July 10-14, New Orleans, Louisiana

2011 JAM
JOINT ANNUAL MEETING

Conference Information and Scientific Program

http://adsa.asas.org/meetings/2011
WELCOME to JAM 2011!

Welcome to the Big Easy and world’s leading scientific meeting on animal agriculture and animal food products, the Joint Annual Meeting (JAM) between the American Dairy Science Association® (ADSA®) and the American Society of Animal Science (ASAS). A record number of abstracts (2171) for a two-society meeting await you, as do a total of 47 symposia, pre-conference events, and workshops. Add in the networking with colleagues and scientists from more than 55 countries and the opportunity to visit with close to a hundred exhibitors displaying the most current technologies and products, and you have the most comprehensive educational experience possible. Take advantage of the professional development and opportunities for cross-pollination of ideas while you renew old friendships and establish new ones. Activities start with the American Society for Nutrition (ASN)-ASAS-ADSA full-day symposium on Saturday, followed by the Triennial Lactation Symposium, the late-breaking research session, student events, and the opening session and reception on Sunday. Then, be sure to take time out to savor and enjoy what many feel is the most unique city in America, as we do our part to help support the city and the people of New Orleans.

The opening session will feature an introduction to the culture and agriculture of Louisiana and a special performance by the iconic Preservation Hall Jazz Band. Information in this program book highlights some of what awaits you in New Orleans and the infamous French Quarter and Bourbon Street areas.

The program committees have worked hard to assemble an outstanding set of symposia and presentations. Thank you to the chairs and members of the program committees for their diligent work to review abstracts and plan sessions for a unique and timely scientific program. We especially thank the Overall Program Committee—Dave Casper (chair), Clint Krehbiel (vice-chair), Tony Capuco (vice-chair), and Jack Whittier (vice-chair)—for their leadership and contributions to the success of this meeting. The scientific program will commence on Monday morning and conclude by noon on Thursday. Monday, Tuesday, and Wednesday sessions kick off at 7:30 am with 2 hours of posters before the oral presentations begin.

Be sure to attend the award programs recognizing members of our societies for excellence in teaching, research, outreach, and service. The ASAS awards program will take place on Monday evening at 7:00 pm and the ADSA awards program will take place on Tuesday at 7:00 pm. Following the awards program on Tuesday is an ice cream social for all attendees and their families to visit together and congratulate both ADSA and ASAS award winners.

The JAM is a major undertaking that requires continuous yearlong planning. It would not be possible without the dedicated work of many people. In addition to the program committees, we thank the FASS staff, with a special thanks to Jennifer Gavel, the JAM Program Coordinator, for making this event happen. However, the event would not be possible without the participation of you and the thousands of animal and dairy scientists who contribute to the scientific content of this meeting. We thank you for sharing your research and advancing our knowledge in the field of animal and dairy sciences.

We hope you enjoy this meeting and the many opportunities for scientific and social interaction it affords. Please be sure to attend the Global Networking Reception on Wednesday afternoon—open to all JAM attendees—to visit with friends and attendees from around the world. Catherine Woteki, Under Secretary for Research, Education, and Economics at the USDA, will speak at the reception. The JAM is a great manifestation of what it means to be a member of our societies. If you are not a member, please consider joining ADSA, ASAS, or both.
Important Message

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

Thank you for your cooperation.
General Meeting Information

Location

The meeting will be held at the New Orleans Ernest N. Morial Convention Center and area hotels. The convention center is ideally located near the famed French Quarter and the well-known Garden District. This year, JAM will run a shuttle bus service between the headquarter hotels and the convention center.

Schedule of Events

The 2011 ADSA-ASAS JAM will be held July 10–14 (Sunday through Thursday). The opening session will be held on Sunday evening, July 10; scientific sessions will begin Monday morning, July 11, and run through noon on Thursday, July 14.

The American Society for Nutrition (ASN), ASAS, and ADSA are collaborating on a one-day pre-conference event: Agri-Medical Research: Providing Dual Benefit for Agriculture and Human Health on Saturday, July 9.

The Triennial Lactation Symposium/Biology of Lactation of Farm Animals: Lactation Biology Training for the Next Generation—A tribute to Dr. H. Allen Tucker will be held on Sunday, July 10.

The 2011 opening session will feature the world-renowned Preservation Hall Jazz Band! New Orleans is known for jazz music, and Preservation Hall is a quintessentially New Orleans jazz band. Don’t miss an opportunity to see this band live. The complete schedule of events can be found on page 35 of this program, or online at http://www.adsa.asas.org/meetings/2011/. Watch the website for updates.

Program Format for 2011

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

Meeting rooms will be equipped for electronic presentations and preloaded sessions. A cyber café will be available for attendees to keep up to date while at the meeting.

Registration Hours

Registration will be located in Lobby I2 of the New Orleans Ernest N. Morial Convention Center. Registration hours for the 2011 ADSA-ASAS Joint Meeting will be as follows:

Saturday, July 9 (preregistered only) .................................................. 3:00 pm–5:00 pm
Sunday, July 10 ................................................................. 7:00 am–7:00 pm
Monday, July 11 ........................................................................ 6:30 am–5:15 pm
Tuesday, July 12 ........................................................................ 7:00 am–5:15 pm
Wednesday, July 13 .................................................................. 7:00 am–5:15 pm
Thursday, July 14 ..................................................................... 8:00 am–1:00 pm
Important Phone Numbers

Convention Center Registration Desk . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (504) 670-4000
Sheraton New Orleans (ASAS HQ) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (504) 525-2500
Marriott New Orleans (ADSA HQ). . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (504) 581-1000
Westin New Orleans Canal Place (Student HQ) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (504) 566-7006
New Orleans Marriott Convention Center . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . (504) 613-2888

Media Check-In

Please check in at the Registration Desk in Lobby I2 of the New Orleans Ernest N. Morial Convention Center.

Speaker Ready Room

The Speaker Ready Room is located in Room 284 of the New Orleans Ernest N. Morial Convention Center. This room will be available for speakers from 7:00 am to 5:00 pm on each day of the meeting.

Hospitality Lounge

A hospitality lounge will be located in Room 285 of the New Orleans Ernest N. Morial Convention Center. This lounge will offer attendees an area to relax, network, and catch up with old friends. The hospitality lounge is also a great meet-up place when departing the convention center as a group.

Business Center

In January 2011, the New Orleans Ernest N. Morial Convention Center celebrated the grand opening of its new, full-service location of The UPS Store. The UPS Store provides show management, attendees, and exhibitors a full range of services under a nationally recognized brand. In addition to domestic and international shipping, The UPS Store offers printing and document services, full-service packing and shipping, computer rental and mail receiving service. The UPS Store at the Convention Center is located in Lobby F. The phone number for The UPS Store is 504-670-8941.

Presentation Information

Oral and Invited Speakers

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

Onsite Upload Information

Onsite upload: Onsite presentation upload will be available; files can be delivered to the Preload Room (Room 283) at the convention center (Sat: 3:00 to 5:00 pm; Sun-Wed: 7:00 am to 5:00 pm; Thur: 7:00 am to Noon). Presentations must be uploaded by 5:00 pm on the day before your scheduled presentation. Files will not be accepted via e-mail. No presentations will be loaded while the session is in progress or between presentations.

Poster Presentations

We have dedicated a two-hour block each morning to poster presentations. The “open poster” sessions will be from 7:30 to 9:30 am Monday, Tuesday, and Wednesday in the Convention Center, Hall I2J.
Each poster presentation will be available for public viewing for the entire day, with the presenting authors present during the open posters time (7:30–9:30 am). All posters must be mounted on the board 30 minutes before the beginning of the day’s session (poster sessions begin at 7:30 am so posters must be mounted on boards by 7:00 am) and must list the paper number and corresponding day. The exhibit hall will open at 6:30 am, Monday through Wednesday. Posters must be removed after 5:00 pm each day. Any posters remaining after 5:30 pm will be removed by the convention center staff and discarded.

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

Locating the Correct Poster Board

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

Camera, Video Camera, and Cell Phone Policy

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

ARPAS Continuing Education Units

The 2011 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 credits)

Many of the symposia at the 2011 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 http://www.adsa.asas.org/meetings/2011/. Information regarding RACE can be found at www.aavsb.org.

Job Resource Center

The ADSA-ASAS Job Resource Center is located in the exhibit hall. The job announcements and CVs will be organized into the following categories for posting: Animal Behavior and Well-Being; Animal Health; Animal Breeding; Companion Animals; Extension; Food Safety; Food Science; Forages and Pastures; Genetics; Growth and Development; International Animal Agriculture; Lactation; Meat Science and Muscle Biology; Nonruminant Nutrition; Pharmacology and Toxicology; Physiology and Endocrinology; Production and Management; Ruminant Nutrition; and Teaching.

ASAS E-Career Tool Now Available Online

Whether you are an employer looking to fill a position or a potential employee looking for a job, the ASAS E-Career Tool has been developed to facilitate this communication. The ASAS E-career tool is free to use and very user friendly.
Employers can take advantage of the “search employee” function to identify potential candidates and see where and when they will be presenting their work at the 2011 ADSA-ASAS Joint Annual Meeting. Job seekers may upload their CVs and cover letters for potential employers to peruse.

ASAS is excited to bring this feature to Joint Annual Meeting attendees once again, and we hope you will take full advantage of this valuable tool! Visit http://adsa.asas.org/meetings/2011/ecareer.asp for more information.

Cyber Café

Keep in touch with work, family, and friends during JAM at the cyber café. Located in exhibit hall, the cyber café is available to all meeting attendees. The cyber café will also have a computer with a printer for limited printing during the meeting.

Headquarters Hotels

**Sheraton New Orleans**  
ASAS Headquarter Hotel  
500 Canal St  
New Orleans, LA 70130

**Westin New Orleans Canal Place**  
Student Headquarter Hotel  
100 Rue Iberville  
New Orleans, LA 70130

**Marriott New Orleans**  
ADSA Headquarter Hotel  
555 Canal St  
New Orleans, LA 70130

**New Orleans Marriott Convention Center**  
Official JAM Hotel  
859 Convention Center Blvd  
New Orleans, LA 70130

Welcome to New Orleans

Transportation in New Orleans

The JAM hotels and the convention center are approximately 30 minutes by taxicab from Louis Armstrong New Orleans International Airport (MSY). The one-way taxi fare from the airport will be $33.00 (current as of the time of printing). A shuttle service (Airport Shuttle) is also available; go online to book a shuttle in advance (http://www.airportshuttleneworleans.com/). The standard rate is $38.00 round-trip or $20.00 one way, with a $5.00 discount for purchasing a ticket online.

This year, we will offer a shuttle service between all official JAM hotels and the Ernest N. Morial Convention Center. **Please watch for the JAM shuttle area and signage with shuttle schedules in the lobby of your hotel.**

The Convention Center is in the area known as the Warehouse District—a great central location for everything in the downtown area. Many people choose to walk the area, but three streetcar lines can help you get around if you prefer. Each trip on the streetcar costs $1.25. Pick up a visitor guide or French Quarter walking brochure at the convention center for more information on ways to get around New Orleans.
New Orleans Sightseeing Options

From the New Orleans Convention and Visitors Bureau (CVB):

“What to do in New Orleans? The answer is simple yet resounding—do as the New Orleanians do: indulge, savor, and celebrate. Indulge your senses, savor New Orleans’ rich cultural experience, and celebrate everything that—even after 203 years of the greatest achievements and the steepest challenges—still makes New Orleans America’s most unique, authentic, and enthralling destination.”

Ten Things You Must Do in New Orleans:

*Experience the French Quarter*
The historic French Quarter covers more than 100 city blocks of art, dining, shopping, entertainment, and architectural treasures.

*Take a Culinary Journey*
Experience America’s most delicious city. You’ll wonder why everyone doesn’t celebrate life this way.

*Take a Musical Journey*
No city loves music more than New Orleans. The rhythms fill the streets, clubs, churches, and concert halls. Don’t miss a beat!

*Museums: A Feast for the Eyes*
New Orleans is a city rich in living history, traditions, and customs that are woven into the fabric of our everyday life.

*Culturally and Artistically Speaking*
The New Orleans Arts District and Magazine Street are vibrant, diverse neighborhoods alive with galleries, shopping, dining, and special events.

*Explore the Outdoors and More*
From the Zoo, Aquarium, and Insectarium to year-round golfing, fishing and more, New Orleans is a true urban resort.

*Let Us Entertain You*
Entertainment, culture, and performing arts options are as unique as the city itself. From comedy to the symphony, enjoy it all!

*A Trip with History*
Ride the famous St. Charles Avenue streetcar line and enjoy the convenience of the Canal Street and Riverfront lines.

*Don’t Let the Parade Pass You By!*
Learn about the history, traditions, and pageantry of Mardi Gras and see how the famous floats are constructed.

*Take New Orleans Home*
All styles have their place here, from exquisite antiques to funky fashions. Find the perfect take-home memory from your visit to the Crescent City.

Visit the CVB (http://www.neworleanscvb.com/) for more ideas on what to do for fun in the Big Easy!
Special Events

SAD Student Tour: Honey Island Swamp Tour (Slidell, Louisiana)
Saturday, July 9
1:30 – 5:15 pm
Bus departs from the Westin
The bus will depart from the Westin Hotel (student HQ), traveling 45 minutes north to Slidell, Louisiana, where we’ll board a small boat for a two-hour tour of one of the few remaining preserved wetlands in Louisiana. We will share the wetlands with alligators, raccoons, owls, wild boars, nutria, snakes, turtles, black bears, bald eagles, and many other species. Price includes tour ticket and transportation.

SAD Student Informal Mixer: French Quarter Walking Tour and Dinner
Saturday, July 9
7:00 pm
Meet in Westin Lobby
Meet in the lobby of the Westin at 7:00 pm. We’ll walk as a group through the French Quarter and experience some authentic New Orleans cuisine.

Open Meeting: Becoming an ADSA Volunteer Leader
Sunday, July 10
11:30 am – 12:30 pm
Marriott New Orleans, Galerie 6
Why become an ADSA Volunteer Leader? Come to this meeting to find out! Whether you want to get started as a volunteer or are already serving on an ADSA committee, this meeting will help you understand the benefits of leadership, what ADSA is doing, where ADSA is headed, and how you can help us get there.

SAD Midday Mixer and Lunch
Sunday, July 10
12:00 – 1:00 pm
Convention Center, 395-396
Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends. Lunch included. Registration is limited to undergraduate students and advisors.

JDIP Meeting
Sunday, July 10
1:00 – 6:00 pm
Marriott New Orleans, Studio 1-3
Join with Johne’s Disease Integrated Program (JDIP) members and others with an interest in Johne’s disease to learn more about JDIP, get updates on current work in each of JDIP’s Core and Project areas, and provide input on future plans. In addition to Sunday’s meeting, Johne’s related abstracts will be presented in poster and oral presentation sections as part of the JAM Animal Health–Johne’s/JDIP program. All JAM registrants are welcome to attend.

Graduate Student Grant Writing Workshop: Learning to Write the Competitive Grant Proposal for Research, Education, and Extension in Animal Agriculture
Sunday, July 10
4:30 – 6:30 pm
Convention Center, 386-387
With a focus on writing grants from the perspective of a graduate student, Dr. Mark Mirando and Dr. Margo Holland, both with the USDA National Institute of Food and Agriculture, will co-present a seminar on learning the competitive grant process. Dr. Mirando will focus on the competitive grant proposal and Dr. Holland will present on the NIFA fellowship program. This program is free and open to all graduate students, but preregistration is required.
**SAD-Dairy Quiz Bowl Final Round**  
*Sunday, July 10*  
*5:30 – 6:00 pm*  
*Convention Center, 397*

On Sunday, university teams from across the US will compete in the ADSA Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The Student Affiliate Division (SAD) invites you to join them for the excitement of the final round of competition as the top two schools go head-to-head for the title of 2011 Dairy Quiz Bowl Winning Team.

**Opening Session**  
*Sunday, July 10*  
*7:00 – 8:15 pm*  
*Convention Center, Conference Auditorium*

Come help us kick off the 2011 Joint Annual Meeting at the opening session. We will be entertained by New Orleans’ own Preservation Hall Jazz Band.

**Opening Reception**  
*Sunday, July 10*  
*8:15 – 10:00 pm*  
*Convention Center, La Nouvelle Orleans*

Wind down the evening by joining us after the opening session for food, drinks, and some long-awaited socializing time with colleagues and friends.

**ASAS Graduate Student Open Forum**  
*Monday, July 11*  
*12:00 – 1:00 pm*  
*Convention Center, 388*

The ASAS Graduate Student Directors invite all ASAS graduate student members to an open forum on Monday, July 11. This forum has been established for three purposes: (1) to allow for representatives from graduate student organization to interact and exchange ideas to bring back to their respective universities; (2) to provide an opportunity for graduate students to voice their opinions and concerns on what the society can do to improve services to graduate students; and (3) to inform students about the activities and services ASAS has to offer graduate students and early career professionals.

**ADSA Inaugural Graduate Student Division Business Meeting**  
*Monday, July 11*  
*3:30 – 5:00 pm*  
*Convention Center, 397*

Attend the inaugural business meeting of the ADSA Graduate Student Division to meet the officer team and fellow graduate students, ratify the constitution, and provide input on activities for the division.

**Exhibitor Reception**  
*Monday, July 11*  
*4:00 – 6:00 pm*  
*Convention Center, Exhibit Hall I2J*

Unwind after a busy first day 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.

**ASAS Awards Program**  
*Monday, July 11*  
*7:00 – 8:30 pm*  
*Sheraton New Orleans, Napoleon ABC*

All meeting participants, families, and friends are welcome to attend the ASAS awards program. Please join us at this special event to recognize and congratulate the 2011 ASAS award winners.
ADSA Graduate Student Mixer  
**Monday, July 11**  
**8:30 – 9:30 pm**  
**Location TBD**  
Join us to learn about the newly formed division, meet your fellow ADSA graduate students, and catch up with others at a New Orleans restaurant. Preregistration required.

SAD Student Dance  
**Monday, July 11**  
**9:00 pm**  
**Westin Hotel, Crescent Ballroom, 11th floor**  
Celebrate a great week at the JAM and rock the night away with old and new friends. Good music, good dancing, good friends—it doesn’t get any better than this! Cash bar and snacks will be available. Don’t miss this one—it’s always the highlight of the meeting!

ADSA Graduate Student Career Development Workshop with Joe Tringali  
**Tuesday, July 12**  
**9:15 – 11:00 am**  
**Convention Center, 392**  
Join Joe Tringali as he presents on two topics of interest to graduate students: “Job search economics—Considerations beyond the salary” and “Selling yourself to the life sciences industry.” Joe is a frequent career presenter at FASEB meetings and a recruiter for many biotech and pharmaceutical companies. **All graduate students are welcome.**

SAD Career Roundtable  
**Tuesday, July 12**  
**9:30 – 11:00 am**  
**Convention Center, 394**  
Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their CVs. Students should also plan time to visit industry reps in the exhibit hall for information about internships and job opportunities.

Spouse Event 1: Oak Alley Plantation Tour  
**Tuesday, July 12**  
**10:00 am – 2:30 pm**  
**Depart from the Convention Center**  
Feel the gentle breeze of Southern hospitality on a tour that takes you back to the glory of the Old South! Experience a bygone era in one of the South’s most beautiful settings—Oak Alley Plantation, built in 1839. Marvel at the unbelievable view of a quarter-mile long alley of 28 magnificent Oak trees, each more than 250 years old. Perhaps the most photographed plantation ever, Oak Alley has been the setting for such motion pictures as “Interview with a Vampire,” “Primary Colors” and the wedding of Bo and Hope from the daytime soap opera, “Days of our Lives.” Your guided tour will reveal the fascinating stories of the home and its history. Lunch is not included but snacks and drinks are available at the plantation.

SAD Awards Luncheon  
**Tuesday, July 12**  
**11:45 am – 2:00 pm**  
**Convention Center, 395-396**  
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 Foundation Heritage Luncheon  
**Tuesday, July 12**  
**12:30 – 2:00 pm**  
**Convention Center, 281-282**  
The ASAS Foundation has chosen honorees for the second annual ASAS Foundation Heritage Luncheon to be held at the 2011 ADSA-ASAS Joint Annual Meeting. The 2011 honorees are Allen Tucker and David Baker. Please join us at this Foundation fundraiser to honor these two legends of animal science.
JAS Open Forum and Editorial Meeting  
Tuesday, July 12  
4:00 – 5:00 pm  
Convention Center, 399  
Attendees and division editors and associate division editors are invited to the JAS Open Forum to discuss the current status of the journal and future development opportunities.

The ASAS Open Forum: ASAS-CSAS-EAAP Animal Frontiers Launch  
Tuesday, July 12  
5:00 – 6:00 pm  
Convention Center, 388  
Attendees are invited to The ASAS Open Forum on Tuesday, July 12, from 5:00 to 6:00 pm in the convention center. Join ASAS, CSAS, and EAAP as we celebrate the launch of our new joint review magazine, Animal Frontiers.

ADSA Awards Program  
Tuesday, July 12  
7:00 – 8:00 pm  
Marriott New Orleans, Acadia  
All meeting participants, families, and friends are welcome to attend the 2011 ADSA awards program. Please join us at this special event to recognize and congratulate the 2011 award winners at the Marriott New Orleans.

ADSA-ASAS Ice Cream Social  
Tuesday, July 12  
8:15 – 9:30 pm  
Marriott New Orleans, Bissonet/Carondelet  
All meeting participants, families, friends, and award donors are invited to join us for the always-popular ice cream social.

Graduate Student Mixer, sponsored by ASAS  
Tuesday, July 12  
9:00 pm  
Bourbon Cowboy  
Join your fellow graduate students at a mixer for grad students to enjoy. This event will provide an opportunity to catch up with old friends and make new ones, so don’t miss it. Preregistration is highly recommended.

Spouse Event 2: Hurricane Katrina Rebirth and Rebuild Tour  
Wednesday, July 13  
10:00 am – 1:00 pm  
Depart from the Convention Center  
Get an eyewitness account of the events surrounding Hurricane Katrina, the worst natural disaster on American soil! Learn the history of the original city of New Orleans, the French Quarter, and why it was built at this particular location along the Mississippi River. The tour is narrated by licensed tour guides who are local New Orleanians with their own personal account of Hurricane Katrina. This tour travels by bus through neighborhoods such as Lakeview, Gentilly, New Orleans East, St. Bernard, and the Ninth Ward. Lunch is not included on this tour.

ADSA Graduate Student Career Roundtable  
Wednesday, July 13  
11:15 am – 12:30 pm  
Convention Center, 394  
Graduate students will have the opportunity to visit with faculty in hiring positions and industry professionals representing varied facets of animal agriculture. Attendees will learn about careers in the industry and hear useful tips on getting a job in academia, planning a career, and much more. Students are encouraged to dress professionally (business casual or better) and to bring several copies of their CVs.

Global Networking Reception  
Wednesday, July 13  
4:30 – 6:00 pm  
Convention Center, 395-396  
All meeting participants are welcome to attend the closing reception on Wednesday evening. Dr. Catherine Woteki, Under Secretary for Agriculture for Research, Education and Economics, USDA, will speak on the topic of the public research agenda for agriculture from the USDA perspective. 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.
2011 ADSA Award Donors

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

2011 ASAS Award Donors

ABS Global Inc.
Agri-King
American Feed Industry Association
American Society of Animal Science
American Society of Animal Science Foundation
Center for Regulatory Services Inc.
DSM Nutritional Products Inc.
Elanco Animal Health-Eli Lilly and Co.
Land O’Lakes Purina Mills LLC
Merial Ltd.
Morrison Award Fund
Omega Protein Corp.
Pfizer Animal Health
The Iams Company
Zinpro Corp.
Exhibit Schedule

Sunday, July 10
Exhibit Set Up .................................................. 10:00 am – 6:00 pm

Monday, July 11
Exhibits Open .................................................. 8:00 am – 6:00 pm
Exhibitor Reception .............................................. 4:00 pm – 6:00 pm

Tuesday, July 12
Exhibits Open .................................................. 8:00 am – 5:00 pm

Wednesday, July 13
Exhibits Open .................................................. 8:00 am – 2:00 pm
Exhibit Dismantle ............................................... 2:00 pm – 5:00 pm

Exhibit Floor Plan
Guide to Exhibitors/Booth Numbers

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<th>Company/ Organization</th>
<th>Booth Numbers</th>
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<td>AAALAC</td>
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<td>Acadian Agritech.</td>
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<td>Ag Processing Inc.</td>
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<td>American Dairy Science Association (ADSA)</td>
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A special thank you to our 2011 ADSA®-ASAS Joint Meeting Exhibitors!
A-Systems specializes in software for the feed industry. We have developed the feed formulation program Allix², the rationing calculation program Ruminix, the Safety Datasheet Program Securix, and the quality control programs KAllix. Today we have more than 1,500 users worldwide, including international, national and regional leaders in the feed industry.

AAALAC International offers accreditation and education services for agricultural animal research programs. Earning accreditation demonstrates dedication to responsible animal care. It also assures research partners, funding sources, and the public of a commitment to quality research and good science. More than 800 institutions in 34 countries have earned AAALAC accreditation.

Acadian Agritech
30 Brown Avenue
Dartmouth, NS B3B 1X8 Canada
Booth(s): 409

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

Adisseo
4400 N Point Pkwy Ste 275
One Point Royal
Alpharetta, GA 30022-2429
http://www.adisseo.biz/
Booth(s): 315

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

Ag Processing Inc.
PO Box 2047
12700 West Dodge Road
Omaha, NE 68154
Phone: (402) 492-3309; Fax: (402) 496-6686
http://www.amino-plus.com
Booth(s): 319

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

Alltech
3031 Catnip Hill Rd
Nicholasville, KY 40356-8700
Phone: (859) 887-3245; Fax: (859) 887-3256
http://www.alltech.com
Booth(s): 619, 621, 718, 720

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, Mycosorb, Bioplex, and Sil-All—set a unique example of how all-natural technologies backed by dedicated research can move the industry forward.

