204</td>
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<td>Food Safety: Assuring Food Safety in a Globalized Market</td>
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<td>(2:00-4:30 pm) Lactation Biology I</td>
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<td>205</td>
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<td>(9:30 am-12:00 pm) Small Ruminants: Goats and Sheep</td>
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<td>(2:00-3:45 pm) Production, Management and the Environment: Disease, Management and Environment</td>
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# Program at a Glance

## Thursday, July 10

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<thead>
<tr>
<th>Room</th>
<th>7:30 am - 9:30 am</th>
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<th>Evening</th>
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<tbody>
<tr>
<td>Exhibit Hall C,E</td>
<td>Poster Presentations</td>
<td>(9:30 am-5:00 pm)</td>
<td>(10:30 am-1:30 pm)</td>
<td>Forages and Pastures: Centennial Presentations (10:30 am-12:30 pm)</td>
<td>(10:30 am-12:30 pm)</td>
<td>500 Reception Room</td>
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<td>500 Reception Room</td>
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<td>Mixed Models Workshop</td>
<td>Swine Species Symposium</td>
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<td>101-102</td>
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<td>(10:30 am-12:30 pm)</td>
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<td>Forages and Pastures III</td>
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<td>103</td>
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<td>Breeding and Genetics: Current Issues in Swine Breeding</td>
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<td>Breeding and Genetics: Computational Issues in Genomic Analysis</td>
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<td>Pre-Loading Room</td>
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- **Posters**
- **EXHIBIT HALL**: Open (7:30 am-3:00 pm); Exhibit Teardown (3:00-6:00 pm)
- **500 Reception Room**
- **103**
- **104**
  - Companion Animals: Exotic Animal Nutrition (9:30 am-10:30 am)
- **105-106**
  - Swine Species Symposium: Nonruminant Nutrition: Energy Utilization (10:30 am-12:30 pm)
- **107-108**
  - Breeding and Genetics: Current Issues in Swine Breeding (10:30 am-12:30 pm)
- **109-110**
  - Nonruminant Nutrition: Feed Additives II (10:30 am-12:30 pm)
- **111**
  - Speaker Ready Room
- **112**
  - Presentation Room
- **113**
  - Pre-Loading Room
<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Companion Animal Reception</th>
<th>Program Details</th>
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</table>
| 7:30 am - 9:30 am | 115  | 116                         | Room 7:30 am - 9:30 am 9:30 am - 10:30 am 10:30 am - 12:30 pm 12:30 pm - 2:00 pm 2:00 pm - 5:00 pm Evening  
| 9:30 am - 10:30 am | 120  | 121                         | (2:00-4:00 pm) Meat Science and Muscle Biology: Meat Science Research, Past, Present, and Future  
| 10:30 am - 12:30 pm | 121  | 122                         | (2:00-4:00 pm) Meat Science and Muscle Biology: Meat Science Research, Past, Present, and Future  
| 2:00 pm - 5:00 pm  | 123  | 124                         | (2:00-4:00 pm) Meat Science and Muscle Biology: Meat Science Research, Past, Present, and Future  
| Evening      | 125  | 126                         | (2:00-4:00 pm) Meat Science and Muscle Biology: Meat Science Research, Past, Present, and Future  

Program at a Glance

Thursday, July 10
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<thead>
<tr>
<th>Time</th>
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<td>10:30 am - 12:30 pm</td>
<td>Sagamore Ballroom 5</td>
<td>Ruminant Nutrition: Rumen Fermentation Modifiers</td>
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<tr>
<td>9:30 am - 10:30 am</td>
<td>Sagamore Ballroom 6</td>
<td>Ruminant Nutrition: Carbohydrate Byproducts - Dairy</td>
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<td>7:30 am - 9:30 am</td>
<td>Sagamore Ballroom 7</td>
<td>Lactation Biology III</td>
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<td>2:00 pm - 5:00 pm</td>
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<td>10:30 am - 12:15 pm</td>
<td>Sagamore Ballroom 5</td>
<td>Feed Analysis Consortium</td>
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<td>10:30 am - 12 pm</td>
<td>Sagamore Ballroom 6</td>
<td>Lactation Biology II</td>
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<td>7:30 am - 9:30 am</td>
<td>Sagamore Ballroom 7</td>
<td>The DC Connection: Science Policy, Research Support, and the Professional Animal Scientist</td>
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<tr>
<td>10:30 am - 12:15 pm</td>
<td>Sagamore Ballroom 5</td>
<td>(12:30-2:30 pm) Feed Analysis Consortium</td>
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<tr>
<td>10:30 am - 12:00 pm</td>
<td>Sagamore Ballroom 5</td>
<td>(12:00-4:30 pm) Extension Education - all species</td>
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<tr>
<td>10:30 am - 12:15 pm</td>
<td>Sagamore Ballroom 6</td>
<td>(10:30 am-12:15 pm) Physiology and Endocrinology: Synchronization of Estrus in Cattle</td>
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<tr>
<td>10:30 am - 12 pm</td>
<td>Sagamore Ballroom 7</td>
<td>(10:30 am-12 pm) Lactation Biology II</td>
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<tr>
<td>7:30 am - 9:30 am</td>
<td>Sagamore Ballroom 7</td>
<td>(9:30-10:00 am) ADSA Business Meeting</td>
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</table>
## Program at a Glance
### Friday, July 11

<table>
<thead>
<tr>
<th>Room</th>
<th>8:30 am - 11:30 am</th>
<th>1:00 pm - 5:00 pm</th>
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<tbody>
<tr>
<td>101-102</td>
<td>Animal Behavior and Well-Being: Beef and Dairy Cattle</td>
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<tr>
<td>103</td>
<td>Mixed Models Workshop (day 2)</td>
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<tr>
<td>107-108</td>
<td>(8:30-11:00 am) Nonruminant Nutrition: Protein and Feed Additives</td>
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<tr>
<td>Sagamore Ballroom 1</td>
<td>Growth and Development: Symposium: The molecular basis for feed efficiency</td>
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<tr>
<td>Sagamore Ballroom 2</td>
<td>(8:30-10:15 am) Ruminant Nutrition: Acidosis, DCAD and acid-base metabolism; (10:15-11:45 am) Ruminant Nutrition: Feeding behavior, chewing and digestibility</td>
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<tr>
<td>Sagamore Ballroom 3</td>
<td>(8:30 am-5:00 pm) Triennial Lactation Symposium</td>
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<tr>
<td>Sagamore Ballroom 4</td>
<td>(8:30-11:45 am) Ruminant Nutrition: Energy and Carbohydrate Byproducts - Beef</td>
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<tr>
<td>Sagamore Ballroom 7</td>
<td>Breeding and Genetics: Dairy, Sheep &amp; Goat - Crossbreeding, Inbreeding &amp; Breed Conservation</td>
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<tr>
<td>111</td>
<td>Speaker Ready Room</td>
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<tr>
<td>112</td>
<td>Presentation Pre-Loading Room</td>
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<tr>
<td>113</td>
<td>Hospitality Room</td>
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</tbody>
</table>
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Future Meeting Dates

2009
Montreal, Quebec Canada
(ADSA, ASAS, CSAS, AMPA)
July 12-16, 2009

2010
Denver, CO
(ADSA, ASAS, PSA, Western ASAS)
July 11-15, 2010