American Dairy Science Association (ADSA)
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.adsa.org
Booth(s): 802

Established in 1906, ADSA is an international organization of educators, scientists, industry, and government representatives who are committed to advancing the dairy industry. All are keenly aware of the vital role the dairy sciences play in fulfilling the economic, nutritive, and health requirements of the world’s population. Together, ADSA members have discovered new methods and technologies that have revolutionized the dairy industry. Please visit www.adsa.org for more information.
American Registry of Professional Animal Scientists (ARPAS)
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.arpas.org
Booth(s): 219

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

American Society of Animal Science (ASAS)
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.asas.org
Booth(s): 215

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.

AMTS, LLC
127 Asbury Rd
Lansing, NY 14882
http://Agmodelsystems.com
Booth(s): 616

AMTS LLC is committed to bringing the Global Feed Industry and the Independent Nutritionist the best tools in a form that are powerful and easy to use. AMTS LLC has practicing nutritionists on staff. This powerful combination of advanced tools and practical experience allows AMTS to offer products and training that ‘bridges the gap’ between cutting edge science and field use. AMTS software incorporates the latest biology (CNCPS version 6.1) and an interface designed to increase user efficiency.

Animal Frontiers
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.animalfrontiers.org
Booth(s): 209

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

Ankom Technology
2052 O’Neil Rd
Macedon, NY 14502-8953
Phone: (315) 986-8090; Fax: (315) 986-8091
http://www.ankom.com
Booth(s): 700

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

Arm & Hammer Animal Nutrition
469 Harrison St
Princeton, NJ 08540-3510
Phone: (609) 279-7335; Fax: (609) 497-7176
http://www.AHDairy.com
Booth(s): 320

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

ASAS Foundation
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-9050; Fax: (217) 398-4119
http://www.asas.org
Booth(s): 217

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

Balchem
PO Box 600
52 Sunrise Park
New Hampton, NY 10958-0600
Phone: (845) 326-5600; Fax: (845)326-5742
http://www.balchem.com
Booth(s): 509, 608

Balchem's Animal Nutrition and Health Division brings the benefits of patented proprietary micro-encapsulation and chelated trace mineral technology to the livestock, poultry, and companion animal industries. Encapsulation and chelation technologies offer “protection nutrition” to sensitive compounds. Hence, these compounds become bioavailable when and where they offer the most benefit to the animal. Our products include ReaShure, NiaShure, AminoShure-L, NitroShure, KeyShure, VitaShure, and choline chloride.
Bar Diamond
http://www.bardiamond.com
Booth(s): 818

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

Biomin
1846 Lockhill Selma Rd Ste 101
San Antonio, TX 78213-1551
Phone: (210) 342-9555; Fax: (210) 342-9575
http://www.biomin.net
Booth(s): 514

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

Bruker Optics, Inc.
19 Fortune Dr
Billerica, MA 01821-3923
http://www.brukeroptics.com/solutions
Booth(s): 301

Bruker offers Infrared (NIR) and NMR analyzers for the quality control of feed and forage for livestock, as well as milk and dairy products. Various types animal feed as well as feed ingredients can be rapidly analyzed for parameters like protein, oil, moisture, fiber and ash, as well as more specialized parameters (e.g., amino acids). Cheese products (soft, hard and slicing, processed, curd) can directly be analyzed in the laboratory or in-process for dry matter, fat, protein, salt and for some types for pH.

Buchi Corporation
19 Lukens Dr Ste 400
New Castle, DE 19720-2787
http://www.mybuchi.com
Booth(s): 601

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

C-Lock Inc.
2525 W Main St Ste 211
Rapid City, SD 57702-2439
Phone: (605) 791-5657
http://c-lockinc.com/
Booth(s): 321

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

CABI Bookshop
22883 Quicksilver Dr
Sterling, VA 20166-2019
Phone: (703) 996-1012
http://www.styluspublishing.com
Booth(s): 505

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

Cambridge University Press
32 Avenue of The Americas Bldg 1
New York, NY 10013-2473
http://journals.cambridge.org
Booth(s): 316

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

Chr. Hansen
9015 W Maple St
Milwaukee, WI 53214-4213
Phone: (414) 607-5739; Fax: (414) 607-5704
http://www.chr-hansen.com
Booth(s): 303, 402

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

Cumberland Valley Analytical Services
14515 Industry Dr
Hagerstown, MD 21742-2410
Phone: (301) 790-1980; Fax: (301) 790-1981
http://www.foragelab.com
Booth(s): 515

Cumberland Valley Analytical Services is a full service forage and feed testing laboratory specializing in chemistry analysis.
Dairy Records Management Systems provides innovative dairy information products and services for producers, DHIA staff, consultants and other dairy industry professionals. Comprehensive processed reports include Transition Cow Management, Survival Analysis and Persistency Analysis. Leading-edge software and web tools include PCDART, PocketDairy, Herd Detective, DairyMetrics, WebReports, and Reports On-Demand.

Dairy Tech Inc.
352 North Shores Circle
Windsor, CO 80550
http://www.dairytechinc.com
Booth(s): 318

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

Dalex Livestock Solutions, LLC
240 Industrial Blvd
Waconia, MN 55387-1734
Phone: (952) 442-4251; Fax: (952) 831-4251
http://www.dalex.com
Booth(s): 417

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

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

Distillers Grains Technology Council (DGTC) is a nonprofit association of fuel and beverage ethanol & 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 lets talk about the rapidly growing availability of distillers and its feed value.

DSM Nutritional Products
45 Waterview Blvd
Parsippany, NJ 07054-7611
Fax: (973) 257-8653
http://unlimitednutrition-na.dsm.com
Booth(s): 800

DSM Nutritional Products is the leading supplier of vitamins, carotenoids, enzymes and direct fed microbials to the animal feed industry. With its extensive network of premix plants, DSM Nutritional Products is optimally poised to deliver these essential micronutrients either as straight ingredients or through ROVIMIX premix.
EAAP annually organizes the largest animal science meeting in Europe. This meeting is the perfect venue to create a network with qualified animal scientists. Over one thousand scientists have attended the EAAP annual meetings in the past years. EAAP produces the journal Animal, one of the highest-ranked animal science magazines. EAAP has many other services and activities for its members: publishing scientific books, organizing specific and regional workshops and scientific meetings, coordinating international research projects, and defending positions of animal science and livestock industry at international level. EAAP is a federation of national members with the national members being the backbone of EAAP. To increase the quantity and quality of services to the animal science community, EAAP established the individual membership structure. Everyone is invited to become members of EAAP and benefit from belonging to the EAAP community.

Elsevier
1600 John F Kennedy Blvd Ste 1800
Philadelphia, PA 19103-2398
Phone: (215) 239-3491; Fax: (215) 239-3494
http://www.elsevierhealth.com
Booth(s): 414

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

Evonik Degussa Corp
1701 Barrett Lakes Blvd NW Ste 340
Kennesaw, GA 30144-4509
Phone: (678) 797-4311; Fax: (678) 797-4313
http://www.aminoacidsandmore.com
Booth(s): 607, 609

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

FDA–Center for Veterinary Medicine
7519 Standish Pl
Rockville, MD 20855-2792
Phone: (301) 827-3800; Fax: (301) 827-4065
Booth(s): 618

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

Federation of Animal Science Societies
2441 Village Green Place
Champaign, IL 61822-7676
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.fass.org
Booth(s): 717

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 2010–2011 CSF.

Feed Management Systems
6120 Earle Brown Dr Ste 300
Brooklyn Center, MN 55430-4101
Phone: (763) 560-8139
http://www.feedsys.com
Booth(s): 614

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

Goat Industry-eXtension
http://extension.org/goat
Booth(s): 816

The Goat Industry is a website through eXtension that provides scientific basic information for goat producers, extension educators and consumers. Currently, this site has resources which include information on Announcements, Breeds, Extension Resources, Genetics, Glossary of Terms, Health, Instructional Videos, Goat Industry Assessment and Outlook, Meat Goat Management Wheel, Marketing, Management, Nutrition, Reproduction, Pastures and Forages, Predator Control and Vegetation Management. Resources are continuously being added to the site to benefit the people interested in learning more about goats.

GrowSafe Systems
280105 Range Road 22 RR1 Site 1 Box 19
Airdrie, AB T4B2A3 Canada
http://www.growsafe.com
Booth(s): 407

GrowSafe develops advanced data acquisition systems for individual animal feed intake and behavior research in feedlot, dairies and on pasture. Visit us in Booth 407 for a real-time demonstration of our technology capabilities.

GTC Nutrition
600 Corporate Cir Ste H Golden, CO 80401-5604
Phone: (303) 951-6520; Fax: (303) 951-6520
http://fortifeed.com
Booth(s): 503

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

H.J. Baker & Bro., Inc.
228 Saugatuck Ave Ste 1
Westport, CT 06880-6444
Phone: (203) 682-9200; Fax: (203) 227-8351
http://www.bakerbro.com
Booth(s): 603

Introducing MetaboLys By-Pass lysine for dairy. Great news for our industry—MetaboLys by-pass lysine delivers a high payload of metabolizable lysine directly to the small intestine. University tests utilizing rumen and duodenal cannulated cows document high by-pass and intestinal digestibility—that means higher protein component milk and more milk per cow! Patent pending technology.

Hangzhou East Biochem Co., Ltd.
1705, Guangyin Bldg, 42 Fengqi Dong Rd
Hangzhou 310020 China
http://www.east-biochem.com
Booth(s): 715

We are a Chinese producer of specialty feed additives. Based on our FAMI-QS certified factory, we provide betaine, sodium butyrate 30% coated, zinc oxide 50% coated, vitamin C 97% coated, rumen protected choline chloride 25%, rumen protected lysine HCl 30%, rumen protected methionine 30%, Bacillus subtilis (5 \times 10^{11} \text{ cfu/g}) and Bacillus licheniformis (5 \times 10^{11} \text{ cfu/g}).

International Ingredient Corp.
150 Larkin Williams Ind Ct
Fenton, MO 63026-2409
Phone: (636) 343-4111 ext. 1252; Fax: (636) 349-4845
http://www.iicag.com
Booth(s): 701

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

Jefo Nutrition
5020 Jefo Ave Box Office 325
St-Hyacinthe, QC J2S 7B6 Canada
Phone: (450) 799-2000; Fax: (450) 778-1338
www.jefo.ca
Booth(s): 709, 808

Jefo Nutrition is a worldwide leader and a fast-growing company in the field of non-medicated feed additives. Our cutting-edge technology is an effective alternative to antibiotic growth promoters. With offices on 5 continents, Jefo Nutrition’s expertise in nutrition and animal health comes from a strong and diversified background of experienced professionals. Our team, with the help of third parties such as universities, sustains and expands its expertise by investing 40% of Jefo Nutrition’s profits in R&D. Jefo Nutrition manufactures highly specialized products and also distributes over 175 products related to animal nutrition.
The Johne’s Disease Integrated Program (JDIP) is a consortium of scientists, whose mission is to promote animal bio-security through the development and support of projects designed to enhance knowledge, promote education, and develop real-world solutions to mitigate losses associated with Johne’s disease. Funded by a grant from the USDA-NIFA.

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

Kahne Limited
Level 1, 64 Cook Street
Auckland 1010, New Zealand
Phone: +64 9 623 4757; Fax: +64 9 623 3012
http://www.kahneanimalhealth.com
Booth(s): 516

Kahne Ltd. is a New Zealand-based company that sells wireless rumen sensors to enable animal scientists to obtain accurate and comprehensive data from the rumen of unconstrained animals. Using less invasive practices, Kahne technology can benefit research in animal nutrition, welfare, behaviour and environmental emissions.

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

Based in Europe, Phodé Laboratories have conceived and produced unique sensory additives since 1996. Created by DMV Daniel Eclache, the company has evolved over time to become a specialist of functional micro-ingredients for nutrition and the environment. R&D department of Phodé Laboratories is dedicated to better understanding the effects of olfactory molecules upon the emotions, behavior and well-being. Phodé’s extensive research has recently led to a new patented technology allowing to control the release of active substances. The first resulting product, Force 6, was formulated for health preservation and maintenance of high performance animals.

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

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

Multimin 90 provides zinc, manganese, copper and selenium in a readily available form as an injectable, which by-passes any antagonists that may tie up oral minerals. Strategic injection offers critical supplementation at times of increased demand supporting reproduction and immunity.
National animal health monitoring system (NAHMS) provide essential information on livestock and poultry health and management in the United States. Producers types are studied at regular intervals, providing up-to-date information needed to monitor U.S. animal health, support trade decisions, inform the public, and set policy.

Novus International
20 Research Park Dr
Saint Charles, MO 63304-5633
Phone: (314) 453-7711; Fax: (314) 576-4635
http://www.novusint.com
Booth(s): 309, 408

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.

Omega Protein Inc.
2101 Citywest Blvd, Bldg. 3, Suite 500
Houston, TX 77042-2832
http://www.omeganutrient.com
Booth(s): 306

Omega Protein is the world's largest producer of omega-3 fish oil and North America's largest producer of fish meal and fish solubles. These ingredients are used in poultry, swine, pet, equine, aquaculture, and other livestock feeds. Omega Protein is vertically integrated and certified sustainable. Available in bulk, bag or drums.

Poultry Protein & Fat Council
1530 Cooledge Rd
Tucker, GA 30084-7303
Phone: (770) 493-9401; Fax: (770) 493-9257
http://www.poultryegg.org/ppfc/
Booth(s): 706

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

Probiotech International Inc.
6225 Choquette Street
St. Hyacinthe, QC J2S 8L2 Canada
Phone: (450) 771-7252; Fax: (450) 771-4509
http://www.probiotech.com
Booth(s): 420

Probiotech International Inc. develops and provides the animal nutrition industry with natural solutions. The line of products was designed using the principles of biotechnology in order to promote animal health and to maximize agriculture production with the respect of our environment in mind. Products range from patented rumen-protected choline for dairy cows to organic acidifiers, and plant extracts for swine and poultry.

Quali Tech Inc.
318 Lake Hazeltine Dr
Chaska, MN 55318
http://www.qualitechco.com
Booth(s): 400

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

Saf Agri/Lesaffre Feed Additives
7475 W Main St
Milwaukee, WI 53214-1552
Phone: (414) 615-4138; Fax: (414) 615-4003
http://www.lfa-america.com
Booth(s): 317

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

Soybean Meal Information Center
1255 SW Prairie Trail Pkwy
Iowa Soybean Association
Ankeny, IA 50023-7068
Phone: (515) 251-8640; Fax: (515) 251-8657
http://www.soymeal.org
Booth(s): 416

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.
SoyBest
PO Box 157
West Point, NE 68788-0157
Phone: (402) 372-2429; Fax: (402) 372-3305
http://www.soybest.com
Booth(s): 521, 620

SoyBest High Bypass Soybean Meal is bypass protein for dairy cows. Manufactured by the mechanical process, it contains no chemical solvents and is all-natural. SoyBest includes fresh soy gums with lecithin and phosphatidylcholine. Research shows these nutrients behave like rumen-protected fat, resulting in even more bypass protein with excellent intestinal digestibility.

SoyPLUS, SoyChlor (West Central)
PO Box 68
Ralston, IA 51459-0068
Phone: (712) 667-3200; Fax: (712) 667-3399
http://www.soyplus.com
Booth(s): 314

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

Unity Scientific
32 Cornerstone Dr
North Easton, MA 02356-2740
Phone: (540) 338-8991; Fax: (540) 338-8992
Booth(s): 708

Unity Scientific LLC is a global leader in the design and production of near infrared instruments for at line, on line and laboratory analysis. The Unity SpectraStar systems are ideal for quick and accurate QA/QC testing in the food, feed, forage and general agriculture markets. Unity’s new SpectraStar RTW system offers ultimate sample flexibility by allowing the use of existing sample cups from older equipment, our variety of cups, petri dishes, beakers or even bags on a top window in either rotating or static mode. Unity can also transfer an existing database to a new SpectraStar in minutes with the ability to continue your library expansion. Our technical staff averages average 20 years experience each in near infrared support and are available to assist in any technical capacity.

Varied Industries Corporation
905 S Carolina Ave
P.O. Box 1483
Mason City, IA 50401-5813
Phone: (641) 423-1460; Fax: (641) 423-0832
http://www.vi-cor.com
Booth(s): 615, 617, 714, 716

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

Western Yeast Company
305 W Ash St
Chillicothe, IL 61523-1603
http://www.westernyeast.com
Booth(s): 606

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

Zinpro
10400 Vicking Drive Suite 240
Eden Prairie, MN 55344
http://www.zinpro.com
Booth(s): 501, 600

Zinpro Performance Minerals are uniquely designed and manufactured to be the highest bioavailable trace mineral products on the market.
2011 Corporate Sponsorship

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Thank you for your support!
Introducing

AgriNIR™
PORTABLE ANALYZER FOR FORAGES

Now you can test forages for variations in dry matter and nutrient value quickly and efficiently on the farm with the new portable AgriNIR™ Portable Forage Analyzer from dinamica generale®!

- AgriNIR’s portability makes it fast and easy to take samples from multiple locations.
- Adjust rations the same day and more accurately match nutritionist recommendations.
- No more “guessing” how much dry matter has changed since the sample was sent for analysis to a lab.

TAKE CONTROL & INCREASE FEED EFFICIENCY WITH THE AgriNIR PORTABLE FORAGE ANALYZER

Research by the U.S. Dairy Forage Research Center shows that variations in stored forage dry matter after rain or snow can decrease milk production by 4 to 6 lbs per head per day.

Their study also shows that forage variability can be managed through rapid, on-farm NIR analysis of dry matter content and making daily ration adjustments to account for added moisture.

Why risk a drop in milk production? Adjust rations in real time.

The dg NIR Manager Software Suite that comes with the unit is designed to create or update calibration curves involving new NIR crop families or new chemical parameters of existing NIR crop families.

For more information on the AgriNIR, call 715-781-7134 or email dg-usa@dinamicagenerale.com to set up an appointment for a demo today!

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   (ADSA HQ)

2. Sheraton New Orleans  
   (ASAS HQ)

3. Westin New Orleans Canal Place  
   (Student HQ)

4. New Orleans Marriott Convention Center  
   (Official JAM Hotel)
5th Floor

8th Floor
Marriott New Orleans (ADSA HQ Hotel)

4TH FLOOR
MEETING ROOMS

5TH FLOOR
MEETING ROOMS

3RD FLOOR
GRAND BALLROOM

41st FLOOR
SUITES

MARRIOTT'S PRESERVATION HALL
STUDIO FLOOR PLAN

NEW ORLEANS
Marriott
MEETING ROOMS
Floor Plan
Thank you to the 2011 ADSA-ASAS Joint Meeting Sponsors!

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Schedule of Events

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

Saturday, July 9

7:00 am – 8:00 am  ASAS Membership Committee Meeting  ..................... Sheraton New Orleans, Ellendale
7:30 am – 5:00 pm  ADSA Board of Directors Meeting  .......................... Marriott New Orleans, Galerie 1
8:00 am – 9:00 am  ASAS New Board Orientation  ............................ Sheraton New Orleans, Crescent
8:00 am – 5:00 pm  American Society for Nutrition (ASN), ASAS, and
                     ADSA preconference symposium ............................. Convention Center, 288-289
9:30 am – 5:30 pm  ASAS Board of Directors Meeting  .......................... Sheraton New Orleans, Borgne
1:30 pm – 5:15 pm  ADSA-SAD Student Tour: Honey Island Swamp Tour.  Meet in Westin Lobby
3:00 pm – 5:00 pm  Registration open
                     (preregistered, badge and material pick-up only) ............. Convention Center, Lobby I2
6:00 pm  ARPS Executive Committee Meeting and Dinner  .................... Location TBD
7:00 pm  ADSA-SAD Student Informal Mixer: French Quarter Walking Tour/Dinner  Meet in Westin Lobby

Sunday, July 10

7:00 am – 7:00 pm  Registration open  ........................................ Convention Center, Lobby I2
7:30 am – 10:00 am  ADSA New Board Orientation  ........................... Marriott New Orleans, Galerie 4
8:00 am – 12:30 pm  ASAS Board of Directors Meeting  ..................... Convention Center, 275
8:00 am – 5:00 pm  ARPS Governing Council Meeting  ........................ Marriott New Orleans, Galerie 2
8:30 am – 5:00 pm  Triennial Lactation Symposium/BOLFA  ................. Convention Center, 286-287
10:00 am – 11:00 am ADSA-SAD Officers and Advisor Meeting  ............... Convention Center, 398
10:00 am – 6:00 pm  Exhibit Set Up  ........................................... Convention Center, Exhibit Hall I2J
10:00 am – 6:00 pm  Student Dairy Clubs Exhibit Set Up  ..................... Convention Center, Exhibit Hall I2J
11:00 am – 12:00 pm ADSA-SAD Quiz Bowl Officials Meeting  ................... Convention Center, 399
11:30 am – 12:30 pm ADSA-SAD Quiz Bowl Seating Test  ....................... Convention Center, 394
11:30 am – 12:30 pm Open Meeting: Becoming an ADSA Volunteer Leader  Marriott New Orleans, Galerie 6
12:00 pm – 1:00 pm  ADSA-SAD Student Midday Mixer  ........................ Convention Center, 395-396
12:00 pm – 1:00 pm  ADSA JDS Editors and Journal Management Committee Luncheon  Marriott New Orleans, Galerie 5
12:00 pm – 5:00 pm  Hospitality Lounge open  .................................. Convention Center, 285
1:00 pm – 3:00 pm  2011 and 2012 Program Committee Meeting  .......... Convention Center, 296
1:00 pm – 5:00 pm  ADSA Journal Management Committee Meeting  ......... Marriott New Orleans, Galerie 5
1:00 pm – 5:00 pm  ADSA-SAD Quiz Bowl Seating/Preliminary Rounds  .... Convention Center, 397 and 399
1:00 pm – 6:00 pm  Johne’s Disease Integrated Program (JDIP)
                     Meeting/Workshop  ........................................... Marriott New Orleans, Studio 1-3
2:00 pm – 3:00 pm  ADSA Production Division Council Meeting  ............. Convention Center, 295
2:00 pm – 4:00 pm  ADSA Foundation Board of Trustees Meeting  .......... Marriott New Orleans, Galerie 4
3:00 pm – 4:00 pm  ADSA Production Division Nominating Committee  ........ Convention Center, 295
3:00 pm – 5:00 pm  Late-Breaking Original Research Session  .................. Convention Center, 288-289
4:30 pm – 6:30 pm  Graduate Student Grant Writing Workshop  ............... Convention Center, 386-387
5:00 pm – 6:00 pm  ADSA Dairy Foods Division Council Meeting  .......... Convention Center, 275
5:30 pm – 6:00 pm  ADSA-SAD Quiz Bowl Final Round  ........................ Convention Center, 397
7:00 pm – 8:15 pm  ADSA-ASAS Opening Session  ................................ Convention Center, Conference Auditorium
8:15 pm – 10:00 pm  ADSA-ASAS Opening Reception  ............................ Convention Center, La Nouvelle Orleans
Monday, July 11

6:30 am – 8:00 am  ADSA Dairy Specialists/Dairy-Related Participants  Marriott New Orleans, Galerie 1
    Breakfast
6:30 am – 5:15 pm  Registration open
7:00 am – 9:00 am  Animal Frontiers Board Meeting
7:30 am – 8:30 am  ADSA-SAD Exhibit Set-Up  Convention Center, Exhibit Hall I2J
7:30 am – 9:30 am  Poster Presentations  Convention Center, Exhibit Hall I2J
8:00 am – 5:00 pm  Commercial Exhibits and ADSA-SAD Exhibits open  Convention Center, Exhibit Hall I2J
8:00 am – 5:00 pm  Job Resource Center  Convention Center, Exhibit Hall I2J
8:00 am – 5:00 pm  Hospitality Lounge open  Convention Center, 285
8:30 am – 9:15 am  ADSA-SAD Business Meeting  Convention Center, 397
9:00 am – 10:00 am  Discover Conference Steering Committee Meeting
9:30 am – 10:30 am  ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports  Convention Center, 275
9:30 am – 10:30 am  ADSA-SAD Interviews for Outstanding Student and Advisor Awards  Convention Center, 394
9:30 am – 10:45 am  ADSA-SAD Activities Symposium  Convention Center, 397
9:30 am – 11:30 am  ASAS Publications Meeting  Sheraton New Orleans, Ellendale
9:30 am – 5:00 pm  Scientific Sessions  Convention Center
10:30 am – 12:30 pm  ARPAS Exam  Convention Center, 274
11:00 am – 5:00 pm  ADSA-SAD Undergraduate Paper Presentations  Convention Center, 397 and 399
12:30 pm – 1:30 pm  ASAS Graduate Student Open Forum  Convention Center, 388
12:30 pm – 2:00 pm  ASAS Past Presidents’ Luncheon  Convention Center, 394
12:30 pm – 2:00 pm  ADSA Past Presidents’ Luncheon  Marriott New Orleans, Galerie 1
12:30 pm – 2:00 pm  Michigan State University Luncheon  Convention Center, 278-279
12:30 pm – 2:00 pm  American College of Animal Sciences (ACAS) Annual Meeting  Convention Center, 274
2:00 pm – 4:00 pm  ARPAS Exam  Convention Center, 274
2:00 pm – 5:30 pm  Southern Branch ADSA Symposium/ Business Meeting  Convention Center, 388
3:30 pm – 5:00 pm  ADSA Graduate Student Division Business Meeting  Convention Center, 397
4:00 pm – 6:00 pm  Exhibitor Reception  Convention Center, Exhibit Hall I2J
5:00 pm – 6:00 pm  USDA-ARS Staff Update Session  Convention Center, 295
5:00 pm – 7:00 pm  Informal Calf Gathering  Marriott New Orleans, Galerie 1-2
5:30 pm – 7:00 pm  ASAS Award Winners Dinner and Photo Session  Sheraton New Orleans, Napoleon ABC
7:00 pm – 8:30 pm  ASAS Awards Program  Sheraton New Orleans, Napoleon ABC
8:00 pm – 11:00 pm  Iowa State University Reception  Sheraton New Orleans, Borgne
8:30 pm – 9:30 pm  ADSA Graduate Student Mixer  Location TBD
9:00 pm  ADSA-SAD Student Informal Mixer: Dance  Westin, Crescent Ballroom, 11th floor

Tuesday, July 12

6:30 am – 8:00 am  Penn State Breakfast  Sheraton New Orleans, Borgne
6:30 am – 8:00 am  University of Illinois Breakfast  Sheraton New Orleans, Maurepas
6:30 am – 8:00 am  Kentucky Breakfast  Sheraton New Orleans, Napoleon D12
6:30 am – 8:00 am  JDS Editorial Board Breakfast/Meeting  Marriott New Orleans, Galerie 1
7:00 am – 5:15 pm  Registration open  Convention Center, Lobby I2
7:30 am – 9:30 am  Poster Presentations  Convention Center, Exhibit Hall I2J
8:00 am – 9:00 am  ASAS Investment Committee Meeting  Convention Center, 277
8:00 am – 5:00 pm  Commercial Exhibits and ADSA-SAD Exhibits open  Convention Center, Exhibit Hall I2J
8:00 am – 5:00 pm  Job Resource Center  Convention Center, Exhibit Hall I2J
8:00 am – 5:00 pm  Hospitality Lounge open  Convention Center, 285
8:30 am – 9:30 am  ADSA-SAD Business Meeting–Elec. of Officers  Convention Center, 397
9:15 am – 11:00 am  ADSA Grad Student Career Development Workshop  Convention Center, 392
9:30 am – 11:00 am  ADSA-SAD Student Career Roundtable  Convention Center, 394
9:30 am – 11:30 am  ASAS Foundation Board of Trustees Meeting  Convention Center, 277
Schedule of Events

Wednesday, July 13

6:30 am – 8:00 am Purdue University Breakfast Sheraton New Orleans, Maurepas
7:00 am – 5:15 pm Registration open Convention Center, Lobby I2
7:30 am – 9:30 am Poster Presentations Convention Center, Exhibit Hall I2J
8:00 am – 2:00 pm Commercial Exhibits Open Convention Center, Exhibit Hall I2J
8:00 am – 2:00 pm Job Resource Center Convention Center, Exhibit Hall I2J
8:00 am – 5:00 pm Hospitality Lounge Open Convention Center, 285
9:30 am – 10:30 am ASAS Business Meeting Convention Center, 294
9:30 am – 10:30 am ADSA Business Meeting Convention Center, 296
9:30 am – 5:00 pm Mixed Models Workshop Convention Center, 390
9:30 am – 5:00 pm Mixed Models Workshop Convention Center, 390
10:00 pm – 12:00 pm ARPAS Exam Convention Center, 274
10:00 am – 1:00 pm Spouse Event 2: Katrina Rebirth and Rebuild Tour Meet at Convention Center
10:30 am – 5:00 pm Scientific Sessions Convention Center, 394
11:15 am – 12:30 pm ADSA Graduate Student Career Roundtable Marriott New Orleans, Galerie 1
12:30 pm – 2:30 pm ADSA Board of Directors Meeting Marriott New Orleans, Exhibit Hall I2J
2:00 pm – 5:00 pm Commercial Exhibits Dismantle Sheraton New Orleans, Borgne
2:30 pm – 4:30 pm ASAS Board of Directors Meeting Convention Center, 296
4:30 pm – 6:00 pm Global Networking Reception (all attendees welcome) Convention Center, 395-396

Thursday, July 14

8:00 am – 1:00 pm Registration open Convention Center, Lobby I2
8:00 am – 3:00 pm Grant Writer Symposium/Workshop, sponsored by ASAS Convention Center, 386-387
8:00 am – 5:00 pm Oral and Poster Presentation Workshop Convention Center, 288-289
8:30 am – 11:30 am Scientific Sessions Convention Center, 274
8:30 am – 11:30 am Mixed Models Workshop Convention Center, 296
Saturday, July 9

*SAD Student Tour: Honey Island Swamp Tour (Slidell, Louisiana)*
*Saturday, July 9*
*1:30 – 5:15 pm*
*Bus departs from the Westin*
The bus will depart from the Westin Hotel (student HQ), traveling 45 minutes north to Slidell, Louisiana, where we’ll board a small boat for a two-hour tour of one of the only remaining preserved wetlands in Louisiana. We will share the wetlands with alligators, raccoons, owls, wild boars, nutria, snakes, turtles, black bears, bald eagles, and many other species. Price includes tour ticket and transportation.

*SAD Student Informal Mixer: French Quarter Walking Tour and Dinner*
*Saturday, July 9*
*7:00 pm*
*Meet in Westin Lobby*
Meet in the lobby of the Westin at 7:00 pm. We’ll walk as a group through the French Quarter and experience some authentic New Orleans cuisine.

Sunday, July 10

*SAD Midday Mixer and Lunch*
*Sunday, July 10*
*12:00 – 1:00 pm*
*Convention Center, 395-396*
Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends. Lunch included. Registration is limited to undergraduate students and advisors.

*SAD-Dairy Quiz Bowl Final Round*
*Sunday, July 10*
*5:30 – 6:00 pm*
*Convention Center, 397*
On Sunday, university teams from across the US will compete in the ADSA Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The 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 2011 Dairy Quiz Bowl Winning Team.

Monday, July 11

*SAD Student Dance*
*Monday, July 11*
*9:00 pm*
*Westin Hotel, Crescent Ballroom, 11th floor*
Celebrate a great week at JAM and rock the night away with old and new friends. Good music, good dancing, good friends—it doesn’t get any better than this! Cash bar and snacks will be available. Don’t miss this one—it’s always the highlight of the meeting!
Tuesday, July 12

SAD Career Roundtable
Tuesday, July 12
9:30 – 11:00 am
Convention Center, 394

Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their CVs. Students should also plan time to visit industry reps in the exhibit hall for information about internships and job opportunities.

SAD Awards Luncheon
Tuesday, July 12
11:45 am – 2:00 pm
Convention Center, 395-396

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

Saturday, July 9

1:30 pm – 5:15 pm  ADSA-SAD Student Tour: Honey Island Swamp Tour  Meet in Westin Lobby
3:00 pm – 5:00 pm  Registration Open (preregistered, badge and material pick-up only)  Convention Center, Lobby I2
7:00 pm  Student Informal Gathering: French Quarter Walking Tour/Dinner  Meet in Westin Lobby

Sunday, July 10

7:00 am – 7:00 pm  Registration Open  Convention Center, Lobby I2
10:00 am – 11:00 am  SAD Officers and Advisor Meeting  Convention Center, 398
11:00 am – 12:00 pm  Dairy Quiz Bowl Officials Meeting  Convention Center, 399
11:30 am – 12:00 pm  Dairy Quiz Bowl Seating Test  Convention Center, 394
12:00 pm – 1:00 pm  SAD Midday Mixer and Pizza Party  Convention Center, 397 and 399
1:00 pm – 5:00 pm  Dairy Quiz Bowl Preliminary Rounds  Convention Center, 397
5:30 pm – 6:00 pm  Dairy Quiz Bowl Final Round  Convention Center, Conference Auditorium
7:00 pm  ADSA Opening Session and Reception  Convention Center, Conference Auditorium

Monday, July 11

7:00 am - 8:15 am  Student Dairy Clubs Exhibits Setup  Convention Center, Exhibit Hall I2J
7:30 am – 9:30 am  Poster Presentations  Convention Center, Exhibit Hall I2J
8:00 am – 5:00 pm  Commercial Exhibits and ADSA-SAD Exhibits Open  Convention Center, 397
8:30 am – 9:15 am  SAD Business Meeting  Convention Center, 397
9:30 am – 10:30 am  SAD Judging of Yearbooks, Scrapbooks and Annual Reports  Convention Center, 394
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11:00 am – 5:00 pm  SAD Undergraduate Paper Presentations  Convention Center, 397 and 399
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ADSA Dairy Foods Division Schedule of Events

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

Sunday, July 10

5:00 pm – 6:00 pm  ADSA Dairy Foods Division Council Meeting, 275

Monday, July 11

7:30 am – 9:30 am  Posters: Dairy Foods: Chemistry, processing, and analysis, Exhibit Hall I2J
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2:00 pm – 4:40 pm  Symposium: Dairy Foods: Technological advancements in the reduction of pathogens and spoilage organisms in milk, 296

Tuesday, July 12

7:30 am – 9:30 am  Posters: Dairy Foods: Milk protein and enzymes, Exhibit Hall I2J
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3:00 pm – 5:00 pm  ADSA Production Division Symposium: Current and future determinants of dairy product pricing, 298-299

Thursday, July 14

8:30 am – 10:15 am  Dairy Foods: Milk protein and enzymes, 298-299
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*Please check the onsite newsletter each morning for changes.*

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Saturday, July 9

PRECONFERENCE SYMPOSIUM

ASN-ASAS-ADSA Preconference:
Agri-Medical Research: Providing Dual Benefit for Agriculture and Human Health


7:00 – 10:00 AM
Registration open; badge and bag pick-up; poster check-in (posters up all day).

8:00 AM
Welcome and introduction.
Matthew Waldron, University of Missouri.

8:10 AM
Impact of metabolism on human health, companion animal health and farm health and production.
James Ntambi, University of Wisconsin-Madison.

Development of models of obesity and metabolic syndrome.
Michael Spurlock, Iowa State University.

Integration of molecular biology, cell culture approaches, and whole-organism physiology in lipid metabolism research.
Sean Adams, University of California-Davis, WHNRC.

Panel discussion

10:15 AM
Impact of developmental environment on the risk of chronic disease.
Graham Burdge, University of Southampton, UK.

Fetal origins of adult disease.
Stephen Ford, Department of Animal Science, University of Wyoming.

Gestational nutrition and placental effects on health and productivity.
Lawrence Reynolds, North Dakota State University.

Panel discussion

12:15 PM
Lunch (on your own) and poster viewing

1:50 PM
Microbial endocrinology—Interactions of nutrition, host physiology, and microbes that impact infectious disease.
Mark Lyte, Texas Tech University Health Sciences Center.

Interventions to reduce pathogens in swine and cattle.
Todd Callaway, USDA-Texas A&M University.

Etiology of inflammatory bowel and liver diseases in small animals and humans.
Kenneth Simpson, Cornell University.

Panel discussion

3:55 PM
Nutritional impact of inflammation and infection.
Charles Dinarello, University of Colorado, Denver.

The cost of immune protection—Nutritional accounting and production efficiency.
Kirk Klasing, University of California-Davis.

Sculpting the optimal immune response.
Mark Cook, University of Wisconsin-Madison.

Panel discussion

6:00 – 7:30 PM
Awards and cocktail reception.
**Sunday, July 10**

**SYMPOSIA AND ORAL SESSIONS**

**Triennial Lactation Symposium**

**Lactation Biology Training for the Next Generation – A Tribute to Dr. H. Allen Tucker**

**Chair:** Geoff Dahl, University of Florida  
**Sponsors:** ASAS Foundation, EAAP, Elanco Animal Health  

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8:30 AM  
**Introduction to the symposium and a history of Dr. Tucker’s trainees.**  

9:00 AM  
**1 Bovine mammary epithelial cell lineages and parenchymal development.**  
S. Ellis*, R. M. Akers¹, A. V. Capuco³, and S. Safayi¹, ¹Clemson University, Clemson, SC, ²Virginia Polytechnic Institute, Blacksburg, VA, ³USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD.

9:45 AM  
**Break**

10:00 AM  
**2 Prolactin—The multi-faceted potentiator of mammary growth and function.**  

10:45 AM  
**3 The lactocrine hypothesis: Programming reproductive tract development.**  
F. F. Bartol*, J. C. Chen², D. J. Miller¹, A.-L. Frankshun², A. A. Wiley¹, A. J. Silva¹, M. E. Camp¹, K. M. Ferio², and C. A. Bagnell¹, ¹Auburn University, Auburn, AL, ²Rutgers University, New Brunswick, NJ.

11:30 AM  
**Lunch Break**

1:00 PM  
**4 Opportunities for improving milk production efficiency in dairy cattle.**  
E. E. Connor*, J. L. Hutchison, K. M. Olson, and H. D. Norman, USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, ²USDA-ARS, Animal Improvement Programs Laboratory, Beltsville, MD.

1:45 PM  
**5 Lactational imprinting: The mechanism underlying the mammary response to changes in milking frequency?**  
E. H. Wall*, J. P. Bond², and T. B. McFadden¹, ¹Department of Animal Science, University of Vermont, Burlington, ²Vermont Genetics Network Bioinformatics Core, University of Vermont, Burlington, ³Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.

2:30 PM  
**Break**

3:00 PM  
**6 Mammary metabolism of amino acids in dairy cows.**  
H. Lapierre*, L. Doepel², G. Raggio³, and S. Lemosquet⁴, ¹Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ²University of Calgary, Calgary, AB, Canada, ³College Alfred, Guelph University, Guelph, ON, Canada, ⁴UMR1080 Dairy Production, INRA, Saint-Gilles, France.

3:45 PM  
**7 Stress effects on postpartum reproduction in dairy cows.**  
M. A. Crowe* and E. J. Williams, Veterinary Sciences Centre, University College Dublin, School of Agriculture, Food Science and Veterinary Medicine, Belfield, Dublin 4, Ireland.

4:30 PM  
**Panel Discussion**

**OTHER EVENTS**

**Late-Breaking Abstracts**  
288-289  
3:00 to 5:00 PM

**Opening Session**  
Convention Center, Conference Auditorium  
7:00 to 8:15 PM

**Opening Reception**  
Convention Center, La Nouvelle Orleans  
8:15 to 10:00 PM
Monday, July 11

POSTER PRESENTATIONS

Animal Behavior and Well-Being

M1 Validation of an automated method for recording the feeding behavior of dairy cows using a Calan Broadbent Feeding System.

M2 Animal welfare assessment of intensive dairy farms from central zone of Chile under confinement with different housing systems.
M. J. Castro, C. Kobrich, and M. S. Morales*, Departamento Fomento de la Produccion Animal, Facultad de Ciencias Veterinarias y Pecuarias, Universidad de Chile, Santiago, RM, Chile.

M3 Effect of dietary starch on the behavior of early postpartum dairy cows.

M4 Effects of a high forage prepartum diet on feeding behavior of dairy cows.

M5 Diurnal grazing behavior of cattle fed a concentrate supplement during the dry-rainy transition season in tropical conditions.
H. J. Fernandes*, V. Siqueira, L. O. Tedeschi, G. C. Coelho, L. M. Paiva, C. Guarál, and J. C. Souza, State University of Mato Grosso do Sul, Aquidauana, MS, Brazil, Texas A&M University, College Station, Federal University of Mato Grosso do Sul, Aquidauana, MS, Brazil.

M6 Competition and feed restriction affect feeding and competitive behavior of group-housed dairy cows.

M7 Effect of residual feed intake in reactivity of Nellore heifers.

M8 Effect of different short- and long-term heat stress exposure periods and fescue toxicosis on the immune system.

M9 Intake and feeding behavior in growing heifers fed a high concentrate diet and offered a total mixed ration or dietary components separately.
S. P. Iaira, M. Rodríguez-Prado, X. Manteca, J. L. Ruiz de la Torre, S. Calsamiglia*, and A. Ferret, Universitat Autònoma Barcelona, Bellaterra, Barcelona, Spain.

M10 Validation and cross-prediction of a single or dual accelerometers for the prediction of grazing, standing/walking, and lying behavior of beef cattle using linear discriminant analysis.
M. S. Gadberry, W. Whitworth*, G. Montgomery*, and K. Simon*, University of Arkansas, Cooperative Extension Service, Little Rock, University of Arkansas, Southeast Research and Extension Center, Monticello.

M11 Comparison of logging intervals for accelerometer predicted grazing, standing/walking, and lying behavior of beef cattle.
M. S. Gadberry*, W. Whitworth, G. Montgomery, and K. Simon*, University of Arkansas, Cooperative Extension Service, Little Rock, University of Arkansas, Southeast Research and Extension Center, Monticello.

M12 A comparison of lipopolysaccharide-induced febrile responses across heat-tolerant and -sensitive Bos taurus cattle in different thermal environments.

M13 Effects of alternative housing and feeding systems on the performance of dairy heifer calves.
J. A. Pempek*, M. L. Eastridge, N. A. Botheras, C. C. Croney, and W. S. Bowen, The Ohio State University, Columbus.

M14 Environmental enrichment influence on feedlot cattle performance.
B. J. Howell*, J. R. Brethour, and J. R. Jaeger, Fort Hays State University, Hays, KS, Kansas State University, Hays.

M15 Lack of the expressive associations between temperament, aggression and weight gain in finishing weight feedlot cattle.
D. R. Soares*, K. Schwartzkopf-Genswein, P. C. Sant’anna, T. da Silva Valente, P. M. Rueda, J. N. dos Santos Gonçalves Cyrilo, and M. J. R. P. da Costa, Sao Paulo State University, Animal Science Postgraduation, Jaboticabal, Sao Paulo, Brazil, Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada, Animal Science Institut of Sertaozinho, Sertaozinho, Sao Paulo, Brazil, Animal Science Department, Sao Paulo State University, Jaboticabal, Sao Paulo, Brazil.
Relationship between temperament, blood flow and area in the external jugular vein, and body temperature in crossbred beef calves.
H. L. Sanchez-Rodriguez*, R. C. Vann, E. Baravik-Munsell, S. T. Willard, and P. L. Ryan, Mississippi State University, Mississippi State, MS.

Pre-separation behavior of calves being weaned by different methods.
H. T. Boland*1,2, S. T. Willard2, K. Umemura3, G. Scaglia4, J. A. Parish5, and T. F. Best1, Mississippi State University, Prairie Research Unit, Prairie, 1Mississippi State University, Department of Biochemistry and Molecular Biology, Mississippi State, 2National Agricultural Research Center for Hokkaido Region, Toyohira, Sapporo, Japan, 3Louisiana State University Agricultural Center, Iberia Research Station, Jeanerette, 4Mississippi State University, Department of Animal and Dairy Sciences, Mississippi State.

Predictors of body thermal status in heat-tolerant and -sensitive Bos taurus cattle exposed to different temperature loads under controlled conditions.

Sexual behavior of Nellore cattle in the Pantanal.
J. C. DeSouza*1, U. G. P. Abreu2, J. R. B. Sereno3, C. H. M. Malhado4, J. A. Freitas5, P. B. Ferraz Filho6, H. J. Fernandes7, R. L. Weaber8, and W. R. Lamberson9, 1Mato Grosso do Sul Federal University – UFMS/Animal Science, Aquidauana, Brazil, 2Empresa Brasileira de Pesquisa Agropecuária - CPAP-EMBRAPA, Corumbá, Brazil, 3Empresa Brasileira de Pesquisa Agropecuária - CPAC - EMBRAPA, Brasília, DF, Brazil, 4South of Bahia State University - UESB, Bahia, Brazil, 5Parana Federal University - UFPR, Palotina, Brazil, 6Mato Grosso do Sul Federal University - UFMS, Tres Lagoas, Brazil, 7State University of Mato Grosso do Sul, Aquidauana, Brazil, 8Animal Sciences, University of Missouri, Columbia.

Behavioral reactivity to psychosocial stress determines the effects of lavender oil on anxiety in sheep.
P. Hawken1, C. Fiol2, and D. B. Blache3, 1UWA Institute of Agriculture (Animal Production), The University of Western Australia, Perth, Western Australia, Australia, 2Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay.

Characteristics and welfare of horses used for transportation in northeast Ohio.
K. Bennett-Wimbush*, M. Amstutz, and D. Willoughby, Ohio State University Agricultural Technical Institute, Wooster.

Female mate choice in the domesticated goat (Capra hircus).
K. M. Longpre* and L. S. Katz, Rutgers University, New Brunswick, NJ.

Effects of spray-dried porcine plasma (SDPP) administered as an oral gavage on indicators of health, welfare, and performance in pigs transported after weaning.
L. M. Wittish* and M. J. Estienne, Virginia Polytechnic Institute and State University, Blacksburg.

Castration is no laughing matter, nitrous oxide can’t even help.
J. L. Rault*1 and D. C. Lay2, 1Department of Animal Sciences, Purdue University, West Lafayette, IN, 2USDA-ARS-Livestock Behavior Research Unit, West Lafayette, IN.

The effect of using carbon dioxide gas and/or a NSAID to reduce the pain associated with castration in pigs.
B. L. Davis*1, and M. A. Sutherland, 1Texas Tech University, Lubbock, 2Ruakura Research Centre, AgResearch, Hamilton, New Zealand.

The effects of group size on aggression when mixing unacquainted sows in outdoor paddocks.
J. N. Marchant-Forde*, J. P. Garner1, A. K. Johnson1, R. M. Marchant-Forde2, and D. C. Lay1, USDA-ARS, West Lafayette, IN, 1Purdue University, West Lafayette, IN, 2Iowa State University, Ames.

Association of sow fear with prolactin and cortisol concentrations pre- and post-farrowing.
C. E. Phillips*, Y. Z. Li1, L. J. Johnston2, G. C. Shurson1, J. Deen3, and C. Farmer4, 1University of Minnesota, St. Paul, 2West Central Research and Outreach Center, Morris, MN, 3University of Minnesota-Morris, Morris, 4College of Veterinary Medicine, St. Paul, MN, 5Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, Quebec, Canada.

Animal Health I
Sponsor: Elanco Animal Health

Molecular basis of virulence in Staphylococcus aureus ovine mastitis.
C. Le Maréchal1,2, N. Seyffert1,4, J. Jardin5,2, D. Hernandez2, G. Jan1,2, V. Azevedo4, P. François1, J. Schrenzel1, S. Even1,2, N. Berкова1,2, R. Thiéry1, J. R. Fitzgerald3, S. Lortal*1,2, and Y. Le Loir1,2, 1INRA STLO, Rennes, France, 2AGROCAMPUS OUEST STLO, Rennes, France, 3ANSES, Sophia-Antipolis, France, 4ICB/UFMG, Belo Horizonte, MG, Brazil, 5University of Geneva Hospitals (HUG), Geneva, Switzerland, 6University of Edinburgh, Edinburgh, Scotland, United Kingdom.

Serological proteome analysis of Staphylococcus aureus strains isolated from gangrenous and subclinical ewe mastitis reveals core and accessory seroproteomes.
C. Le Maréchal1,2, J. Jardin5,2, G. Jan1,2, S. Even1,2, D. Hernandez2, P. François1, J. Schrenzel1, D. Demon1, E. Meyer1, N. Berkova1,2, R. Thiéry1, E. Vautrot1, S. Lortal*1,2, and Y. Le Loir1,2, 1INRA STLO, Rennes, France, 2AGROCAMPUS OUEST STLO, Rennes, France, 3ANSES, Sophia-Antipolis, France, 4University of Geneva Hospitals (HUG), Geneva, Switzerland, 5Ghent University, Faculty of Veterinary Medicine, Merelbeke, Belgium.
M30 Changes of plasma fatty acid and metabolites during the transition period in dairy cows with or without subclinical mastitis after calving. Y. Yang*, J. Wang*, S. Li*, D. Bu*, T. Yuan*, L. Zhou, and P. Sun, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Institute of Animal Science and Veterinary Medicine, Anhui Academy of Agricultural Sciences, Hefei, China.

M31 iTRAQ quantitative analysis of changes of serum protein from the cows in the periparturient period. S. S. Li, J. Q. Wang*, H. Y. Wei, Y. X. Yang, D. P. Bu, T. J. Yuan, and P. Sun, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

M32 Prevalence, transmission and impact of bovine leukemia in Michigan dairies. T. M. Byrn*, J. T. Houseman, R. J. Erskine*, P. C. Bartlett, C. Render*, C. Febvay, D. H. Norman, and J. R. Wright, 1Antel Biosystems Inc., Lansing, MI, 2Michigan State University, College of Veterinary Medicine, East Lansing, 3Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

M33 Relationship between test-day somatic cell count with test-day milk yields in Iranian Holstein cows. A. Laki, S. Babai, and M. Dehghan-Banadaky*, Department of Animal Sci., Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

M34 Effects of drying the udder using paper versus cloth towels on bacterial contamination of teat ends of lactating dairy cattle. C. N. Baloun*, S. I. Kehoe, and L. E. Baumann, University of Wisconsin-River Falls, River Falls.


M38 Cost analysis of feeding varying doses of Saccharomyces cerevisiae fermentation product on a commercial dairy. C. M. Shriver-Munsch*, E. M. Ramsing, J. R. Males, W. K. Sanchez, I. Yoon, and G. Bobe, 1Department of Animal Science, Oregon State University, Corvallis, 2Diamond V, Cedar Rapids, IA.

M39 The effect of feeding pasteurized or non-pasteurized waste milk on fecal populations and prevalence of Salmonella in dairy calves. J. A. Garcia*, T. S. Edrington, G. R. Hagevoort, R. F. Farrow, T. R. Callaway, N. A. Krueger, C. R. Anderson, and D. J. Nisbet, 1NMSU Ag Science Center, Clovis, NM, 2Food and Feed Safety Research Unit, Southern Plains Agricultural Research Center, USDA-ARS, College Station, TX.

M40 Effect of paste or wrap oxytetracycline treatment on papillomatous digital dermatitis. J. H. Higginson*, J. Walter, C. R. Kelton, 1University of Guelph, Guelph, Ontario, Canada, 2Cramer Mobile Bovine Veterinary Services, Stratford, Ontario, Canada.


M44 Partitioning innate immune response variation: How much variation is due to the animal? M. D. Sellers*, L. E. Hultbert, C. J. Cobb, and M. A. Ballou, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Department of Animal Sciences, University of California-Davis, Davis.

M45 Effect of various dosages of Saccharomyces cerevisiae fermentation product on health and metabolism of multiparous dairy cows. C. M. Shriver-Munsch*, E. M. Ramsing, J. R. Males, W. K. Sanchez, I. Yoon, and G. Bobe, 1Department of Animal Science, Oregon State University, Corvallis, 2Diamond V, Cedar Rapids, IA.

M46 Influence of starch sources in prepartum diet on colostrum quality and blood immunoglobulin concentration of calves. F. Fatimah, H. Mirzaei Alamouti*, and A. Shahsavar, 1Department of Animal Science, University of Ilam, Iran, 2Department of Animal Science, University of Zanjan, Iran.
Animal Health

Johne's Disease

M47 Development of a lab-on-a-chip immunoassay system for diagnosis of Johne’s disease.
A. Wadhwa*, K. Yang1, X. Liu, J. Bannantine2, S. Eda1, and J. Wu1, 1University of Tennessee Knoxville, Knoxville, 2United States Department of Agriculture, Ames, IA.

M48 Immune activation after immunization of neonatal calves with a commercial heat-killed vaccine.
J. R. Stabel*, W. R. Waters1, J. P. Bannantine1, and K. Lyashchenko2, 1USDA-ARS-National Animal Disease Center, Ames, IA, 2Chembio Diagnostic Systems, Medford, NY.

M49 Phenotype array analysis of Mycobacterium avium ssp. paratuberculosis K10 phoP mutant and wild-type.

M50 Characterization of monoclonal antibodies specific for molecules uniquely expressed on bovine dendritic cells.
G. S. Abdellrazeq*, S. Tomida2, and W. C. Davis1, 1Alexandria University, Edfina, Behara Province, Egypt, 2Washington State University, Pullman.

M51 Identification of Mycobacterium avium ssp. paratuberculosis genotypes on Alberta dairy farms with high-resolution melt analysis of multiallelic short sequence repeats.
J. David, R. Mortier, H. Barkema, and J. De Buck*, Dept. of Production Animal Health, Fac. Veterinary Medicine, Calgary, Alberta, Canada.

M52 Complete genome sequence of a Mycobacterium avium subspecies paratuberculosis Isolate from a patient with Crohn’s disease.
L. Li*, J. P. Bannantine1, S. Sreevatsan1, and V. Kapur1, 1Penn State University, University Park, 2National Animal Disease Center USDA-ARS, Ames, IA, 3University of Minnesota, St. Paul.

M53 Salmonella delivery system to develop an efficient vaccine against Mycobacterium avium ssp. paratuberculosis.

M54 Exploring M. paratuberculosis pathogenesis using an in vitro cell culture passage model.
J. L. Everman*1 and L. E. Bermudez2, 1Department of Microbiology, College of Science, Oregon State University, Corvallis, 2Department of Biomedical Science, College of Veterinary Medicine, Oregon State University, Corvallis.

Beef Species

Beef Cattle Production

M55 Effects of Saccharomyces cerevisiae fermentation product on ruminal VFA production when supplemented to various beef feedlot diets.
I. Yoon*, C. Belknap, J. Butler, J. Lin, A. Brainard, and T. Werner, Diamond V, Cedar Rapids, IA.

M56 Body components on finishing crossbred beef heifers of different residual feed intake groups.
S. F. Reis*, P. V. P. Paulino1, S. R. Medeiros2, G. L. D. Feijó2, R. A. A. Torres Júnior2, D. A. Fausto3, M. A. Rezende1, and S. C. Valadares Filho1, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Embrapa Gado de Corte, Campo Grande, Mato Grosso do Sul, Brazil, 3University of São Paulo, Piracicaba, São Paulo, Brazil.

M57 Finishing steers and bulls with high-vitamin E diets: Effect on circulating immune cells and creatine kinase at time of slaughter.
C. Reyes, C. Fuentes, and R. E. Larraín*, Pontificia Universidad Catolica de Chile, Santiago, Chile.

M58 Vitamin D3 effect on metabolite levels in plasma and longissimus muscle of steers fed zilpaterol hydrochloride.
K. T. Korn*, M. C. Claeyss, R. P. Lemenager, and J. P. Schoonmaker, Purdue University, West Lafayette, IN.

M59 Early metabolic imprinting events increase marbling scores in fed cattle.
M. A. McCann*, J. M. Scheffler1, S. P. Greiner1, M. D. Hanigan2, G. A. Bridges1, S. L. Lake4, J. M. Stevenson1, H. Jiang1, T. L. Scheffler1, and D. E. Gerrard1, 1Dept. of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, 2Dept. of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 3University of Minnesota, North Central ROC, Grand Rapids, 4Dept. of Animal Sciences, University of Wyoming, Laramie.
Breeding and Genetics
Dairy Cattle Breeding

M60 Differences in the production and reproduction traits of embryo transfer full siblings living under different and identical conditions.
J. Bezdieck*,1 and J. Riha2, 1AgriResearch Rapotin Ltd., Rapotin, Czech Republic, 2Research Institute for Cattle Breeding, Ltd., Rapotin, Czech Republic.

M61 Female fertility in a Guzerat dairy herd: Heterogeneity of variance components for calving intervals.
J. C. C. Panetto*,1, 2, J. E. Val*, 1, C. R. Marcondes1, 2, M. G. C. D. Peixoto3, 4, R. S. Verneque2, 4, J. B. S. Ferraz2, 4, and B. L. Golden5, 6, 1Curso de Veterinária, Universidade de Uberaba, Uberaba, MG, Brazil, 2Embrapa Gado de Leite, Juiz de Fora, MG, Brazil, 3Faculdade de Medicina de Ribeirão Preto - USP, Ribeirão Preto, SP, Brazil, 4Embrapa Pecuária Sudeste, São Carlos, SP, Brazil, 5Faculdade de Zootecnia e Engenharia de Alimentos - USP, Pirassununga, SP, Brazil, 6Dairy Science Department, California Polytechnic State University, San Luis Obispo.

M62 Detection of early pregnancy and embryonic loss in dairy cows using BioPRYN and a NEW PSPB-based ELISA.
J. R. Branen*, 1, O. Giordano2, C. Passavant1, M. J. Howard3, P. M. Fricke4, and R. G. Sasser5, 1BioTracking LLC, Moscow, ID, 2University of Wisconsin, Madison.

M63 Comparison of BioPRYN and a new pregnancy-specific protein B (PSPB) enzyme-linked immunosorbent assay (ELISA) for determination of early pregnancy status in dairy cattle.
J. R. Branen*, 1, C. Passavant1, A. Phatak1, D. Snider1, J. Azevedo1, J. M. Howard1, D. Pals1, and R. G. Sasser1, 1BioTracking LLC, Moscow, ID, 2Consulting Veterinarian, Waterford, CA, 3Strategy Lab & Dairy Consulting, Visalia, CA, 4Alta California, Hilmer, CA.

M64 Survey of genetic selection practices on pasture-based dairy farms in the United States.
K. D. Gay*, 1, T. D. Nennich, and M. M. Schutz, Purdue University, West Lafayette, IN.

M65 Estimating field conception rates for Holstein sires in US herds (ACE index) and conception rate correlation from the same sires used for AI after natural estrus and timed AI breedings.
A. H. Souza*, 1, H. Rivera1, P. Crump1, and V. Cabrera1, 1Department of Dairy Science, University of Wisconsin, Madison, 2Accelerated Genetics, Baraboo, WI.

M66 Effects of dam’s dry period length on heifer development.
H. D. Norman and J. L. Hutchison*, Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD.

M67 Changes in the use of young bulls.
K. M. Olson*, 1, J. L. Hutchinson2, P. M. VanRaden3, and H. D. Norman4, 1National Association of Animal Breeders, Columbia, MO, 2Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

M68 Body condition score comparisons of crossbred Normande-sired cows with herd mates sired by Ayrshire, Holstein, and Jersey.

M69 Use of cow culling to help meet compliance for somatic cell standards.
H. D. Norman and J. R. Wright*, Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD.

M70 The association of high and low parent average with performance for yield, somatic cell score, and productive life in individual herds.
C. D. Dechow*, 1, H. D. Norman2, R. C. Goodling1, and J. R. Wright1, 1Pennsylvania State University, University Park, 2Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

M71 Genetic differences between New Zealand and North American dairy cows alter milk production and gluconeogenic enzyme expression.
H. M. White*, 1, S. S. Donkin1, M. C. Lucy2, T. M. Grala3, and J. R. Roche3, 1Purdue University, West Lafayette, IN, 2University of Missouri, Columbia, 3DairyNZ Ltd., Hamilton, New Zealand.

M72 Verification of factors to estimate daily milk yield from one milking of cows milked twice daily.
M. M. Schutz*1 and H. D. Norman2, 1Purdue University, West Lafayette, IN, 2USDA-ARS Animal Improvement Programs Laboratory, Beltsville, MD.

M73 Estimation of daily yield of major fatty acids from single milking.
V. Arnould1,2, F. Froidmont3, H. N. Nguyen4, F. Deharenge1, P. Dardenne5, A. Gillon6, N. Gengler1,1, and H. Soyeurt*,2,3, 1CONVIS, Herdbook Service Élévation et génétique, Ettelbruck, Luxembourg, 2University of Liège, Gembloux Agro Bio-Tech, Animal Science Unit, Gembloux, Namur, Belgium, 3National Fund for Scientific Research, Brussels, Brussels, Belgium, 4Production and Sectors Department, Walloon Agricultural Research Centre, Gembloux, Namur, Belgium, 5Quality of Agricultural Products Department, Walloon Agricultural Research Centre, Gembloux, Namur, Belgium, 6Walloon Breeding Association, Ciney, Namur, Belgium.

M74 Comparison of lactation performance in a panel of genetically diverse inbred mouse strains.
D. L. Hadseill*, W. Olea1, J. Wei2, L. A. Hadseill1, and P. Williamson3, 1Baylor College of Medicine, Houston, TX, 2The University of Sydney, Sydney, NSW, Australia.
Statistical comparison of persistency among calving seasons of Iranian Holsteins.
R. Izadkhah*, H. Farhangfar, M. H. Fathi Nasri, and H. Naemipour, Birjand University, Birjand, Iran.

Genetic parameters estimates to Colombian buffalo milk yield under random regression models.
N. Hurtado-Lugo*1,2, S. Sousa Júnior1, M. Cerón1, R. Aspicueta1, E. Acevedo1, S. Gutierrez3, L. Albuquerque1, D. Santos1, and H. Tonhati1, 1UNESP Faculty of Agriculture and Veterinary Sciences, State University of São Paulo, Jaboraticabal, SP, Brazil, 2Genetics and Animal Improvement Group, Faculty of Agriculture Sciences, University of Antioquia, Medellin, Colombia.

Mathematical modeling of the lactation curve of domestic donkey (Equus asinus).
A. M. Guastella*, A. Criscione1, S. Bordonaro1, D. Marletta1, R. Steri2, and N. P. P. Macciotta1, 1Università di Catania, Catania, Italy, 2Università di Sassari, Sassari, Italy.

Breeding and Genetics
Poultry Breeding

Genetics of immunocompetence traits in Aseel native chicken of India.
S. Choudhary*, S. Kumar2, and B. Nautiyal, 1MJP Rohilkhand University, Bareilly, U.P. India, 2Central Avian Research Institute, Bareilly, U.P. India.

Study on the diversity of Yunnan original chicken meat using NIR spectroscopy based on principal component analysis and cluster analysis.
J.-L. Wu1, X. Gao*, Y.-Z. Li1, Y.-F. Yin2, and Y. Li2, 1Yunnan Animal Science and Veterinary Institute, Kunming, Yunnan, China, 2Sweden Perten Instruments Representative Office in China, Beijing, China, 3University of Minnesota, Morris.

Breed and egg size effects on weight loss during incubation of Broiler eggs.

Estimation of genetic parameters for body traits in Mazandaran indigenous chicken.
S. Niknafs*, A. Nejati Javaremi, H. Mehrabani Yeganeh, and A. Fatemi, Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.

Genetic and phenotypic trends for body weight and egg production in Mazandaran indigenous chicken.
S. Niknafs*, A. Nejati Javaremi, H. Mehrabani Yeganeh, and A. Fatemi, Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.

Heritability and genetic correlation estimates for egg production related traits in Mazandaran indigenous chicken.
S. Niknafs*, A. Nejati Javaremi, H. Mehrabani Yeganeh, and A. Fatemi, Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.

Dairy Foods
Chemistry, Processing, and Analysis

Effects of salts on foaming properties of milk protein concentrate at neutral pH.
J. Han* and B. Vardhanabhuti, University of Missouri, Columbia.

Microencapsulation of probiotic cultures using polymerized whey proteins as wall material.
Z. Zheng1, Y. Jiang1, X. Chen1, J. Wang2, J. Cheng3, H. Zhang4, and M. Guo*, 1University of Vermont, Burlington, 2Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China.

Proteolysis in UHT milk produced with CO2 added raw milk.
P. C. B. Vianna1, E. H. M. Walter2, M. E. F. Dias3*, J. A. Faria1, F. M. Netto1, and M. L. Gigante3, 1Universidade Norte do Paraná, Londrina, SP, Brazil, 2Universidade Federal do Pampa, Bagé, SP, Brazil, 3Universidade Estadual de Campinas, Campinas, SP, Brazil.

The effect of commercial sterilization regimes on micellar casein concentrates (MCC).
C. M. Beliciu, A. Sauer*, and C. I. Moraru, Cornell University, Ithaca, NY.

The crystallization of large lactose crystals in skim milk concentrate.
B. Toledo* and F. X. Milani, University of Wisconsin-Madison, Madison.

Investigation of twin-screw extrusion puffing of non-fat dry milk powder and starch to produce puffs and crisps for snack and ingredient uses.
A. J. Tremaine* and T. C. Schoenfuss, University of Minnesota, Department of Food Science and Nutrition, St. Paul.
M90  Browning and pH of UHT whole milk as influenced by time and temperature of storage.
M. E. F. Dias*, P. C. B. Vianna, and M. L. Gigante. 1Universidade Estadual de Campinas, Campinas, SP/Brazil, 2Universidade Norte do Paraná, Londrina, PR/Brazil.

M91  Evaluation of vacuum packaging on physical properties and solubility of dry dairy ingredients.
H. Eshpari* and P. Tong. California Polytechnic State University, San Luis Obispo.

M92  Hydrophobic aroma encapsulation in whey protein nanoparticles.
H. J. Giroux and M. Britten*. Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

M93  Formation of β-lactoglobulin/alginate nanoemulsion containing coenzyme Q10.

M94  Homogenization and lipase addition influence methyl ketone generation.

M95  Use of fluorescence spectroscopy for monitoring vitamin D fortification of skim milk.
J. K. Amamcharla* and L. E. Metzger. Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

M96  Milk composition evaluation as screening criteria to investigate fraudulent addition of cheese whey to milk.

M97  Measuring milk treatments and storage temperature effects on fat globules aggregation.
N. Fucà1, G. Impoco1, M. Caccamo*1, and G. Licitra1,2, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2DISPA, Catania University, Catania, Italy.

M98  Effects of residual lactose and galactose on cheese moisture determination.

M99  Quantification of textural properties of composite milk gels using laser-scanning fluorescence confocal microscopy and image texture analysis.
R. Hennessy*, L. Laiho1, A. Laubscher2, and R. Jimenez-Flores2, 1Cal Poly Biomedical Engineering, San Luis Obispo, 2Cal Poly, DPTC, San Luis Obispo.

M100  Evaluation of two kits based on microbial inhibition for detection of antimicrobial residues in milk.

M101  Validation of CombiScope FTIR for milk urea evaluation in raw milk.

M102  Identification of starch in cheese using laser scanning confocal microscopy.
W. R. McManus, E. N. Oberg, R. Wadhwani, K. M. Brown, and D. J. McMahon*. Western Dairy Center, Utah State University, Logan.

Extension Education

M103  Assessing a comprehensive udder health and mastitis control program for practicing dairy veterinarians.
G. M. Schuenemann*, P. Rajala-Schultz, E. Gordon, S. Bas, and J. D. Workman. Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.

M104  The relationships between weight, age, and average daily gain of Georgia 4-H & FFA commercial dairy heifers.

M105  Advising and technical support for the formulation and evaluation of diets for dairy cows and goats: The extension experience of Antonio Narro Agricultural University in north Mexico.

M106  An extension tool to assess forage production and utilization on dairy farms.
M.-C. Coulombe*, D. Pellerin1, R. Roy2, G. Allard3, P. Savoie1, D. Parent1, and E. Charbonneau1, 1Université Laval, Quebec, Quebec, Canada, 2Valacta, Dairy production centre of expertise, Ste-Anne-de-Bellevue, Quebec, Canada, 3Agriculture and Agri-Food Canada, Soils and Crops Research and Development Centre, Quebec, Quebec, Canada.
Fiber production and fiber characteristics of alpacas farmed in United States.
T. Wuliji*, Lincoln University, Jefferson City, MO.

Advice from the experts: Processor assessment of planning considerations for an on-farm dairy processing enterprise.
E. A. Chaney* and J. M. Bewley, University of Kentucky, Lexington.

Using whole farm assessment tools to identify strategies for change to increase dairy farm profitability.

Evaluation of the use of pasture pork demonstration sites for on-farm educational programming.
N. C. Whiteley* and M. L. Eley, North Carolina A&T State University, Greensboro.

Summary of Texas Panhandle dairy producer forage use.

An overview of compost bedded pack management in Kentucky.

Weighted cost of capital on dairy farms in Florida.
K. Kaniyamattam*, A. De Vries1, and D. T. Galligan2, 1University of Florida, Gainesville, 2University of Pennsylvania, Kennett Square.

Current situation and further training needs: A case of Master Goat Producers.
U. Kariki1, N. K. Gurung1, O. Bolden-Tiller1, and L. B. Karki2, 1Tuskegee University, Tuskegee, AL, 2PadmaDal Memorial Foundation, Auburn, AL.

Judging Pro: A dynamic software program for scoring judging contests.

Forages and Pastures

Antinutritive Compounds in Forages

Fermentation and microbial protein synthesis from anthocyanidin accumulating Lc-alfalfa in rumen liquid.
A. Jonker1,2, M. Y. Gruber2, Y. Wang3, D. A. Christensen4, J. J. McKinnon1, and P. Yu5, 1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Saskatchewan Research Station, Agriculture and Agri-Food Canada, Saskatoon, Saskatchewan, Canada, 3Lethbridge Research Station, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.

How tannin deactivation can affect nutrient digestibility and metabolizable energy contents of sainfoin (Onobrychis vicifolia)?
H. Khalilvandi-Behroozyar1,2, M. Dehghan-Banadak1, and K. Rezayazdi1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Effects of sainfoin (Onobrychis vicifolia) processing for tannin deactivation on nitrogen content of cell wall and available nitrogen.
H. Khalilvandi-Behroozyar1,2, K. Rezayazdi1, and M. Dehghan-Banadaki1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Effects of tannin deactivation with different chemicals on protein fractions of sainfoin (Onobrychis vicifolia Scop.) in Cornell Net Carbohydrate and Protein System (CNCPs).
H. Khalilvandi-Behroozyar1,2, M. Dehghan-Banadak1, and K. Rezayazdi1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Effects of chemical treatments for tannin deactivation on in situ organic matter degradability of sainfoin (Onobrychis vicifolia).
H. Khalilvandi-Behroozyar1,2, K. Rezayazdi1, and M. Dehghan-Banadaki1, 1Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 2Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Chemical compositions and anti-nutritive factors of Acacia mangium.
T. Clavero* and R. Razz, Centro de Transferencia de Tecnologia en Pastos y Forrajes, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.

Nutrient composition, polyphenolic compound content, in situ degradation and in vitro rumen fermentation characteristics of leaves from three mulberry species.
H. J. Yang* and W. X. Wang, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.

Fluoride content of leaves and stems of alfalfa hay at different stages of maturity.
C. Arzola*, M. R. Murphy1, J. Salinas1, R. Copado1, A. Corral1, O. Ruiz1, C. Rodriguez2, J. J. McKinnon1, and P. Yu5, 1University Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico, 2University of Illinois, Urbana-Champaign, 3Universidad Autonoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico.

Distribution of antinibovory compounds in Flourensia cernua.
Degradation kinetics of calcium caseinate incubated in vitro with increasing levels of tannin extract from *Acacia mearnsii* with or without polyethylene glycol addition.
D. Zeni*, A. C. Fluck, G. V. Kozloski, A. A. Martins, F. Zanferari, and S. Stefanello, *Universidade Federal de Santa Maria*, Santa Maria, RS, Brazil.

Degradation kinetics of cellulose incubated in vitro with increasing levels of tannin extract from *Acacia mearnsii* with or without polyethylene glycol addition.

Nutrient and tannin contents of purple prairie clover (*Petalostemon purpureum*) harvested at different growth stages.
L. Jin1,2, Z. Xu1, A. D. Iwaasa3, Y. G. Zhang4, M. P. Schellenberg5, T. A. McAllister3, and Y. Wang1, 2Agriculture and Agri-Food Canada, Lethbridge Reserach Centre, Lethbridge, AB, Canada, 3Department of Animal Science, Northeast Agricultural University, China, 2SPARC-AAFC, Swift Current, SK, Canada.

Evaluation of tannins in indigenous forage plants of the Brazilian semi-arid.
M. L. Chizzotti*1,2, F. R. B. Oliveira3, R. T. S. Rodrigues4, K. C. Busato2, T. S. Silva5, J. A. Siqueira1, and F. H. M. Chizzotti1, 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.

Effect of grazing toxic tall fescue prior to or immediately following insemination on beef cattle reproductive performance.
M. G. Burns*1, J. G. Andrae1, S. L. Pratt1, W. C. Bridges1, and F. N. Schrick1, 1Clemson University, Clemson, SC, 2University of Tennessee, Knoxville.

Endophyte-infected tall fescue seed extract induces constriction of bovine vasculature.
A. P. Foote*1, D. L. Harmon1, K. R. Brown1, J. R. Strickland2, K. R. McLeod1, L. P. Bush1, and J. L. Klotz1, 1University of Kentucky, Lexington, 2USDA-ARS, FAPRU, Lexington, KY.

Contractile response of bovine lateral saphenous vein to ergovaline, serotonin, α1a, α1x, and α2x-adrenergic receptor agonists relative to time off endophyte-infected tall fescue.
J. L. Klotz1, G. E. Aiken1, A. P. Foote*2, L. P. Bush1, K. R. Brown1, B. M. Goff1, and J. R. Strickland1, 1USDA-ARS-FAPRU, Lexington, KY, 2University of Kentucky, Lexington.

Differences in chemical composition of crown rust resistant and susceptible oat cultivars in Northern Mexico.

**Forages and Pastures**

**Forage Production and Quality**

Dry matter yield and chemical composition of twenty-eight alfalfa cultivars grown in Brazil.

Tillering pattern and dry matter production of Mombasa grass submitted to nitrogen fertilization during regrowth.
A. F. Garcez Neto*1,2, K. F. Gobbi2,3, T. M. Dos Santos2, E. E. B. Baldasso1, and I. Da Silva1, 1Federal University of Parana, Palotina, Parana, Brazil, 2Agronomic Institute of Parana, Paranavai, Parana, Brazil, 3Federal University of Vicos, Vicsa, Minas Gerais, Brazil.

Effects of growing conditions on alfalfa hay quality and production.

Nutritional value and silage fermentation parameters of elder (*Sambucus nigra*) as a supplement for dairy cattle in the Colombian Tropics.

Organic fertilization improves growth of *Paulownia* spp.

Ruminal degradability of crude protein of Marandu grasses.
A. J. D. Pacheco Junior*1,2, F. A. P. Santos1, C. M. M. Bittar1, L. R. D. Agostinho Neto1, R. A. M. Vieira2, L. O. Tedeschi2, B. C. Matos3, and G. B. Mourão1, 1University of São Paulo, University of Sao Paulo, USP/ESALQ, Piracicaba, SP, Brazil, 2State University of North Fluminense Darcy Ribeiro, State University of North Fluminense Darcy Ribeiro, Campos dos Goytacazes, RJ, Brazil, 3Texas A&M University, Texas A&M University, College Station.
Effect of stage of maturity of alfalfa hay upon in vitro dry matter and crude protein digestibility.
R. Copado-Garcia*, O. Serna1, C. Arzola2, O. Ruiz1, C. Rodriguez1, A. Corral1, and H. Gaytan1, 1Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico, 2INIFAP, Chihuahua, Chihuahua, Mexico.

Nutrient composition, metabolizable energy, in situ rumen degradation and in vitro fermentation characteristics of linted cottonseed hulls, delinted cottonseed hulls and cottonseed linter waste.
H. J. Yang* and Y. K. Bo, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.

Chemical composition and nutritional value of Prosopis laevigata harvested at three different maturation stage.

Graduate Student Competition: ADSA Dairy Foods Poster Competition
Chair: Rafael Jimenez-Flores, California Polytechnic State University

The influence of process time and heat treatment on bleaching efficacy of liquid whey and retentate.
X. Li* and M. A. Drake, North Carolina State University, Raleigh.

Impact of bleaching on flavor of 34% whey protein concentrate and benzoic acid concentration in dried whey proteins.
M. A. Listiyani*, R. E. Campbell, R. E. Miracle, L. O. Dean, and M. A. Drake, North Carolina State University, Raleigh.

The influence of bleaching agent, solids concentration and temperature on bleaching efficacy and volatile components of fluid whey.
A. J. Fox* and M. A. Drake, North Carolina State University, Raleigh.

Activation of lactoperoxidase for the bleaching of fluid whey.
R. E. Campbell*, E. J. Kang1, E. Bastian2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Glanbia Nutritional Inc., Twin Falls, ID.

Bleaching efficacy of ozone gas in liquid whey and its effects on flavor of 80% whey protein concentrate.
T. J. Smith* and M. A. Drake, North Carolina State University, Raleigh.

The impact of sodium reduction on the flavor, texture and flavor chemistry of full fat and low fat Cheddar cheese.
M. K. Kim*, R. E. Miracle1, D. J. McMahon2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Utah State University, Logan.

Fortification of milk for Cheddar cheese manufacture using skim milk powder.
A. C. Moynihan* and P. L. H. McSweeney, University College Cork, Cork, Ireland.

Rapid measurement of lactose concentration in cheese whey by using handheld blood glucose meter.
A. C. Biswas*, J. K. Amamcharla, and L. E. Metzger, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

Organic acid identification and quantification in low-fat Cheddar cheese by capillary zone electrophoresis.
R. Kumar* and T. C. Schoenfuss, University of Minnesota, Department of Food Science and Nutrition, St. Paul.

Stability of sterilized micellar casein concentrates (MCC) during storage.
A. Sauer* and C. I. Moraru, Cornell University, Ithaca, NY.

Use of capillary gel electrophoresis for quantification of individual milk proteins in ultra- and microfiltration retentate.
P. Salunke*, C. Marella, and L. E. Metzger, Midwest Dairy Foods Research Centre, South Dakota State University, Brookings.

Incorporation of whey:buttermilk heat-denatured protein aggregates in model set-type yogurt.
M. Saffan*, V. Richard1, S. F. Gauthier2, M. Britten2, and Y. Pouliot2, 1STELA Dairy Research Center, Institute of Nutraceuticals and Functional Foods (INAF), Université Laval, Québec, QC, Canada, 2Food Research and Development Center (FRDC), Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

Linking environmental and sensory qualities of a Vermont artisan cheese.
A. Greenbaum*, S. Carpino2, M. Almena1, S. Bosworth1, P. Kindstedt1, and A. Trubek1, 1University of Vermont, Burlington, 2CorReLa, Ragusa, Italy.
Graduate Student Competition:
ADSA Production Division Graduate Student Poster Competition - MS Division
Chair: Adam Lock

M155
Chewing activities of dairy heifers precision-fed a low or high forage ration at four levels of dry distillers grain.

M156
Effect of one or two treatments of prostaglandin F₂α prior to Cosynch in lactating dairy cattle.
K. D. Baldock*, M. E. Wilson¹, and D. L. Smith¹, ¹Eastern New Mexico University, Portales, ²West Virginia University, Morgantown.

M157
The effects of extruding wheat dried distillers grains with solubles with peas or canola meal on ruminal fermentation, nutrient digestion and milk production in lactating Holstein dairy cows.
R. M. Claassen*, D. A. Christensen, and T. Mutsangwa, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

M158
Ruminal degradation and intestinal protein digestion of steam-flaked soybeans.
H. R. Bruns*, K. J. Herrick¹, K. F. Kalscheur¹, D. J. Schingoethe¹, R. Rosenboom², G. Dophen³, and A. R. Hippen¹, ¹South Dakota State University, Brookings, ²Deluxe Feeds, Sheldon, IA.

M159
A simulation assessment of long-term nitrogen runoff reduction from dairy pastures.
R. White* and J. L. Capper, Washington State University, Pullman.

M160
Characterization of management practices utilized by low somatic cell count Kentucky dairy herds.
A. E. Sterrett* and J. M. Bewley, University of Kentucky, Lexington.

M161
Evaluation of an electronic cow-side glucose meter for diagnosing insulin resistance in Holstein dairy cows.
J. A. M. Wittrock*¹, T. F. Duffield¹, S. Riuzzi², and S. J. LeBlanc³, ¹University of Guelph, Guelph, Ontario, Canada, ²University of Padua, Padova, Italy.

M162
Effect of treatment with human chorionic gonadotropin (hCG) on day 5 after timed artificial insemination (TAI) on fertility in lactating Holstein cows.

M163
Evaluation of three-dimensional accelerometers to monitor motion changes relative to estrus behavior.
W. A. Smith*, J. M. Bewley, and W. J. Silvia, University of Kentucky, Lexington.

M164
Effects of hutches and fortified waste milk on growth and health in preweaned Holstein dairy calves.
K. L. Machado*, R. E. James¹, M. L. McGilliard¹, and T. J. Earleywine¹, ¹Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, ²Land O Lakes Animal Milk Products, Shoreview, MN.

M165
Effect of postpartum diseases on reproduction of grazing dairy cows.

Graduate Student Competition:
ADSA Production Division Graduate Student Poster Competition - PhD Division
Chair: Adam Lock

M166
Effects of using protective cover sheaths at the time of AI on fertility of lactating dairy cows.
S. Bas*, G. M. Schuenemann, A. Hoet, E. Gordon, D. Sanders, and K. N. Galvao, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.

M167
Metabolism of ruminally dosed butyrate and lactose in lactating dairy cows.
K. J. Herrick*, A. R. Hippen¹, K. F. Kalscheur¹, D. J. Schingoethe¹, S. C. Moreland¹, and J. E. van Eys², ¹South Dakota State University, Brookings, ²Nutriad Inc., Elgin, IL.

M168
Antioxidant activity of calf milk replacers.
M. A. Soberon*, D. R. Cherney, and R. H. Liu, Cornell University, Ithaca, NY.

M169
In situ ruminal degradability of diets, dried distillers grains with solubles and soybean meal under different rumen conditions.

M170
Effect of air-flow controlled chambers and cows of contrasting feed efficiency on methane emission.
C. Arndt*, M. A. Wattiaux¹, J. M. Powell¹, and M. J. Aguerre¹, ¹Department of Dairy Science, University of Wisconsin, Madison, ²USDA-ARS U.S. Dairy Forage Research Center, Madison, WI.
Comparison of two resynchronization protocols initiated at different intervals after insemination on fertility in lactating dairy cows.
R. G. S. Bruno1,2, J. G. N. Moraes1, J. A. Hernández-Rivera1,2, K. J. Lager1,2, P. R. B. Silva3, A. L. A. Scanalet3, L. G. D. Mendonça4, R. C. Chebel5, and T. R. Bilby6, *Texas AgriLife Research and Extension Service, Texas A&M System, College Station, 1Department of Agricultural Science, West Texas A&M University, Canyon, 2Department of Veterinary Population, University of Minnesota, St. Paul.

Antimicrobial usage on large herds in Wisconsin.
L. Oliveira* and P. L. Ruegg, University of Wisconsin, Madison.

Milk production, milk composition and first service pregnancy rate in lactating Holstein cows fed a lipid-encapsulated supplement containing trans-10, cis-12 and cis-9, trans-11 conjugated linoleic acids.

A hoof biopsy procedure of front and rear claws for gene expression analysis and its relation to locomotion in dairy cows.

Variation in failure of passive transfer and growth rates of calves on 38 farms in British Columbia.

Comparisons of udder health and milk quality in North Carolina organic and conventional pasture-based dairy herds.

Effect of conjugated linoleic acid supplementation on in vitro bovine embryo production and cryopreservation.
V. A. Absalón Medina*, S. J. Bedford Guayas1, R. O. Gilbert1, L. C. Siqueira2, G. Esposito2, A. Schneider3, S. H. Cheong4, and W. R. Butler5, 1Cornell University, Ithaca, NY, 2Universidade Federal de Santa Maria, Santa Maria, RS, Brasil, 3Università degli Studi di Napoli Federico II, Portici, Napoli, Italia, 4Universidade Federal de Pelotas, Pelotas, RS, Brasil.

Net requirements of calcium and phosphorus for gain of Nellore and Nellore x Bos taurus crossbreds.
M. P. Gionbelli1, M. I. Marcondes1,2, S. C. Valadares Filho1, L. F. Prados1, and M. L. Chizzotti2, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Universidade Federal de Lavras, Lavras, MG, Brazil, 3Instituto Nacional de Ciência e Tecnologia - Ciência Animal, Brazil.

Effects of maternal body condition and breeding season forage type on beef heifer growth.
J. D. Patterson*, M. L. Looper1, B. C. Williamson1, and C. F. Rosenkranz1, 1University of Arkansas, Fayetteville, 2USDA/ARS DBSFRC, Booneville, AR.

Effects of colostrum intake and pre-weaning nutrient intake on post-weaning feed efficiency and voluntary feed intake.
F. Soberon* and M. E. Van Amburgh, Cornell University, Ithaca, NY.

Interactions of residual feed intake and other performance parameters of Japanese Black (Wagyu) bulls.
M. McGee1, C. M. Welch1, J. B. Hall1, and W. Small1, 1University of Idaho, Moscow, 2University of Idaho Nancy M. Cummings Research, Education, and Extension Center, Carmen, 3AgriBeef Snake River Farms, American Falls, ID.

Feeding or passive transfer of Anti-IL-10 peptide antibodies suppresses growth and feed efficiency in chicks.

Empty body composition of Nellore bulls classified for residual feed intake.
E. F. M. Bonilha1, F. L. Araújo2, S. F. M. Bonilha3, and R. H. Branco4, 1Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Body and carcass fat of Nellore bulls classified for residual feed intake.
S. F. M. Bonilha1, R. H. Branco2, K. Zarzi3, M. E. Z. Mercadante4, J. N. S. G. Cyrillo4, and L. A. Figueiredo5, 1Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Describing DMI and growth patterns in beef steers during the finishing period.
N. Vargas Jurado*, G. Scaglia4, W. S. Swecker1, D. A. Fiske1, J. P. S. Neel6, J. P. Fontenot7, and R. M. Lewis1, 1Virginia Tech, Blacksburg, 2Louisiana State University, Iberia Research Station, Jeannerette, 3USDA-ARS, Beaver, WV.

Effects of heat stress on proliferation, protein turnover, and levels of heat shock protein mRNAs in cultured porcine muscle satellite cells.

Effects of increased protein and energy fed in milk replacer and heat stress on growth parameters of neonatal holstein bull calves.
A. J. Krenek*, G. A. Holub1, T. A. Tomaszewski2, and C. C. Stanley3, 1Texas A&M University, College Station, 2Land O Lakes Purina Feed, Amarillo, TX.
**M188**

Indirect methods for estimation BW of crossbreed Holstein-Jersey heifers.


**M189**

Effects of rice or wheat straw as ingredients in a TMR on Holstein heifer growth.


**M190**

Effects of pre-weaning nutrient intake in the developing mammary parenchymal tissue and fat pad.

F. Soberon and M. E. Van Amburgh, *Cornell University, Ithaca, NY.

**M191**

Effect of diet metabolizable protein:metabolizable energy ratio on growth parameters and mammary gland development of crossbred Holstein-Jersey heifers reared on an accelerated growth program.

B. C. Matos*, C. M. M. Bittar, W. R. S. Mattos, G. B. Mourao, and L. F. Silveira, University of Sao Paulo, USP/ESALQ, Piracicaba, SP, Brazil.

**M192**

Milk diet affects glucose transporters in skeletal muscle of neonatal calves.

U. Schönhusen, C. Rehfeldt, J. Steinhoff-Wagner, and H. M. Hammon*, *Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

**Lactation Biology 1**

**M193**

Essential amino acids significantly contribute to the energy status in short-term MAC-T cell cultures.

V. S. Lyman1, M. L. Bell1, W. A. D. Nanyamwaje2,3, E. M. England1, J. A. D. R. N. Appuhamy4, and M. D. Hanigan1, *Virginia Polytechnic Institute and State University, Blacksburg, 2University of Guelph, Guelph, ON, Canada.

**M194**

Mammary uptake of fatty acids varying in chain length and unsaturation supplied by intravenous triglyceride infusion.


**M195**

Conjugated linoleic acid-induced milk fat depression in lactating ewes is accompanied by reduced expression of genes involved in mammary lipid synthesis.

M. Hussein*1, K. H. Harvatine1, W. M. P. B. Weerasinghe1, L. A. Sinclair2, and D. E. Bauman1, *Cornell University, Ithaca, NY, 2Pennsylvania State University, University Park, 3Harper Adams University College, Newport, Shropshire, UK.

**M196**

Characterization of a novel bovine mammary epithelial cell line.

P. Bernier-Dodier*1,2, G. Tremblay1, and P. Lacasse2, *Université de Sherbrooke, Sherbrooke, QC, Canada, 1AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.

**M197**

Further study on the role of SREBP-1 in lipogenesis in bovine mammary epithelial cells.

L. Ma* and B. A. Corl, *Virginia Tech, Blacksburg.

**M198**

Capturing circadian mammary gene expression of cows using RNA from milk fat globule.

J. Crodian*, T. Casey, and K. Plaut, *Purdue University, West Lafayette, IN.

**M199**

Expression of PEPCK isoforms in the mammary gland of dairy goats is regulated by insulin status.

S. J. Mabjeesh*, A. Sahmay1, N. Argov-Agrman1, C. Sebastian1, and B. J. Bequette3, 1The Robert H. Smith Faculty of Agriculture, Food and environment, The Hebrew University of Jerusalem, Rehovot, Israel, 2Institute of Animal Science, The Volcani Center, Bet Dagan, Israel, 3University of Maryland.

**Nonruminant Nutrition**

**DDGS**

**Sponsor:** BASF

**M200**

Amino acids and energy utilization in zero tannin faba bean and co-fermented wheat and corn distillers dried grains with solubles (DDGS) fed to growing pigs.

E. Kiarie*, R. K. Kahindi1, P. Lopez2, C. Furedi2, and C. M. Nyachoti1, *University of Manitoba, Winnipeg, MB, Canada, 1The Puratone Corporation, Niverville, MB, Canada.

**M201**

Glucanase, xylanase and microbial inoculants improve feeding value of DDGS for liquid-fed finishing pigs.

C. L. Zhu*, M. Rudar, D. Wey, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada.

**M202**

Determination of dry matter content in feces of pigs fed three different sources of DDGS.

K. Kock* and C. Hostetler, *South Dakota State University, Brookings.*
Nonruminant Nutrition

Enzymes
Sponsor: BASF

M203 Effects of dietary enzymed fermented wheat on growth performance, nutrient digestibility, blood characteristics, and fecal noxious gas emission in growing pigs.
X. Y. Guo*, H. Y. Baek, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

M204 The effect of enzyme fermented corn on growth performance, nutrient digestibility, blood profile, and fecal gas emission in growing pigs.
P. Y. Zhao*, S. C. Kim, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

M205 Effects of enzyme fermented oat on growth performance, digestibility, blood profile, and fecal gas emission of growing pigs.
S. Zhang*, J. M. Lee, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

M206 Effects of emulsifier and multi-enzyme on growth performance, organ weight, meat quality and blood characteristics in broilers.
S. C. Kim*, H. J. Kim, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

O. O. Adeleye*, A. D. Ologhobo1, P. A. Iji1, and O. A. Adebiyi1, 1Department of Animal Science, University of Ibadan, Department of Animal Science, University of Ibadan, Oyo State, Nigeria, 2School of Environmental and Rural Sciences, University of New England, School of Environmental and Rural Sciences, University of New England Armidale, NSW, Australia.

M208 Performance of 1- to 42-day-old broilers fed diets containing multienzyme complex and lipid sources.
G. do Valle Polycarpo*, A. C. Pezzato1, V. C. da Cruz2, J. R. Sartori1, V. B. Fascina1, F. B. de Carvalho1, F. Vercese1, N. C. Alexandre1, L. P. Centenario1, I. M. G. P. de Souza1, P. G. Castelo1, E. M. Muro1, W. T. da Silva1, V. C. Pelícia1, P. C. de Araujo1, 1São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil, 1São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil.

M209 Carcass and cuts yield, and abdominal fat yield in 42-day-old broilers subjected to diets containing multienzyme complex and lipid sources.
A. C. Pezzato*, G. do Valle Polycarpo1, V. C. da Cruz2, J. R. Sartori1, V. B. Fascina1, F. Vercese1, N. C. Alexandre1, L. P. Centenario1, I. M. G. P. de Souza1, P. G. Castelo1, E. M. Muro1, W. T. da Silva1, A. C. Stradiotti1, M. K. Maruno1, F. Barros de Carvalho1, 1São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil, 1São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil.

M210 Effect of dietary phytase on performance, digestive enzymes and intestinal morphology in weaned pigs.
M. C. Shields*, E. van Heugten1, C. H. Stahl1, A. J. Moeser2, P. W. Plumstead1, and M. H. Borgmann1, 1Department of Animal Science, North Carolina State University, Raleigh, 2Department of Clinical and Laboratory Sciences, College of Veterinary Medicine, North Carolina State University, Raleigh, 3Danisco Animal Nutrition, Marlborough, Wiltshire, UK.

M211 Effect of carbohydroase complex and phytase combined in corn-soybean meal diet for pigs.
M. Ceccantini*, B. V. Freitas2, M. M. Mota2, N. B. Petroli2, C. H. Stahl1, C. S. S. Araujo2, and L. F. Araujo2, 1Adisseo, Sao Paulo, SP, Brazil, 2FMVZ/USP, Pirassununga, SP, Brazil, 3FZEA/USP, Pirassununga, SP, Brazil.

Nonruminant Nutrition

Feed Additives

M212 Effects of β-glucan and probiotics (Bacillus subtilis and Kefir) supplementation on growth performance, blood profile, relative organ weight and meat quality in broiler chickens.
J. H. Jang*, L. Yan, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

M213 Effects of caprylic acid and Yucca schidigera extract supplementation on growth performance, nutrient digestibility, fecal microflora and blood profiles in growing pigs.
B. U. Yang*, S. Zhang, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

M214 Effect of fructooligosaccharide and levan on growth performance, nutrient digestibility, blood characteristic and diarrhea in growing pigs.
L. Yan*, X. Y. Guo, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

M215 Effects of dietary sodium stearoyl-2-lactylate supplementation on growth performance, nutrient digestibility, and blood profiles in growing pigs.
B. U. Yang*, H. Y. Baek, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

M216 Effect of dietary zootechnical feed additive supplementation on sow and litter performance.
D. Solà-Oriol*, P. S. Agostini1, S. L. Vinokurovav1, B. T. Lund1, and J. Gas1, 1Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Chr. Hansen, Hørsholm, Denmark.
M217  Effect of a wheat dextrin and a fructooligosaccharide as prebiotics on nursery pig performance.

M218  Effects of ractopamine feeding duration on performance and carcass traits of finishing pigs.
V. V. Almeida*, 1 A. J. C. Nuñez*, 2 C. Andrade*, 1 J. C. C. Balieiro*, 1 V. S. Miyada*, 1 USP/ESALQ, Piracicaba, SP, Brazil, 2 USP/FZEA, Pirassununga, SP, Brazil.

M219  Effect of zilpaterol hydrochloride supplementation on growth performance in male Japanese Quails.
M. Mohammadi*, A. Towhidhi, H. Moravej, and A. Z. Shahneh, Department of Animal Science, university of Tehran, Karj, Karaj, Alborz, Iran.

M220  Safety and efficacy of Moringa oleifera powder for growing poultry.
J. O. Ashong* and D. L. Brown, Cornell University, Ithaca, NY.

M221  Singular consumption of either Lactobacillus plantarum or inulin reduces manure odor from finishing pigs; however, this is negated when offered in combination.

J. K. Mathai*, R. C. Sulabo, J. L. Usry, B. W. Ratliff, D. M. McKilligan, and H. H. Stein, University of Illinois, Urbana, 2 Ajinomoto Heartland, LLC, Chicago, IL, 3 TechMix, LLC, Steward, MN.

M223  Digestibility of green banana flour (Musa cavendishii) in roosters.
E. Toledo*, F. Martinez–Bustos, and A. G. Borbolla, 1 Department of Swine Medicine and Production, School of Veterinary Medicine, Universidad Nacional Autónoma de México, Mexico City, Mexico, 2 CINVESTAV, IPN, Unidad Queretaréa, Querétaro, Qro. Mexico.

M224  Effects of increasing levels of dietary turmeric on growth performance and immune response of nursery pigs.
M. R. Bible*, S. D. Carter, H. J. Kim, T. M. Walraven, C. Houchen, S. Anant, and R. Ramanujum*, 1 Oklahoma State University, Stillwater, 2 University of Oklahoma Health Sciences Center, Oklahoma City, 3 University of Kansas Medical Center, Kansas City, KS, 4 Swaath Inc., Oklahoma City, OK, 5 ADNA Inc., Dublin, OH.

M225  Evaluation the effect of inositol monophosphate supplementation on growth performance, blood profiles and nutrient digestibility in weaning pigs.
H. Y. Baek*, H. W. Cho, and I. H Kim, Dankook University, Cheonan, Choongnam, South Korea.

M226  Effects of probiotics and probiotics mix on growth performance and blood characteristics.
J. M. Lee*, S. M. Hong, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

**Physiology and Endocrinology I**

M227  ACTH-induced stress impairs the expression of genes involved in steroidogenesis and angiogenesis in dairy cow preovulatory follicles.

M228  Comparison of different staining methods on sperm from Holstein bulls.
A. Ata, M. E. Inanc, O. Kankavi, O. Yildiz Gulay*, and M. S. Gulay, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkiye.

M229  Insulin sensitivity correlates with parameters of hepatic lipid metabolism, and is lower in older dairy cows.
H. A. van Dorland, M. Graber, S. Kohler, T. Kaufmann, and R. M. Bruckmaier*, 1 Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland, 2 Department of Animal Science, Swiss College of Agriculture, Zollikofen, Bern, Switzerland, 3 Clinic for Ruminants, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

M230  Intrauterine position and adjacent fetal sex status influences fetal and placental growth but not embryonic viability under crowded uterine conditions in pigs.
B. A. Freking* and C. A. Lents, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

M231  The effect of teasing rams with a ewe stimulus prior to semen collection.
A. G. Fahey*, P. Duffy, and S. Fair, 1 University College Dublin, Belfield, Dublin, Ireland, 2 University of Limerick, Limerick, Ireland.

M232  Effects of supplemental progesterone and timing of initiation of resynchronization on fertility in lactating dairy cows.
Effect of circulating progesterone [P4] and two different GnRH doses on LH secretion in lactating dairy cows.

Assessment of an accelerometer system (Heatime) for detection of estrus and timing of insemination in lactating dairy cows.

Presynchronization with double-Ovsynch improves conception at first postpartum AI in primiparous lactating dairy cows.
M. M. Herlihy*, J. O. Giordano1, A. H. Souza1, A. Keskin1, A. B. Nascimento2, J. N. Guenther1, M. A. Crowe1, S. T. Butler1, and M. C. Wiltbank1, 1Department of Dairy Science, University of Wisconsin-Madison, Madison, 2Animal and Bioscience Research Department, Teagasc, Moorepark, Cork, Ireland, 3School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Ireland.

Effect of GnRH and double AI (24h apart) on fertility of high-producing cows detected in estrus by professional tail chalk service.
D. Cunningham1, A. Fisher2, A. H. Souza2, H. Rivera1, A. Skidmore3, and M. C. Wiltbank2, 1Department of Dairy Science, University of Wisconsin, Madison, 2Interview/Schering-Plough Animal Health, Summit, NJ.

Paraoxonase expression and activity in bovine granulosa cells and follicular fluid.
A. Schneider1, V. A. Absalon-Medina2, G. Esposito1,3, M. N. Corrêa1, and W. R. Butler1, 1Universidade Federal de Pelotas, Pelotas, RS, Brazil, 2Cornell University, Ithaca, NY, 3University of Naples Federico II, Naples, Italy.

Development of a lentiviral RNA interference (RNAi) system for interleukin–1 beta (IL1B) expressed in elongating porcine embryos.
D. J. Mathew*, E. M. Newsom, R. D. Geisert, and M. C. Lucy, University of Missouri, Columbia.

Differential gene expression in liver of lactating (L) and non-lactating (NL) primiparous Holstein cows during early pregnancy.
J. Green*, E. Newsom, C. Okamura, and M. C. Lucy, University of Missouri, Division of Animal Science, Columbia.

Immunohistochemical evidence for the presence of G protein-coupled receptor 43 in cattle rumen epithelium but not in the pancreatic islets of Langerhans.
A. Wang1, R. M. Akers1, and H. Jiang*, 1Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg, 2Department of Dairy Science, Virginia Tech, Blacksburg.

Effects of protein supplementation during heifer development on reproductive characteristics and success in beef heifers.
A. S. Summers*, R. A. Cushman1, S. P. Weber1, M. L. Spangler1, and A. S. Cupp1, 1University of Nebraska-Lincoln, Lincoln, 2USDA-ARS Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, NE.

Effect of parity on thermal response and energy balance (EB) of sows housed at 24-27°C during lactation.

Effects of progesterone concentrations at the end of a fixed-time AI protocol and time of administration of PGF2α in fixed-time AI and ET protocols in lactating dairy cows.
M. Pereira1, A. Rodrigues1, T. Martins1, F. Aono1, P. Borges1, T. Guzella1, C. Sanchez1, M. Veras1, F. Aragon1, and J. L. M. Vasconcelos1, 1FMVZ-UNESP, Botucatuc, SP, Brazil, 2Pioneiros Veterinary Clinic, Carambeí, PR, Brazil.

Period of dominance of the ovulatory follicle influences conception rates in Nelore pubertal heifers detected in estrus.
T. Martins1, A. Rodrigues1, F. Aono1, M. Pereira1, R. Pere1, H. Graff1, E. Carvalho1, and J. L. M. Vasconcelos1, 1FMVZ-UNESP, Botucatuc, SP, Brazil, 2Agropecuaria Fazenda Brasil, Nova Xavantina, MT, Brazil.

Impacts of L-arginine on ovarian function and reproductive performance at the time of maternal recognition of pregnancy in ewes.
C. Schauer1, C. Saevre1, A. Meyer1, M. VanEmon1, J. Kirsch1, M. Kapphahn1, J. Luther1, J. Caton1, and D. Redmer1, 1Hettinger Research Extension Center, North Dakota State University, Hettinger, 2Department of Animal Sciences, North Dakota State University, Fargo, 3Department of Animal and Food Science, University of Wisconsin-River Falls, River Falls.

Failure of differences in prepubertal dietary intake to affect ovarian development in pubertal beef heifers.

Follicular fluid composition of the preovulatory follicle in beef cows grazing different forage allowances of native pastures.
M. Carrquiry1,2, P. Soca1, A. C. Espasandin1, A. Meikle1, and C. Viñoles1, 1School of Agronomy, UdelaR, Montevideo, Uruguay, 2School of Veterinary Sciences, UdelaR, Montevideo, Uruguay, 3National Research Institute for Agriculture, Tacuarembó, Uruguay.

Longitudinal assessment of the somatotropic axis in free-ranging, juvenile Steller sea lions.
K. D. Hebert*, J. P. Richmond, L. D. Rea1, and S. A. Zinn1, 1University of Connecticut, Storrs, 2University of North Florida, Jacksonville, 3Alaska Department of Fish and Game, Fairbanks, AK.

Analysis of bovine liver transcriptomics data due to level of prepartal dietary energy using two bioinformatics approaches.
K. Shahzad*, M. Bionaz, and J. J. Loor, University of Illinois, Urbana.

Follicle-stimulating hormone induces the canonical WNT/beta-catenin pathway in bovine granulosa cells.
**Production, Management and the Environment**

**Dairy Production**

**M253**

Exposure of beef females to the biostimulatory effects of bulls prior to AI.

K. E. Pfeiffer*, J. A. Binversie, J. D. Rhinehart, and J. E. Larson, *Mississippi State University, Mississippi State, 2University of Tennessee, Nashville.

**M254**

Effect of selenium and a glucogenic precursor on fertility in Creole Rodeo cows synchronized with CIDR, PGF2α, eCG, and GnRH.


**M255**

Effects of heat stress on skeletal muscle insulin responsiveness in lactating Holstein cows.


**Withdrawn**

**M256**

Effects of heat-stress and fresh or frozen semen on reproductive efficiency in dairy cows treated with rbST throughout lactation.


**M257**

Expression patterns of eNOS in 13 different tissues shows a new isoform in bovine brain stem.


**M258**

Analysis of bovine adipose transcriptomics data during the transition from pregnancy to early lactation using two bioinformatics approaches.


**M259**

Reproduction of dairy cows receiving 1 vs. 3 timed AI (TAI) when not observed for estrus and subjected to natural service (NS).


**M260**


L. G. D. Mendoça**, M. Amstalden, and R. C. Chebel, 1Department of Veterinary Population Medicine, University of Minnesota, St. Paul, 2Department of Animal Science, Texas A&M, College Station.

**M261**

Environmental effects on semen quality of beef bulls used for artificial insemination.

D. O. Stepp*, K. J. Stutts, M. M. Beverly, and S. F. Kelley, Sam Houston State University, Huntsville, TX.

**Plasma progesterone concentration and follicle dynamics of lactating Jersey cows treated with 1 or 2 intra-vaginal progesterone insert.**

J. G. N. Moraes*, P. R. B. Silva, N. Bortoletto, A. L. A. Scanavez, and R. C. Chebel, Department of Veterinary Population Medicine, University of Minnesota, St. Paul.

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**M263**

Effect of a rumen-protected niacin product on lactation performance by dairy cows during summer in Wisconsin.


**M264**

Body condition score at calving affected milk yield and blood metabolites in Holstein dairy cows.

Y. Moharrami*, G. R. Ghorbani, H. R. Rahmani, S. M. Nasrollahi, and C. Li**, 1Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran, 2Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.

**M265**

Body condition score at calving affected reproductive performance and metabolic disorders in Holstein dairy cows.

Y. Moharrami*, G. Ghorbani, H. Rahmani, S. M. Nasrollahi, and C. Li**, 1Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran, 2Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada.

**M266**

Effects of bovine somatotropin (rbST) at 250 mg or 500 mg administered to crossbred cows (Bos taurus x Bos indicus).

B. G. Campos*, S. G. Coelho, A. M. Q. Lana, E. Rabelo, E. A. Alvarenga, and B. F. Silper, 1Escola de Veterinária da Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil, 2Fundação de Amparo à Pesquisa do Estado de Minas Gerais, Belo Horizonte, Minas Gerais, Brasil, 3Recursos Humanos no Agronegócio, Belo Horizonte, Minas Gerais, Brasil.
M267  Effect of pen change on daily milk yield of dairy cows.
A. Zwald* and R. D. Shaver, University of Wisconsin-Madison, Madison.

M268  Milking management of crossbred Holstein x Gyr (F1) cows without calf on production performance.
L. H. Oliveira¹, J. M. S. Filho¹, F. L. B. Toral¹, and R. B. Reis*¹,², ¹Federal University of Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil, ²FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

M269  Risk management practices by Idaho dairy producers.
R. J. Norell*¹, C. W. Gray², and M. Chahine³, ¹University of Idaho, Idaho Falls, ²University of Idaho, Twin Falls.

M270  High diurnal fluctuations of ambient temperature do not improve the adaptation of dairy cows to heat stress.
H. Khelili¹-², P. Faverdin¹-², and A. Boudon*¹-², ¹INRA, Saint-Gilles, France, ²Agrocampus Ouest, Rennes, France.

M271  Assessment of long-term nitrogen runoff reduction from dairy pastures.
R. White* and J. L. Capper, Washington State University, Pullman.

M272  Milk, fat, and protein production in relationship to herd linear somatic cell score in Minnesota.
R. F. Leuer* and J. K. Reneau, University of Minnesota Southern Research and Outreach Center, Waseca.

M273  Effects of water total dissolved solids on milk-fed calves weight gain, feed intake and weaning age in winter.
R. Ramezankhani¹, A. Alizadeh¹, A. Nasserian², M. Chehrazi¹, and B. Saremi*², ¹Department of Animal Science, Islamic Azad University, Saveh Branch, Saveh, Iran, ²Department of Animal Science (Excellent Center of Animal Nutrition), Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran, ³Epidemiology and Reproductive Health Department, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran, ⁴Institute of Animal Science, Physiology and Hygiene unit, University of Bonn, Bonn, Germany.

M274  Occurrence of milk unstable protein in dairy farms from southeastern region of Brazil.
L. C. Roma Junior*, A. C. O. Rodrigues¹, T. G. R. Amaral², F. Cardoso²,³, and P. F. Machado², ¹APTA Centro Leste, Ribeirao Preto, Sao Paulo, Brazil, ²Clinica do Leite/ESALQ/USP, Piracicaba, Sao Paulo, Brazil, ³Department of Animal Science, University of Illinois, Urbana.

M275  Alternative cooling of dairy cows by wetting the udder.
J. A. Binversie*¹, J. D. Davis¹, K. G. Gebremedhin², C. N. Lee³, and J. E. Larson³, ¹Mississippi State University, Mississippi State, ²Cornell University, Ithaca, NY, ³University of Hawaii, Honolulu.

M276  Effect of essential oils on production and reproduction in early lactating cows during heat exposure.
U. Serbester¹, ²L. H. Oliveira, ³A. Ceyhan¹, ²A. Cannas, ¹Novus International Inc., St. Charles, MO.

M277  The relationship between milk urea nitrogen with milk yield and protein percentage categories for Iranian Holstein cows.
F. Fatehi*¹, M. Honarvar², M. Dehghan-Banadaky¹, A. Zali¹, and A. Young³, ¹Department of Animal Science, Campus of Agriculture and Natural Resource, University of Tehran, Karaj, Iran, ²Islamic Azad University, Shahriar_Shahr_e_Qods Branch, Shahriar, Iran, ³Department of Animal, Dairy, and Veterinary Sciences, Utah State, Logan.

M278  Stage of lactation is associated with differences in the metabolic profiles and innate immunity in dairy cows transitioning to an organic management system.

M279  Delayed effect of heat stress on dry matter intake and milk yield in dairy cows.
A. S. Atzori* and A. Cannas, Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari 07100, Italy.

M280  Effect of feed-line soaking and Niashure (NI) on heat–stressed lactating Holsteins housed in an evaporative tunnel ventilated barn in Thailand.
S. Rungruang*, J. Collier, and R. Collier, University of Arizona, Tucson.

M281  Economic assessment of postpartum milking frequencies on dairy farms.

M282  Milk fat and protein:fat ratio in California dairies.
N. Silva-del-Rio*, A. Lago, B. Verboort¹, L. Baykal Çelik¹, and H. Selvaraj¹, ¹University of California Cooperative Extension, Tulare, ²APC Inc., Ankeny, IA, ³Agritech Analytics, Visalia, CA.

M283  Performance of post-weaned Holstein heifers fed a grain mix with free choice hay or a total mixed ration (TMR) containing sweet corn cannie waste, hay and dried distillers grains.
D. Schimek¹, D. Ziegler¹, B. Ziegler¹, H. Chester-Jones¹, M. Raeth-Knight¹, and G. Golombeski¹, ¹Hubbard Feeds Inc., Mankato, MN, ²University of Minnesota Southern Research and Outreach Center, Waseca, ³University of Minnesota, St. Paul.

M284  Effect of feeding duration on growth of group fed dairy calves during transition to an organic production system.
B. J. Heins*, D. G. Johnson, and E. A. Bjorklund, University of Minnesota, St. Paul.
M285 Pre- and post-weaning performance and health of dairy heifer calves fed calf starters and grain mixes with glycerol as a replacement for corn.
D. Ziegler*,1, H. Chester-Jones1, A. Doering2, D. Timmerman3, M. Raeth-Knight4, and G. Golombeski, 1University of Minnesota Southern Research and Outreach Center, Waseca, 1Agricultural Utilization Research Institute, Waseca, MN, 1University of Minnesota, St. Paul.

M286 Effect of lactation number, year and season of initiation of lactation on milk yield of rbST-treated cows hormonally induced into lactation.
M. Mellado*,1, E. Antonio-Chirino2, C. Meza-Herrera3, F. G. Veliz2, and J. R. Arevalo4, 1Autonomous Agrarian University Antonio Narro, Department of Animal Nutrition, Saltillo, México, 2Autonomous Agrarian University Antonio Narro, Faculty of Veterinary Medicine, Torreon, Mexico, 3Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, México, 4University of La Laguna, Department of Parasitology, Ecology and Genetics, La Laguna, Spain.

Ruminant Nutrition

Beef Cattle


M288 Different levels of urea in concentrate supplementation of grazing cattle during the transition period of dry to rainy seasons under tropical conditions.
A. G. Silva1, H. J. Fernandes*,2, L. O. Tedeschi1, M. F. Paulino1, S. A. Lopes1, and A. A. Rocha1, 1Federal University of Viçosa, Viçosa, MG, Brazil, 2State University of Mato Grosso do Sul, Aquidauana, MS, Brazil, 1Texas A&M University, College Station.

M289 Effects of monensin on rumen metabolism of steers fed 60% dried distillers grains diets.
T. L. Felix*,1, N. A. Pyatt1, and S. C. Loerch4, The Ohio State University, Wooster, 5Elanco Animal Health, Greenfield, IN.

M290 Carcass composition of mature cows subjected to a nutritional restriction and two levels of compensatory growth.
K. O. Barros1, H. J. Fernandes*,2, G. L. D. Feijó1, M. A. Rezende1,2, H. O. A. Santana1, E. Rosa1, L. M. Paiva1, and J. C. Souza2, 1State University of Mato Grosso do Sul, Aquidauana, MS, Brazil, 2EMBRAPA Beef Cattle Center, Campo Grande, MS, Brazil, 1Federal University of Grande Dourados, Dourados, MS, Brazil, 2Federal University of Mato Grosso do Sul, Aquidauana, MS, Brazil.

M291 Combined use of ionophore and virginiamycin on feeding behavior of Nellore steers fed high concentrate diets.
A. J. C. Nuñez2, V. V. Almeida2, R. C. Gomes2, F. T. Mercado1, I. E. Borges1, J. Guerra2, F. Pinese1, P. R. Leme1, and J. C. M. Nogueira Filho1, 1USP/FZEA, Pirassununga, SP, Brazil, 2Brazilian National Research Council, Brasilia, Brazil.

M292 Performance and carcass traits of beef bulls fed crude glycerin in the diet.

M293 Effect of dietary urea-N levels on growth performance and blood biochemical indexes of growth-finishing cattle.
L. Jiang*, Y. L. Huo, L. P. Ren, Z. M. Zhou, and Q. X. Meng, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.

M294 In situ ruminal protein degradability of distiller’s grain varying grain source and milling process in beef cattle.
C. Li1,2, W. Z. Yang1, J. Q. Li1, Y. L. Li1, and A. Furtado1, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2College of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China, 3Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.

M295 Effects of monensin and probiotics on finishing Nellore bulls performance, carcass characteristics, and liver abscesses.
C. Sitta1, A. M. Pedroso2, G. B. Mourão2, R. Carareto1, J. R. R. Dórea1, T. G. Neri2, D. A. Rodrigues1, W. F. Angolini1, and F. A. P. Santos*,1, 1University of São Paulo, Piracicaba, SP, Brazil, 2Embrapa Cattle Southeast, São Carlos, SP, Brazil.

M296 Effect of feeding alfalfa hay and starter concentrate containing two different levels of fiber on feed intake, body weight gain and feed efficiency.
A. Salary Neya*, M. H. Fathi, H. Naeemipour, and H. Farhangfar, Birjand University, Birjand, Southern Khorasan, Iran.

M297 Effects of supplementation of organic, inorganic or a 50/50 mix of selenium on gene expression profiles in the longissimus dorsi muscle of maturing Angus beef heifers.
K. M. Brennan*, J. A. Boling2, R. Xiao1, D. Mallonee1, R. F. Power1, and J. C. Matthews, 1Alltech Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY, 2Department of Animal and Food Sciences, University of Kentucky, Lexington.

M298 Effect of zilpaterol hydrochloride supplementation feeding duration on growth performance and carcass characteristics of feedlot heifers.
J. C. Robles-Estrada4, H. Dávila-Ramos1, A. Estrada-Angulo1, A. Plascencia1, F. G. Ríos1, and R. A. Zinn1, Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Universidad Autónoma de Baja California, Mexicali, B.C., México, 3University of California-Davis, El Centro.
M299  Feeding tannins to reduce nitrogen losses from feedlot cattle fed high protein diets containing distillers grains 1. Animal performance and plasma urea nitrogen.
K. M. Koenig*, K. A. Beauchemin, and S. M. McGinn, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, Alberta, Canada.

M300  Feeding tannins to reduce nitrogen losses from feedlot cattle fed high protein diets containing distillers grains 2. Nutrient digestibility and route of nitrogen excretion.
K. M. Koenig*, K. A. Beauchemin, and S. M. McGinn, Agriculture and Agri-Food Canada, Research Centre, Lethbridge, Alberta, Canada.

M301  Potential modulation of the inflammatory response associated with enteropathogenic Escherichia coli infections in young calves using Actigen.
A. Aris¹, E. Rodriguez², A. Tort³, M. Terré⁴, F. Fábregas¹, K. A. Jacques¹, and A. Bach¹,², ¹Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA), Caldes de Montbui, Barcelona, Spain, ¹Institución Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Barcelona, Spain, ¹Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.

M302  Effects of crude protein levels on the concentrate supplement on gas production from carbohydrate in vitro degradation of Elephant grass.
M. A. C. Danes*, J. R. R. Dorea, and F. A. P. Santos, University of Sao Paulo/Esalq, Piracicaba, SP, Brazil.

M303  Effect of 2,4-thiazolidinedione in finishing beef cattle growth performance and carcass traits.
M. Arévalo*, L. González-Dávalos, A. Kunio, J. D. Garza, J. L. Dávalos, O. Mora, and A. Shimada, Universidad Nacional Autónoma de México, Querétaro, Querétaro, México.

M304  Evaluation of rumen protozoa counting under influence of a polyclonal antibody preparation against lactate-producing and proteolytic bacteria in cows fed different energy sources.
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M305  Inclusion of triticale dried distiller grains with or without oilseeds reduces growth performance but increase alpha-linolenic acid and lowers trans 10 C18:1 fatty acid of subcutaneous fat in finishing beef cattle.
M. L. He¹,², T. A. McAllister¹, H. Sultana¹, M. Oba¹, M. E. R. Dugan², J. P. Kastelic², and J. J. McKinnon², ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²University of Saskatchewan, Saskatoon, SK, Canada, ³University of Alberta, Edmonton, AB, Canada, ⁴Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada.

M306  Substitution of wheat dried distiller grains with solubles for barley silage in a barley based finishing diet increases beef alpha-linolenic acid.
M. L. He¹,², W. Z. Yang¹, T. A. McAllister¹, M. E. R. Dugan², K. A. Beauchemin¹, and J. J. McKinnon³, ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada, ³University of Saskatchewan, Saskatoon, SK, Canada.

M307  Effect of early grain feeding on ADG and signaling proteins for protein synthesis in the muscle tissues of beef animals.

M308  Slow release urea can replace nitrogen from soybean meal in dry-rolled corn-based finishing diets for yearling steers.
B. P. Holland*¹ and J. S. Jennings², ¹Department of Animal and Range Sciences, South Dakota State University, Brookings, ²Alltech Inc., Brookings, SD.

M309  Acetate clearance rates and postabsorptive capacity to utilize acetate by beef steers.

M310  Blood profile of bulls fed different levels of crude glycerin.

M311  Effect of specific polyclonal antibody preparation doses on ruminal variables in cattle fed high concentrate diets.
J. Bastos*, C. Marino¹, D. Millen², R. Pacheco², J. Magalhaes¹, J. Carvalho¹, M. Arrigon¹, and P. Rodrigues¹, ¹University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, ²University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil, ³Nutribeef Consultancy, Botucatu, Sao Paulo, Brazil.

M312  Corn grain processing methods and forage levels in finishing diets for Nellore bulls.
R. Cararetó¹, F. A. P. Santos*, G. Mourão¹, A. M. Pedrosa¹, C. Sitta¹, M. P. Soares¹, M. R. Paula¹, R. S. Marques¹, and M. C. Soares¹, ¹University of Sao Paulo, Piracicaba, São Paulo, Brazil, ²Embrapa Cattle Southeast, Sao Carlos, São Paulo, Brazil.
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M313 Effect of sugar and sodium propionate for barley grain in dairy calves starter on weaning and performance.

M314 Evaluation of content and epithelial attached bacterial community in the rumen of steers differing in susceptibility to rumen acidosis.
  Y. Chen*, M. Oba, and L. L. Guan, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.

M315 Supplementing rumen-protected Met and Lys in alfalfa and red clover silage diets fed to lactating dairy cows.

M316 Steam-flaked soybeans in lactating dairy cow diets.

M317 Effects of different amounts of dietary protected and unprotected niacin on intake and milk production.
  F. C. Cardoso*, J. Garrett*, and J. K. Drackley*, University of Illinois, Urbana, QualiTech, Chaska, MN.

M318 Effect of malate supplementation to dairy cows on milk production: A meta-analysis.

M319 Independent effects of diet chemical fiber and physical measurements on dairy cows.

M320 Effect of feeding Camelina sativa seeds or meal on lactation performance and milk fatty acid composition in lactating dairy cows.
  J. P. Sarramone*, C. Benchaar*, Y. Lebeuf*, R. Gervais*, and P. Y. Chouinard*, Département des sciences animales, Université Laval, Québec, QC, Canada, Institute of Nutraceuticals and Functional Foods (INAF), Québec, QC, Canada, Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

M321 Milk fatty acid profile of dairy goats fed increasing levels of an unprotected conjugated linoleic acid (UCLA) supplement.

M322 Performance and milk fatty acid profile of dairy goats fed a total mixed ration (TMR) containing an unprotected conjugated linoleic acid (UCLA) supplement.

M323 Effects of feeding levels of a milk replacer on growth performance, digestion and metabolism of nutrients, and serum biochemical markers in calves.
  X. Xu, J. Wang, Y. Tu*, N. Zhang, C.-G. Jiang, and Q. Dao, Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, P. R. China.

M324 Effect of dietary starch content on response to an intravenous glucose tolerance test in early lactation dairy cows.

M325 Effect of milk feeding level on pre- and post-weaning performance of dairy calves.

M326 Effects of methionine hydroxy copper supplementation on lactation performance, fertility, nutrients digestibility and some metabolic indices in dairy cows.

M327 Effects of methionine hydroxy zinc supplementation on lactation performance, fertility, nutrients digestibility and some metabolic indices in dairy cows.
Effect of metabolizable protein level on milk production and composition of early lactating Holstein cows.
A. Laki, K. Rezayazidi, and M. Dehghan-Banadaky*, Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

The effect of reducing dietary phosphorus on bone metabolism in lactating dairy cows.
L. Puggaard1, A. Liesegang2, J. Sehested3, and P. Lund3, 1Department of Animal Health and Bioscience, Aarhus University, Tjele, Denmark, 2Vetsuisse Faculty, University of Zurich, Zurich, Switzerland.

Evaluation of rumen microbial diversity population under influence of a polyclonal antibody preparation against lactate-producing and proteolytic bacteria in cows fed different energy sources.
C. Marino4, 1W. Otero2, C. Barreto2, V. Pellizari2, F. Ferreira2, M. Arrigoni1, and P. Rodrigues1, 1University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, 2University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil, 3University of Sao Paulo, ICB II-USP, Sao Paulo, Sao Paulo, Brazil.

Effect of polyunsaturated fatty acid on plasma and milk fatty acid composition in early lactating dairy cows.
B. Vlaeminck1, 2M. Hostens2, E. Colman3, S. De Campeneere4, G. Opsomer1, and V. Fievez1, 1Laboratory for Animal Nutrition and Animal Product Quality, Ghent University, Melle, Belgium, 2Department of Reproduction, Obstetrics and Herd Health, Ghent University, Merelbeke, Belgium, 3Department of Animal Sciences, Institute for Agricultural and Fisheries Research, Melle, Belgium.

Effect of extruded flaxseed or alfalfa protein concentrate in interaction with two levels of concentrate on milk protein and Ca synthesis.
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Effect of cow variation on the efficiency of nitrogen recycling to the rumen in dairy cattle.
M. Aguilar1, 2M. E. Van Amburgh3, W. A. D. Nayananjali2, and M. D. Hanigan1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Cornell University, Ithaca, NY.

Effect of enhanced feeding rates of conventional milk replacer on pre- and post-weaning performance and health of dairy calves.
D. Carlson1, 2B. Ziegler3, D. Schimek2, M. Raeth-Knight1, G. Golombeski1, J. Linn2, N. Litherland3, D. Ziegler3, and H. Chester-Jones3, 1Milk Products, Chilton, WI, 2Hubbard Feeds Inc., Mankato, MN, 3University of Minnesota, St. Paul, 4University of Minnesota, Southern Research and Outreach Center, Waseca.

Form of trace mineral supplementation on complete lactation performance, reproduction, and locomotion in Holstein cows.

Effect of replacing corn grain and soybean meal with a treated wheat grain on the performance of dairy cows.
J. Benninghoff1, 2G. Hamann1, H. Steingaß3, F.-J. Romberg2, K. Landfried2, and K.-H. Südekum1, 1University of Bonn, Bonn, Germany, 2DLR Westfälisch,Münchweiler/Alsenz, Germany, 3University of Hohenheim, Stuttgart, Germany.

Comparison of models to predict ruminal methane from milk fatty acids.

Effects of methionine analog supplement on milk production and composition of primiparous dairy cows in a Brazilian dairy herd.
L. Alegranzi1, V. L. Souza1, M. C. Doska1, G. F. Zanetti2, E. M. Ribas2, A. Ostrensky1, and R. Almeida1, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2Nutron Alimentos, Brazil, 3Pontifícia Universidade Católica do Paraná, Curitiba, PR, Brazil.

Dry matter digestibility of dairy goats diets during pregnancy.

Effect of different levels of a mycotoxin deactivating feed additive on Holstein crossbred dairy cows in Southeast Asia fed rations naturally contaminated with mycotoxins.
U. Hofstetter1, I. Rodrigues1, and K. Kiyothong3, 1Biomin Holding GmbH, Herzogenburg, Austria, 2School of Agriculture, Food and Rural Development, University of Newcastle, Newcastle, UK.

Voluntary selection of starter ingredients offered separately to nursing calves.
C. Montoro1, 2A. Bach1, 2Ruminant Production, IRTA, Caldes de Montbui, Barcelona, Spain, 3ICREA, Barcelona, Spain.

Duodenal flows and milk yields of odd- and branched-chain fatty acids in response to N underfeeding and energy source in dairy cows.
R. Gervais1, 2B. Vlaeminck2, A. Fanchone1, P. Nozière1, M. Doreau2, and V. Fievez1, 1Département des sciences animales, Université Laval, Québec, Québeck, Canada, 2Lanupro, Ghent University, Melle, Belgium, 3Unité de Recherches Zootéchniques, INRA, Petit Bourg, Gueladou, France, 4Unité de Recherche sur les Herbivores, INRA, Theix, St-Genès-Champanelle, France.

Effects of a direct-fed microbial and fibrolytic enzyme product on somatic cell counts in milk produced by crossbred dairy cows in the Brazilian Cerrado.
R. D. Sainz1, 2C. U. Magnabosco1, 2E. A. Filgueirases1, R. Guimarães2, 3F. M. C. Freitas4,5, and L. R. Mattos4, 5University of California, Davis, 6Embrapa, Brasilia, DF, Brazil, 7Embrapa Cerrados, Planaltina, DF, Brazil, 8Embrapa Arroz e Feijão, Santo Antonio de Goiâ, GO, Brazil, 8Biofórmula, Goiânia, GO, Brazil, 8Embrapa Gado de Leite, Juiz de Fora, MG, Brazil.
Effects of abomasal dosing of ferrous lactate in lactating dairy cows.

Glycerin as a replacement for corn in dairy Holstein cows diets.
J. B. D. Sancanari1,2*, J. M. B. Ezequiel1, E. H. C. B. van Cleef1,2, V. R. Fávaro2, A. P. D’Áurea1,2, A. C. Homem2, Z. F. Silva3, D. A. V. Silva3,4, and J. W. Cattelan5, 1 São Paulo State University, Jaboticabal, São Paulo, Brazil, 2 FAPESP, São Paulo, São Paulo, Brazil.

Rolled barley grain treated with lactic acid and heat altered postprandial rumen mineral availability in lactating dairy cows.

Phosphorus feeding for second lactation dairy cows.
V. R. Moreira*, L. K. Zeringue, C. Leonardi, and M. E. McCormick, 1Louisiana State University - Agricultural Center, Franklin, 2Louisiana State University - Health Sciences Center, New Orleans.

Biochemical blood parameters of dairy cows fed with increasing concentrations of glycerin.
J. B. D. Sancanari1,2*, J. M. B. Ezequiel1, E. H. C. B. van Cleef1,2, V. R. Fávaro2, A. P. D’Áurea1,2, A. C. Homem2, Z. F. Silva3, D. A. V. Silva3,4, and J. W. Cattelan5, 1 São Paulo State University, Jaboticabal, São Paulo, Brazil, 2 FAPESP, São Paulo, São Paulo, Brazil.

Treating barely grain with lactic acid and heat modulated pre-prandial rumen calcium and magnesium availability in lactating dairy cows.

Performance variables of dairy cattle fed a commercial micronutrient supplement during the peripartum period.

Effect of whole versus chopped sugar cane on dry matter intake in dairy cows.
J. E. Pérez-De La Ossa1 and R. P. Lana1,2, 1Univesidade Federal de Viçosa, MG, Brazil, 2CNPq and INCT-CA, Brasilia, DF, Brazil and Viçosa, MG, Brazil.

On-farm dry matter testing to improve feed delivery precision on dairy farms.
K. R. French* and R. A. Kohn, University of Maryland, College Park.

Effects of the source and amount of sulfur in prepartum diets on plasma metabolites of periparturient Holstein cows.

Intake, digestibility and metabolism of nitrogen compounds of dairy cows fed with different urea levels in diets based on sugar cane.
A. M. F. Santiago*, J. M. de S. Campos1, A. S. Oliveira1, S. A. Santos1, and S. M. Souza1, 1Instituto Federal de Tecnologia, Rio Pomba, MG, Brazil, 2Universidade Federal de Pernambuco, Guararapes, PE, Brazil, 3Universidade Federal de Mato Grosso, Sinop, MT, Brazil, 4Universidade Federal de Viçosa, Viçosa, MG, Brazil.

Effects of barley grain processing on milk yield and composition of early lactating Holstein cows.
H. Amanlou, H. Mirzaei Alamouti*, and M. Shahir, Department of Animal Science, University of Zanjan, Iran.

Fate of phosphorus in large intestine of dairy heifers.
P. P. Ray*, M. D. Hanigan, and K. F. Knowlton, Virginia Polytechnic Institute and State University, Blacksburg.

Peripheral blood leukocyte population dynamics during the peripartum period in dairy cattle fed a commercial micronutrient supplement.

Peripheral blood leukocyte population dynamics in peripartum dairy cattle managed under different dry period nutritional strategies.

Digestion and rumen fermentation in precision-fed dairy heifers on low or high forage rations at four levels of dry distillers grain.

Effect of live-cell yeast at two dosages on lactation performance by dairy cows.
L. F. Ferraretto*, R. D. Shaver, and S. J. Bertics, Department of Dairy Science, University of Wisconsin, Madison.

Differences in nutrients formulated and nutrients supplied on three California dairies.
H. A. Rossov1, R. J. van Hooij1, and G. Acetoze*, 1University of California, Davis, 2Utrecht University, Utrecht, the Netherlands.

Effect of dietary protein level and rumen-protected amino acids supplementation on ruminal fermentation and nitrogen utilization in lactating dairy cows.

Effects of additive treatment and glycerol supplementation on in vitro digestibility and fermentation of a total diet ration.
Use of an anti-inflammatory additive in preweaning Holstein calves.
L. A. Borunda*, D. Dominguez1, G. Villalobos1, J. Arteaga1, E. Santellano1, M. Cook2, and M. Yang3, 1Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México, 2Aova Technologies Inc., Madison, WI.

Effect of dietary trans fatty acids on milk yield and milk composition of early lactating dairy cows.
J. S. Watts*, D. L. Sevier, S. M. Clark, M. A. McGuire, and P. Rezamand, Department of Animal and Veterinary Science, University of Idaho, Moscow.

Effect of nicotinamide on milk yield and retention of cows on commercial California dairies.
P. D. French*, M. A. DeGroot1, and J. C. Woodworth1, 1French Consulting, Bon Air, VA, 2DeGroot Dairy Consulting, Visalia, CA, 3Lonza Inc., Enterprise, KS.

Periparturient supplementation of saturated and unsaturated fat sources differentially alters the fatty acid profile of colostrum and milk fat of Holstein cows.
M. Garcia*, L. F. Greco1, A. Lock1,2, J. E. P. Santos1, and C. R. Staples1, 1University of Florida, Gainesville, 2Michigan State University, East Lansing.

Effects of reduced dietary protein and supplementing rumen protected amino acids on the nitrogen efficiency of dairy cows.
A. L. Bell*, M. J. de Veth1, R. T. Wiles1, O. Becvar1, and M. D. Hanigan1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Balchem Corporation, New Hampton, NY, 3Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.

The effect of direct-fed microbial supplementation on reproductive and production performance of primiparous Holstein heifers.
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Rumination behavior and its relationship to feeding behavior in Holstein dairy cows prepartum.
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Performance of dairy calves offered alternative pre-weaning feeding programs.

Effect of Origanum vulgare L. leaves on production and milk fatty acid composition in lactating dairy cows.
A. N. Hristov*, C. Lee1, T. Cassidy1, K. Heyler2, J. A. Tekippe1, G. A. Varga1, and B. Corl2, 1Pennsylvania State University, University Park, 2Virginia Polytechnic Institute and State University, Blacksburg.

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Evaluation of algae as livestock feed.

Hourly changes in fatty acid profile of ruminal contents in continuous cultures as soybean oil is added and removed from the diet.
C. M. Klein*, S. K. Thurmond, P. H. Morris, and T. C. Jenkins, Clemson University, Clemson, SC.

Effects of tannin extracts on in vitro growth of selected food-borne pathogenic bacteria.
B. J. Min1, B. R. Min1, J. M. Sieg1, J.-S. Eun1, 1Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL, 2Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan.

Tannin extracts decrease in vitro growth of ruminal acidosis-causing bacteria in pure culture.
J.-S. Eun1, B. R. Min1, J. M. Sieg1, D. R. ZoBell1, and A. J. Young1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department of Agricultural and Environmental Sciences, Tuskegee University, Tuskegee, AL.

Effects of wheat dried distillers grains with solubles (DDGS) and cinnamaldehyde (CIN) on fermentation and protein degradation in Rusitec.
Y. L. Li1,2, M. L. He1, K. A. Beauchemin1, and W. Z. Yang*, 1Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.

In vitro digestion and gas production of wheat grain varying processing.
W. Z. Yang*, T. A. McAllister1, and M. Oba2, 1Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

The effect of DDGS when replacing corn or soybean meal on rumen microbial growth in vitro as measured using real-time PCR.
E. Castillo-Lopez* and P. J. Kononoff, University of Nebraska-Lincoln, Lincoln.
M380 Effects of semi-arid medicinal herb essential oils on growth of pure culture of Butyrivibrio fibrisolvens SH13.
H. Jahani-Arizabaladi, M. Danesh Mesgaran, A. R. Vakili, and K. Rezayadz. 1Dept. of Animal Science, Excellence Center for Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, 2Dept. of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Tehran, Iran.

M381 Effects of microbial contamination on in situ estimates of ruminal degradability of fiber fractions.

M382 Measurement of dry matter degradation of sugar cane molasses in rumen of bovine using nylon bag technique.
J. J. Lomeli, L. R. Flores, R. H. Ley, J. E. Guerra, I. Quintero, J. E. Borbolla, and R. Barajas, FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2FA-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México.

M383 Ruminal degradation of the dry matter of the sugar cane silage.

M384 A novel method to measure rumen stability of three rumen protected products.
M. Sakkers, P. H. Robinson, L. J. Erasmus, J. Garrett, and R. Meeske, University of Pretoria, Pretoria, South Africa, University of California, Davis, Davis, Quali Tech Inc., Chaska, MN, Western Cape Department of Agriculture, Western Cape, South Africa.

M385 Biohydrogenation of docosahexaenoic acid into unsaturated 22-carbon fatty acid intermediates in ruminal batch cultures.
C. M. Klein, W. C. Bridges, and T. C. Jenkins, Clemson University, Clemson, SC.

M386 Effect of a handmade inoculum and additive on in vitro dry matter digestibility of sugar cane silage.

M387 Effects of dietary probiotics on growth performance, nutrient digestibility, blood profiles, fecal gas emission, fecal microflora and diarrhea index in weaning pigs.
S. M. Hong, T. X. Zhou, I. H. Kim, and Y. H. Park, Dankook University, Cheonan, Choongnam, South Korea, Yeungnam university, Daedong, Gyeongsang, South Korea.

M388 The response of urea-N in ruminal content influenced by essential oils.
S. Zhao, J. Wang, D. Bu, and Y. Zhang, State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agriculture Sciences, Beijing, China.

M389 Effects of polyclonal antibody against urease on ruminal fermentation and microbiota diversity in vitro.
S. Zhao, J. Wang, D. Bu, and Y. Zhang, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

M390 Effects of nitrate on microbial communities and rumen fermentation characteristic by using consecutive culture system.
Z. Zhou, Z. Yu, and Q. Meng, College of Animal Science and Technology and State Key Laboratory of Animal Nutrition, China Agricultural University, Beijing, 100193, China, The MAPLE Research Initiative, Department of Animal Sciences, The Ohio State University, Columbus.

M391 Effects of lipid sources on performance and carcass traits of beef cattle finished at pasture.
T. T. Berchielli, I. P. C. Carvalho, G. Fiorentini, and J. F. Lage, São Paulo State University, Jaboticabal, São Paulo, Brazil, FAPESP– Fundação de Amparo à Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.

M392 Effects of the different lipid sources on the carcass traits of the steers finished in a feedlot.
T. T. Berchielli, G. Fiorentini, I. P. C. Carvalho, J. F. Lage, and R. C. Canesin, São Paulo State University, Jaboticabal, São Paulo, Brazil, FAPESP– Fundação de Amparo à Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.

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M393 Blood biochemical constituents in growing lambs fed on orange pulp ensiled with exogenous enzymes.
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Effect of propionate on urea and glucose kinetics in sheep.

Duodenal flow of nitrogenous compounds by wethers fed a fresh ryegrass-based diet intraruminally infused with *Acacia mearnsii* tannins.
F. Hentz**, C. J. Harter*, G. V. Kozlowski*, M. P. Mezzomo*, and A. C. Fluck*, 1Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, 2Universidade Estadual Paulista, Jaboticabal, SP, Brazil.

Effect of germinated and ensiling sorghum grain on digestion and ruminal fermentation by sheep.

Concentration of some elements in blood serum of nonlactating goats in a subtropical region of Southwest of México State.

Exogenous phytase effects on performance of weaned Dorper x Pelibuey lambs.

Calcium propionate and grain level effects on performance, ruminal variables and plasma glucose of finishing lambs.

Effects of zilpaterol hydrochloride and genotype on performance of finishing lambs.

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Feed intake and performance by yearling Boer goat doelings consuming deep-stacked or ensiled broiler litter.

Effects of night-locking on intake, digestion, behavior, and energy use by meat goat does grazing grass/legume pasture.

Effects of replacing different levels of alfalfa hay and corn silage with sunflower residue silage on feed intake and nutrient digestibility in Mohabadi dairy goats.
A. Gholami-Yangije*, R. Pirmohammadi*, J. Amini Jabal Kandi*, and H. Khalilivand-Mehrpooyyar*, 1, 2Department of Animal Science, Urmia University, Urmia, West Azerbaijan, I. R. Iran, 3Department of Animal Science, West Azerbaijan Agriculture and Natural Resource Research Center, Urmia, West Azerbaijan, I. R. Iran, 4Department of Animal Science, University of Tehran, Karaj, Tehran, I. R. Iran.

Effects of inclusion of different levels of sunflower residue silage in dairy goat diets on milk production and composition. A. Gholami-Yangije*, R. Pirmohammadi*, J. Amini Jabal Kandi*, and H. Khalilivand-Mehrpooyyar*, 1, 2Department of Animal Science, Urmia University, Urmia, West Azerbaijan, I. R. Iran, 3Department of Animal Science, West Azerbaijan Agriculture and Natural Resource Research Center, Urmia, West Azerbaijan, I. R. Iran, 4Department of Animal Science, University of Tehran, Karaj, Tehran, I. R. Iran.

Effect of protein restriction on body characteristics and fat storage in Awassi sheep.
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Nutrient intake and performance of lambs fed diets with different levels of inactive dry yeast.
M407 Effect of low and high oil corn distillers grain on rumen fermentation, growth performance and carcass characteristics of lambs.
A. S. O’Hara*, A. V. Chaves1, A. Tanner2, T. A. McAllister1, 2, D. J. Gibb3, F. van Herk3, and R. D. Bush1, 1Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia, 2Faculty of Agriculture, Food and Natural Resources, University of Sydney, Sydney, NSW, Australia, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada.

M408 Nutrient intake and performance of lambs fed diets containing different levels of rumen degradable protein.
J. L. Silva1, K. G. Ribeiro4, 5, O. G. Pereira2, 3, S. V. Filho2, 3, D. S. Pina3, and P. V. R. Paulino2, 1Federal University of Jequitinhonha and Mucuri Valleys, Diamantina, Minas Gerais, Brazil, 2Federal University of Viçosa, Viçosa, Minas Gerais, Brazil, 3Federal University of Mato Grosso, Sinop, Mato Grosso, Brazil.

M409 Diet preference of lambs offered a choice of concentrate diets containing different proportions of wheat dried distillers grain with solubles.
E. K. R. Charles, A. V. Chaves, E. Jonas, and A. S. O’Hara*, Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia.

M410 Effect of inclusion of dried citrus pulp on in vitro ruminal fermentation kinetics of a total mixed ration for goats.
J. Hernández1, 2, R. Rojo3, A. González2, A. Z. M. Salem1, F. Lucero1, J. L. Tinoco1, A. Carreón1, and J. F. Vázquez1, 1Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, 2Unidad Académica Multidisciplinaria Agronomía y Ciencias, Centro Universitario Victoria, Universidad Autónoma de Tamaulipas, Ciudad Victoria, Tamaulipas, México.

M411 The under-nourishment of the Alpine-French goats does not diminish reproductive outcomes, but does affect dynamics of the offspring-growth.
R. Rivas-Muñoz1, 3, E. Carrillo3, C. A. Meza-Herrera4, C. Leyva4, H. Zermeño-González1, R. Rodríguez-Martínez2, M. Mellado1, F. G. Véliz2, and G. Arelano-Rodríguez1, 1Instituto Tecnológico de Torreón, Torreón, Coahuila, México, 2Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México, 3Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México.

M412 Evaluation of crude glycerin on performance and carcass characteristics of growing meat goats.
K. B. Tuoho*, 1, N. K. Gurung1, 3, S. G. Solaiman1, B. R. Min1, J.-S. Eun1, and W. H. McElhenney1, 3Tuskegee University, Tuskegee, AL, 1Utah State University, Logan.

M413 A meta-analysis for comparing dry matter intake prediction models in dairy goats.

M414 Intake and digestibility of rations containing dry yeast in Saanen goats during peripartum.
C. R. Alcalde*, 3, B. S. L. Molina, L. R. Lima, L. C. Gomes, and R. Souza, Universidade Estadual de Maringá, Maringá, Paraná, Brazil.

M415 Net protein requirements for growth of female Saanen goat kids.

M416 Net energy requirements for growth of female Saanen goat kids.

M417 Effect of Clinoptilolite (zeolite) substituting for corn-soybean meal on productive performance and carcass characteristics of Pelibuey sheep.

M418 Effect of live yeast Saccharomyces cerevisiae (strain Sc 47) on fattening efficiency and blood parameters of growing Mehraban lambs.
N. Baleghi1, A. Taghizadeh1, A. FarahAvār2, and H. Khalilvandi-Behroozyar*1, 4, 3Islamic Azad University, Maragheh Branch, 2Department of Animal Science,University of Tabriz, 4Department of Animal Science, University of Tehran, 5Department of Animal Science, Urmia University.

M419 Relationship of blood enzymes and metabolites to residual feed intake of lambs.

M420 Nutritive value of Vicia pannonica forage and its effect on ram Kurdish lamb performance.
F. Fatahnia1, 2, M. Moeini3, F. Moradi3, R. Ebnebasi3, and H. Mirzaei Alamouti*, 1Department of Animal Science, University of Ilam, Iran, 2Department of Animal Science, University of Zanjan, Iran.

M421 Daily supplementation of Saccharomyces cerevisiae (strain Sc 47) can cause reduction of blood cholesterol.
N. Baleghi1, A. Taghizadeh1, A. FarahAvār2, and H. Khalilvandi-Behroozyar*1, 4, 3Islamic Azad University, Maragheh Branch, 2Department of Animal Science,University of Tabriz, 4Department of Animal Science, University of Tehran, 5Department of Animal Science, Urmia University.
Cull pinto bean as a supplement to pregnant-lactating hair ewes.

Effect of different sources of lipid on blood parameters of sheep.

Use of ionophores in Santa Inês lambs diet for meat production.
P. M. França¹, J. R. O. Pérez¹, V. A. A. Reis¹, I. F. Furuscho-Garcia*, R. F. Leite², F. Oliveira³, S. P. Greca¹, and I. Leopoldino Junior¹, ¹Universidade Federal de Lavras, Lavras, Minas Gerais, Brasil, ²Universidade Paulista Júlio de Mesquita Filho, Jaboticabal, São Paulo, Brasil, ³Universidade Paulista Júlio de Mesquita Filho, Botucatu, São Paulo, Brasil.

Evaluation of behavior and apparent dry matter intake of sheep in tropical pasture.
F. Portilho*, J. M. S. Diogo¹, and S. L. S. Cabral Filho¹, ¹University of Brasilia, Brasilia, DF, Brazil, ²Agrodefesa, Rio Verde, GO, Brazil.

Palatability of sainfoin (Onobrychis vicifolia Scop.) in sheep.
H. Khalilvandi-Behroozyar*, M. Dehghan-Banadaky¹, and K. Rezayazdi², ¹Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, ²Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran.

Effect of feeding tannin-containing pine bark on fecal bacterial population and methane gas production in Kiko-cross goats.
B. R. Min*, S. Solaiman, R. Shange, and R. Ankumah, Tuskegee University, Tuskegee, AL.
**SYMPOSIA AND ORAL SESSIONS**

**Animal Behavior and Well-Being Symposium**
**Novel Techniques for Euthanasia**

Chair: Anna K. Johnson, Department of Animal Science, Iowa State University  
Sponsor: AAALAC  
298-299

**9:30 AM**  
Welcome and Introduction  
A. Johnson.

**9:40 AM**  
8 Euthanasia—An overview of the AVMA’s criteria and recommendations.  
G. C. Golab*, American Veterinary Medical Association, Schaumburg, IL.

**10:10 AM**  
9 Euthanasia of livestock: Public perception and influence.  
S. R. Niekamp*, National Pork Board, Clive, IA.

**10:30 AM**  
10 The signs of unconsciousness and death: How can we recognize them on the farm?  
T. M. Widowski*, T. M. Casey-Trott†, and M. A. Erasmus‡, 1Campbell Centre for the Study of Animal Welfare, University of Guelph, Guelph, Ontario, Canada; 2Michigan State University, Lansing.

**11:00 AM**  
Break

**11:15 AM**  
11 Novel euthanasia technologies for the pig.  
S. T. Millman*, Veterinary Diagnostic & Production Animal Medicine, Iowa State University, Ames.

**11:45 AM**  
12 Euthanasia techniques for dairy and beef cattle.  
J. K. Shearer*, J. P. Reynolds†, D. D. Griffin‡, and G. Johnson†, 1Iowa State University, Ames; 2Western Veterinary College, Pomona, CA; 3University of Nebraska, Lincoln; 4Reedsburg, Wisconsin.

**12:15 PM**  
Open floor wrap-up  
A. Johnson.

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**Animal Health**  
**Beef**

Chair: Holly Neibergs, Washington State University  
Sponsor: Pfizer Animal Health  
297

**9:30 AM**  
13 Weaning management of newly received beef calves with or without continuous exposure to a persistently infected bovine viral diarrhea virus pen mate: Effects on rectal temperature, peripheral blood leukocytes and serum proinflammatory cytokine concentrations.  
J. T. Richeson*, E. B. Kegley†, J. G. Powell†, R. G. Schaut‡, R. E. Sacco§, and J. F. Ridpath‖, 1University of Arkansas, Fayetteville; 2Iowa State University, Ames; 3USDA-ARS, National Animal Disease Center, Ames, IA.

**9:45 AM**  
14 Effect of oral meloxicam on performance and health of stocker calves after castration.  
J. F. Coetzee*, L. N. Edwards†, R. A. Mosher†, A. M. O’Connor†, B. Wang†, B. KuKanich‡, and D. A. Blasi†, 1Kansas State University, Department of Animal Science and Industry, Manhattan; 2Iowa State University, Ames.

**10:00 AM**  
15 Characterization and antibiotic susceptibility of Mycoplasma isolates from mastitic buffaloes.  
I. Hussain*, S. ur Rahman*, F. A. Atif†, and M. Arif‡, 1University College of Agriculture, University of Sargodha, Sargodha, Punjab, Pakistan; 2University of Agriculture Faisalabad, Faisalabad, Punjab, Pakistan.

**10:15 AM**  
16 Development of detecting kit for bovine myeloperoxidase using enzyme-linked immunosorbent assay.  
J. Shi, Q.-Z. Li*, Y. Yang, Y. Lv, and X.-J. Gao, Key Laboratory of Dairy Science of Ministry of Education, Northeast Agricultural University, P.R. China.

**10:30 AM**  
17 The identification of candidate genes and candidate gene structural variation for bovine spongiform encephalopathy.  

**10:45 AM**  
18 Genomic regions associated with incidence of disease in cattle using DNA pooling and a high-density single nucleotide polymorphism array.  
In vitro and in vivo anthelmintic activity of Amomum subulatum Roxb. seeds.
Z. Iqbal*, N. Badar, M. Khan, and Z. Sindhu, Department of Parasitology, University of Agriculture, Faisalabad, Punjab, Pakistan.

Lentisk (Pistacia lentiscus L.) browse prevents gastro-intestinal nematode infection in goats.

Occurrence of paratuberculosis in the hilly regions of Himachal Pradesh, India.

Status of Mycobacterium avium subspecies paratuberculosis Infection in the Cow Shelters (Goshalas/Pinjarapoles) in India.

Finishing performance and carcass traits of heifers previously managed with three respiratory disease protocols.
J. L. Wahrmund*, D. B. Burken, B. K. Wilson, S. J. Terrill, C. R. Krehbiel, D. L. Step, S. M. Trost, C. L. Goad, and C. J. Richards, Oklahoma State University, Department of Animal Sciences, Stillwater, Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater, Strategic Solutions International, Stillwater, OK, Oklahoma State University, Department of Statistics, Stillwater.

Management and genetic factors affecting efficiency of cattle in a grazing environment.

Genetics of postweaning performance of beef cattle on forage.

A historical perspective on the influence of the beef industry on mature cow size.
B. McMurry*, Cargill Animal Nutrition, Minneapolis, MN.

Conclusion: Cow size and keeping perspective.
R. H. Pritchard*, South Dakota State University, Brookings.

Effect of different genomic relationship matrices on accuracy and scale.
I. Misztal*, C. Y. Chen, I. Aguilar, Z. G. Vitezica, A. Legarra, and W. M. Muir, University of Georgia, Athens, Newsham Choice Genetics, Chesterfield, MO, INRA, Castanet-Tolosan, France, Purdue University, West Lafayette, IN, INIA, Las Brujas, Uruguay.
9:45 AM 30 Comparisons of numerator and genomic and relationship matrices.
H. Wang* and I. Misztal, University of Georgia, Athens, GA.

10:00 AM 31 A recursive method of approximation of the inverse of genomic relationships matrix.
P. Faux*, N. Gengler1,2, and I. Misztal1, 1University of Liege, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium, 3University of Georgia, Animal and Dairy Science Department, Athens.

10:15 AM 32 Adapting Bayesian mixture model algorithms to estimate hyperparameters that characterize genetic architecture in genomic selection models.
R. J. Tempelman*, W. Yang2, J. P. Steibel1, and N. M. Bello2, 1Michigan State University, East Lansing, 2Kansas State University, Manhattan.

10:30 AM 33 Improving accuracy of genomic selection by hierarchical Bayesian modeling of spatially correlated chromosomal effects.
W. Yang* and R. J. Tempelman, Michigan State University, East Lansing.

10:45 AM 34 Incorporating molecular breeding values with variable call rates into genetic evaluations.

11:00 AM 35 Impacts of inclusion of foreign data in genomic evaluation of dairy cattle.
K. M. Olson*, P. M. VanRaden2, and D. J. Null3, 1National Association of Animal Breeders, Columbia, MO, 2Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

11:15 AM 36 Optimization of principal component extraction for direct genomic value prediction in a multibreed population.
N. P. P. Macciotta*, M. A. Pintus1, R. Steri1, G. Gaspa2, D. Vicario2, E. Santus3, J. T. H. Van Kaam1, and P. Ajmone Marsan1, 1Università di Sassari, Sassari, Italy, 2ANAPRI, Udine, Italy, 3ANARB, Bussolengo, Italy, 4ANAFI, Cremona, Italy, 5Università Cattolica del Sacro Cuore, Piancenza, Italy.

11:30 AM 37 Adjustment of deregressed values from cow evaluations to have the similar mean and variance as bull deregressed values.
G. R. Wiggans*, P. M. VanRaden, and T. A. Cooper, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

11:45 AM 38 Effectiveness of genomic selection on milk flow traits in dairy cattle.
K. A. Gray*, J. P. Cassady, A. Rossoni1, and C. Maltecca1, 1North Carolina State University, Raleigh, 2Italian Brown Breeders Association, Bussolengo, VR, Italy.

12:00 PM 39 Visualization of associations between single nucleotide polymorphisms and economically important dairy traits using biplot analysis.
A. I. Vazquez2, K. A. Weigel1, G. J. M. Rosa2, D. Gianola2, and D. B. Allison2, 1University of Alabama, Birmingham, 2University of Wisconsin, Madison.

12:15 PM 40 Using single nucleotide polymorphism to detect selection signature in Hereford beef cattle.
Y. Huang*, C. Maltecca1, M. D. MacNeil2, and J. P. Cassady3, 1Department of Animal Science, North Carolina State University, Raleigh, 2USDA-ARS, Fort Keogh Livestock and Range Research Laboratory, Miles City, MT.

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Extension Education Symposium
Reinventing Extension as a Resource – What does the Future Hold?
Chair: Vanessa Corriher, Texas A&M University

9:30 AM Introduction
V. Corriher, Texas A&M University.

9:35 AM 41 National Institute of Food and Agriculture (NIFA) grants and extension: Expectations for integrated projects.
M. A. Miranda* and K. M. Whittet, National Institute of Food and Agriculture, U.S. Department of Agriculture, Washington, DC.

10:20 AM 42 Integrating extension and research projects.
D. J. Patterson*, University of Missouri, Columbia.

11:00 AM 43 The role of extension in delivering research results to producers and allied industry partners through a national platform.
D. M. Amaral-Phillips* and N. L. McGill, University of Kentucky.
Food Safety Symposium
Safe Food Production: Zoonotic Disease-Control, Responsibility, and Liability
Chair: Kristi Smedley, Center for Regulatory Services Inc.

9:30 AM 46 Safe food production: Zoonotic disease-control, responsibility, and liability.
C. Custer*, Independent Consultant.

9:40 AM FDA Authority and Food Production Controls to Protect the Public from Zoonotic Diseases.
T. Schell, FDA/CVM.

10:00 AM Authority and Food Production Controls to Protect the Public from Zoonotic Diseases.
D. Engeljohn, USDA.

10:20 AM Animal Traceability—a part of the solution.
S. Larsen, National Pork Board.

10:30 AM 47 Fundamentals of foodborne illness litigation – Are you at risk?
P. Waller*, Epidemiologist, Marler Clark Law Firm.

11:00 AM Panel Discussion/Questions

Forages and Pastures
Improving Silage Conservation, Utilization and Performance of Grazing Ruminants
Chair: Limin Kung and Jamie Foster

9:30 AM 48 Effect of microbial inoculants on the quality and stability of bermudagrass haylage.

9:45 AM The impact of aerobic deterioration of corn silage on feed intake by goats.
K. Gerlach*, F. Roß, W. Büscher, and K.-H. Südekum, University of Bonn, Bonn, Germany.

10:00 AM Caloric content of brown midrib sorghum silage harvested at two maturities, fed with concentrate at two levels of intake using in vivo, in vitro and prediction equation methods as related to rumen fermentation and fractional passage.

10:15 AM Intake and digestibility in steers fed sugarcane ensiled with different levels of calcium oxide.

10:30 AM Effects of co-grazing dairy heifers with goats on animal performance, pasture composition, and dry matter yield.
T. S. Dennis*, M. K. Neary, L. J. Unruh-Snyder, J. E. Tower, and T. D. Nennich, Purdue University, West Lafayette, IN.

10:45 AM Forage mineral concentrations and mineral status of beef cattle grazing cool season pastures in northwestern Florida, emphasizing magnesium.

11:00 AM In vitro rumen fluid digestion activity of grazing cows as related to productivity and days postpartum.
11:15 AM  55  Forage characteristics and animal performance of beef heifers grazing 'Mulato II' brachiariagrass in North-Central Florida.
J. M. B. Vendramini*1, G. C. Lamb2, L. E. Sollenberger3, J. L. Foster4, and M. Maddox2, 1UF/IFAS Range Cattle Research and Education Center, Ona, 2UF/IFAS North Florida Research and Education Center, Marianna, 3Agronomy Department, Gainesville, FL, 4Texas AgriLife Research and Education Center, Beeville.

11:30 AM  56  Bermudagrass–legume forage systems for summer stockers.
B. M. Nichols1, C. A. Moffet1, J. T. Biermacher1, T. J. Butler1, R. R. Reuter1, J. K. Rogers1, J. A. Guretzky2, and J. R. Blanton*1, 1The Samuel Roberts Noble Foundation, Ardmore, OK, 2University of Nebraska, Lincoln.

11:45 AM  57  Stocker production systems utilizing warm-season perennial grass pasture: Cattle performance and nitrogen use efficiency.

12:00 PM  58  Effect of protein supplementation on intake and digestion of three bermudagrass hays of divergent quality by beef cattle.
C. P. Payne*, T. M. Warnock, J. E. Sawyer, and T. A. Wickersham, Texas A&M University, College Station.

12:15 PM  59  Effect of level and frequency of protein supplementation on utilization of South Texas grass hay.
G. R. Monson1, J. E. Sawyer1, R. O. Dittmar1, M. L. Drewery1, C. P. Payne1, K. C. McCuistion2, and T. A. Wickersham*, 1Texas A&M University, College Station, 2Texas A&M University-Kingsville, Kingsville.

Graduate Student Competition: ADSA Dairy Foods Oral Competition
Chair: Stephanie Clark, Iowa State University
295

9:30 AM  60  Effect of salt replacers and flavor enhancers to reduce sodium in Cheddar cheese on aging and sensory properties.
J. E. Grummer* and T. C. Schoenfuss, University of Minnesota, Department of Food Science and Nutrition, St. Paul.

9:45 AM  61  The influence of NaCl reduction on the properties of cheddar cheese where moisture contents were kept constant.
K. V. Grant*, S. Govindasamy-Lucey2, J. J. Jaeggi2, M. E. Johnson2, and J. A. Lucey1, 1University of Wisconsin, Madison, 2Wisconsin Center for Dairy Research, Madison.

10:00 AM  62  Concentration of casein micelles: Changes in renneting functionality in the presence of sodium caseinate.
P. Krishnankutty Nair*1,2 and M. Corredig1, 1Department of Food Science, University of Guelph, Guelph, Ont., Canada, 2Department of Dairy Development, Government of Kerala, India.

10:15 AM  63  Impact of transglutaminase on the functionality of micellar casein concentrate in process cheese product applications.
P. Salunke* and L. E. Metzger, Midwest Dairy Foods Research Centre, South Dakota State University, Brookings.

10:30 AM  64  Production of a high concentration liquid micellar casein concentrate (18% protein) with a long refrigerated shelf-life.
I. Amelia* and D. M. Barbano, Cornell University, Ithaca, NY.

10:45 AM  65  Serum protein removal from skim milk with a 3-stage, 3X ceramic Isoflux membrane process at 50°C.
M. Adams* and D. M. Barbano, Cornell University, Ithaca, NY.

11:00 AM  66  The manufacture of linoleic acid-modified chitosan/β-lactoglobulin nanoparticles as a delivery system of quercetin.
H.-K. Ha*, M.-R. Lee, and W.-J. Lee, Division of Applied Life Sciences (Institute of Agriculture and Life Science), Gyeongsang National University, Jinju, Korea.

11:15 AM  67  Alternative bleaching methods for 80% whey protein concentrate.
E. J. Kang* and M. A. Drake, North Carolina State University, Raleigh.

11:30 AM  68  Impact of bleaching whey on the sensory and functional properties of 80% whey protein concentrate.
S. M. Jervis*, R. E. Campbell1, K. Wojciechowski2, D. M. Barbano2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Cornell University, Ithaca, NY.

11:45 AM  69  The complete genome sequence of Bifidobacterium animalis ssp. animalis ATCC 25527 and analysis of growth in milk.
J. R. Loquasto*1, R. Barrangou1, E. G. Dudley1, and R. F. Roberts1, 1The Pennsylvania State University, University Park, 2Danisco USA Inc., Madison, WI.
Graduate Student Competition: ADSA Graduate Paper Competition - Production Division - PhD Students
Chair: Benjamin Corl, Virginia Tech

9:30 AM 70  
**Ruminal fermentation characteristics and lactational performance of Holstein dairy cows fed whole safflower seeds.**  
1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department of Animal Science, North Carolina State University, Raleigh, 3Cooperative Extension, Utah State University, Logan.

9:45 AM 71  
The effects of NPH insulin and insulin glargine on milk yield and composition by lactating dairy cows.  

10:00 AM 72  
The effects of degradable nitrogen level and degradation rate on nitrogen balance and urea kinetics in Holstein steers.  
1University of Kentucky, Lexington, 2Alltech, Brookings, SD, 3Aarhus University, Tjele, Denmark.

10:15 AM 73  
Effects of monensin on metabolic parameters, feeding behavior, and productivity of transition dairy cows.  
1Kansas State University, Manhattan, 2Elanco Animal Health, Greenfield, IN.

10:30 AM 74  
The effect of ketoprofen following left displaced abomasum surgery on lying behaviour and ketosis.  
1University of Guelph, Guelph, Ontario, Canada, 2University of British Columbia, Vancouver, British Columbia, Canada.

10:45 AM 75  
Ruminal fermentation and nutrient digestion by dairy cows fed different concentrations of forage and dried distillers grains with solubles.  
South Dakota State University, Brookings.

11:00 AM  
Break

11:15 AM 76  
On-farm validation of two rapid methods to estimate IgG in bovine colostrum.  
1Iowa State University, Ames, 2APC Inc., Ankeny, IA.

11:30 AM 77  
Physiological and transcriptional adaptations in adipose tissue of dairy cows in response to prepartal plane of dietary energy.  
University of Illinois, Urbana.

11:45 AM 78  
Expression of novel, putative stem cell markers in prepubertal and lactating bovine mammary glands.  
R. K. Choudhary*, C. M. Evock-Clover, and A. V. Capuco.  
1Department of Animal Sciences, University of Maryland, College Park, 2Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD.

12:00 PM 79  
Effect of dietary protein level and rumen-protected methionine supplementation on performance of lactating dairy cows.  
1Pennsylvania State University, University Park, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Evonik Degussa GmbH, Hanau, Germany.

12:15 PM 80  
Summer assessment and validation of metabolic profile reference values for transition Holstein dairy cattle.  
1Texas AgriLife Extension Service, Texas A&M System, College Station, 2West Texas A&M University, Canyon.

12:30 PM 81  
Effect of follicular wave and progesterone (P4) concentration during follicle growth on fertility of dairy cows.  
1University of Florida, Gainesville, 2University of British Columbia, Vancouver, BC, Canada.

Graduate Student Competition: ADSA Southern Section
Chair: Christie Stanley, Land O’Lakes Purina Feed

9:30 AM 82  
Production response to corn silage produced from normal, brown midrib, or waxy corn hybrids.  
J. S. Barlow*, J. K. Bernard, and N. A. Mullis.  
The University of Georgia, Tifton.

9:45 AM 83  
Ruminal escape and intestinal digestibility of experimental ruminal protected lysine supplements.  
1University of Georgia, Tifton, 2University of Georgia, Athens, 3Clemson University, Clemson, SC.
10:00 AM  
**Effect of sample processing on in situ protein degradability of distillers grains.**
M. L. Drewery\*, J. E. Sawyer\!, N. M. Kenney\!, W. E. Pinchak\!, and T. A. Wickersham\!, \!Texas A&M University, College Station, \!Texas AgriLife Research, Vernon.

10:15 AM  
**Effects of heat stress and increased protein and energy fed in milk replacers on health parameters of neonatal Holstein bull calves.**
A. J. Krenek\*, G. A. Holub\!, T. A. Tomaszewski\!, and C. C. Stanley\!, \!Texas A&M University, College Station, \!Land O Lakes Purina Feed, Amarillo, TX.

10:30 AM  
**Effects of resistant starch in milk replacer on health and performance of neonatal Holstein heifer calves.**
B. L. Fisher\*, B. F. Jenny, C. C. Williams, C. F. Hutchison, A. H. Dolejsiova, and R. G. Morell, LSU AgCenter, Baton Rouge, LA.

10:45 AM  
**Potential for estrus detection in dairy cattle using reticular temperature monitors.**
W. A. Smith\*, W. J. Silvia, and J. M. Bewley, University of Kentucky, Lexington.

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**Lactation Biology Symposium**  
**Circadian Clocks and Photoperiod in Mammary Development and Lactation**  
Chair: Darryl Hadsell, Baylor College of Medicine  
286-287

9:30 AM  
**Welcome and Introduction**
D. Hadsell, Baylor College of Medicine, Houston, TX.

9:35 AM  
**Circadian timekeeping mechanisms.**
P. Hardin\*, Texas A&M University, College Station.

10:15 AM  
**Circadian clocks in mammary gland development and differentiation.**
W. Porter\*, Texas A&M University, College Station.

10:55 AM  
**Break**

11:10 AM  
**Circadian clocks as mediators of the homeorhetic response to lactation.**
T. Casey\* and K. Plaut, Purdue University, West Lafayette, IN.

11:50 AM  
**Effects of photoperiod on mammary gland development and lactation.**

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**Nonruminant Nutrition**  
**Enzymes & Minerals**  
Chairs: Mark Whitney, University of Minnesota, and Rommel Sulabo, University of Illinois  
Sponsors: BASF, Archer Daniels Midland  
383-385

9:30 AM  
**Supplemental dietary phytase alters gut microbiota of weanling pigs.**
L. Wang and X. G. Lei\*, Cornell University, Ithaca, NY.

9:45 AM  
**Effects of phytase on standardized total tract digestibility of P in copra expellers, palm kernel expellers, and palm kernel meal fed to growing pigs.**
B. L. Almaguer\*, R. C. Sulabo\!, and H. H. Stein\!, \!Universidad Autónoma de Querétaro, Mexico, \!University of Illinois, Urbana.

10:00 AM  
**Supplementing a xylanase alone or a combination of xylanase and β-glucanase on growth performance, health, and nutrient digestibility of nursery pigs.**
Y. Han\* and A. Ludger, Nutreco R & D, Boxmeer, the Netherlands.

10:15 AM  
**Effect of different dietary calcium concentrations on the digestive and metabolic response of growing pigs to microbial phytase.**
**Effects of supplemented NSP-degrading enzymes on nutrient digestibility of diets containing wheat and wheat millrun fed to grower pigs.**


**Capillary electrophoresis coupled with inductively coupled plasma mass spectrometry (CE-ICP-MS) enables identification and quantification of copper and manganese glycinate complexes in enriched feed samples and the study of their bioavailability.**

C. Ionescu*, V. Vacchina2, R. Lobinski3, and D. Bravo1, 1Pancosma, Geneva, Switzerland, 2UT2A, Pau, France, 3CNRS, Pau, France.

**Effects of feeding tribasic copper chloride or copper sulfate on growth and efficiency of nursery pigs.**


**Intestinal, liver, kidney, serum and biliary Cu concentrations in piglets fed Cu proteinate or CuSO4.**

B. Aldridge*, R. F. Power2, K. A. Dawson2, and S. Radcliffe1, 1Purdue University, Department of Animal Science, West Lafayette, IN, 2Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.

**Effect of dietary calcium on gastric ulceration in yearling horses.**

C. W. Waters*, D. H. Sigler1, N. D. Cohen2, and P. G. Gibbs3, 1Texas A&M University Department of Animal Science, College Station, 2Texas A&M University College of Veterinary Medicine, College Station.

**Physiology and Endocrinology**

**Estrous Cycle Manipulation - Dairy**

Chair: Paul Fricke, University of Wisconsin

393

**Ovarian follicular development, luteal function, and fertility in lactating Holstein cows treated with 14dCIDR_PGF or 2xPGF_Ovsynch56 for first insemination timed AI (TAI).**


**Prostaglandin F2α and GnRH administration increase progesterone, luteal number, and proportion of dairy cows with corpora lutea before a timed AI program.**

J. S. Stevenson*, S. L. Pulley, and H. I. Mellieon, Kansas State University, Manhattan.

**Evaluation of LH release after the intrauterine administration of gnrh in lactating dairy cattle.**

S. Bas*, C. G. Pinto, M. L. Day, and G. M. Schuenemann, The Ohio State University, Columbus.

**Effect of presynchronization strategy prior to ovsynch on fertility at first service in lactating dairy cows.**

A. Keskin1, G. Yilmazbas-Mectitoglu*, E. Karakaya1, A. Alkan2, H. Okut3, A. Gumen2, and M. C. Wilbank4, 1Department of Obstetrics and Gynecology, Faculty of Veterinary Medicine, University of Uludag, Bursa, Turkey, 2Tarfas Company, Bursa, Turkey, 3Biometry and Genetics, Faculty of Agriculture, University of Yuzuncu Yil, Van, Turkey, 4Department of Dairy Science, University of Wisconsin-Madison, Madison.

**Effects of presynchronization (PRE) and length of proestrus (LP) on pregnancy per AI (P/AI) of grazing dairy cows subjected to the 5d-Cosynch protocol.**


**Two- and three-wave estrous cycles in dairy cows, investigated with a mechanistic mathematical model.**

M. Boer*, L. Röblitz2, C. Stötzel2, R. Veerkamp1, B. Kemp1, and H. Woelders1, 1Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Lelystad, the Netherlands, 2Computational Systems Biology Group, Zuse Institute Berlin, Berlin, Germany, 3Adaptation Physiology Group, Department of Animal Sciences, Wageningen University, Wageningen, the Netherlands.
Production, Management and the Environment
Dairy Production I
Chair: Marcia Endres, University of Minnesota
386-387

9:30 AM 107 A meta-analysis of the impact of stocking rate on the productivity of pasture-based milk production systems.
B. McCarthy*1,2, L. Delaby3, K. M. Pierce4, F. Journot5, and B. Horan6, 1Animal and Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, 2School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland, 3INRA, AgroCampus Ouest, Saint-Gilles, France.

9:45 AM 108 Claw length and angle in lactating Jersey cattle, field measurements.
D. J. Tomlinson*,1, L. Rodriguez1, M. L. McGilliard2, and K. Burgi3, 1Virginia Tech, Blacksburg, 2Dairyland Hoof Care Institute Inc., Baraboo, WI.

10:00 AM 109 A ranking system based on stochastic modeling to identify efficient dairy farms using farm-level inputs.
A. S. Atzori*,1, A. Cannas1, and L. O. Tedeschi2, 1Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy, 2Department of Animal Science, Texas A&M University, College Station.

10:15 AM 110 Predictors of primiparous and multiparous transition cow success from an automatic milking system.

10:30 AM 111 Effects of sodium bicarbonate or calcium magnesium carbonate on intake, digestibility and milk yield and composition of high producing dairy cows.
R. E. Rauch*,1, P. H. Robinson1, D. D. Simms3, and L. J. Erasmus1, 1University of Pretoria, Pretoria, South Africa, 2University of California, Davis, 3MIN-AD, Amarillo, TX.

11:00 AM 112 Withdrawn

11:00 AM 113 Quantification of phytate in dairy digesta and feces using alkaline extraction and high performance ion chromatography.

Ruminant Nutrition
Beef: By-Product Feeds
Chair: Aimee Wertz, South Dakota State University
294

9:30 AM 115 Effects of corn processing method and dietary inclusion of wet distillers grain with solubles on carbon-nitrogen balance of finishing cattle.
K. E. Hales*,1, N. A. Cole1, and J. C. MacDonald2, 1USDA-ARS-CPRL, Bushland, TX, 2Texas Agrilife Research Center, Amarillo.

9:45 AM 116 Effects of corn processing method and dietary inclusion of wet distillers grain with solubles on energy metabolism and enteric methane emissions of finishing cattle.
K. E. Hales*,1, N. A. Cole1, and J. C. MacDonald2, 1USDA-ARS-CPRL, Bushland, TX, 2Texas Agrilife Research Center, Amarillo.

10:00 AM 117 Effects of spoilage of wet distillers grains plus solubles on feedlot performance.

10:15 AM 118 Effect of partially replacing barley grain with wheat bran alone or in combination with condensed liquid whey on performance of backgrounding steers.
A. D. Friedt*,1, T. A. McAllister2, B. Wildeman3, and J. J. McKinnon1, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada, 3Pound-Maker Agventures Ltd., Lanigan, SK, Canada.

10:30 AM 119 Effects of wet distillers grains plus solubles on health and performance of high-risk calves.

10:45 AM 120 Effect of feeding crude glycerin on prevalence of E. coli O157:H7 in growing cattle.
C. Aperce*, J. Heidenreich, C. J. Schneider, and J. S. Drouillard, Kansas State University, Manhattan, Kansas.

11:00 AM 121 Effects of distillers grain with soluble and supplemental copper and molybdenum on ammonia emissions and nitrogen retention.
11:15 AM 122 Effect of adding rumen degradable protein to a dried distillers grain supplement on growth performance and body composition in yearling Angus and Brangus heifers.

11:30 AM 123 Feeding distillers grains containing elevated sulfur concentration depresses performance of feedlot steers.
S. Uwituze1, C. L. Van Bibber3*, K. A. Miller1, K. K. Karges2, L. C. Hollis3, J. J. Higgins2, and J. S. Drouillard1, 1Department of Animal Sciences and Industry Kansas State University, Manhattan, 2Department of Nutrition, University of Idaho, Moscow, Idaho, 3University of Minnesota, St. Paul.

11:45 AM 124 Effects of crude glycerin in byproducts diets on performance and carcass characteristics of feedlot cattle.
E. H. C. van Cleef3*, S. Uwituze1, C. L. Van Bibber1, K. A. Miller1, C. C. Aperce1, K. L. Blaine1, J. J. Higgins2, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2São Paulo State University, Jaboticabal, São Paulo, Brazil.

12:00 PM 125 Use of corn or crude glycerol as energy source to supplement holstein calves fed with sorghum silage ad-libitum.
P. Chilibroste1*, A. Elias2, and J. P. Marchelli1, 1Agronomy Faculty, EEMAC, Paysandu, Uruguay, 2Instituto de Ciencia Animal, San Jose de las Lajas, La Habana, Cuba.

12:15 PM 126 Substitution of distillers grains and glycerin for steam-flaked corn in finishing cattle diets on performance and carcass characteristics.

Ruminant Nutrition
Dairy: Protein and Fats
Chair: Alex Bach, IRTA, Spain
293

9:30 AM 127 Effect of linoleic acid supplementation to Holstein dams and calves on immune measures of calves.
M. Garcia1*, L. F. Greco, J. E. P. Santos, and C. R. Staples, University of Florida, Gainesville.

9:45 AM 128 Effect of replacing solvent-extracted canola meal with high-oil traditional canola, high-oleic acid canola, or high-erucic acid rapeseed meals on milk production and milk fatty acid composition in lactating dairy cows.
A. N. Hristov1*, C. M. V. M. Khorvash1, A. Wachter1, T. Cassidy2, C. Lee3, K. J. Shingfield4, P. Kairenius2, J. Davis1, and J. Brown1, 1Pennsylvania State University, University Park, 2MTT Agrifood Research Finland, Jokioinen, Finland, 3University of Idaho, Moscow.

10:00 AM 129 Chain length of dietary saturated fatty acids affects meal patterns and plasma metabolite and hormone concentrations of cows varying in milk yield.
M. Hollmann*, M. S. Allen, and D. K. Beede, Department of Animal Science, Michigan State University, East Lansing.

10:15 AM 130 Effects of different amounts of dietary protected and unprotected niacin on responses of blood metabolites to an epinephrine challenge in dairy cows.
F. C. Cardoso2*, J. Garrett1, and J. K. Drackley1, 1University of Illinois, Urbana, 2QualiTech, Chaska, MN.

10:30 AM 131 Chain length of saturated fatty acids affects intake and ruminal turnover of NDF and chewing activity in lactating cows varying in milk yield.
M. Hollmann*, M. S. Allen, and D. K. Beede, Department of Animal Science, Michigan State University, East Lansing.

10:45 AM 132 Performance and milk fatty acid profile of Holstein dairy cows in response to dietary fat supplements and forage:concentrate ratio.
S. Kargar1, M. Khorvash1, G. R. Ghorbani3*, M. Alikhani3, and D. J. Schingoethe2, 1University of Technology, Isfahan, Iran, 2South Dakota State University, Brookings.

11:00 AM 133 Effect of a high palmitic acid fat supplement on ruminal fermentation and milk production in high- and low-producing dairy cows.

11:15 AM 134 Effect of extruded flaxseed or alfalfa protein concentrate in interaction with two levels of concentrate on milk fat production.
C. Hurtaud1*, G. Chesneau2, D. Coulmier3, and J. L. Peyraud2, 1INRA-Agrocampus Ouest, Saint-Gilles, France, 2Valorem, Combournillé, France, 3Desialis, Paris, France.

11:30 AM 135 Abomasal infusion of butterfat during CLA induced milk fat depression in lactating dairy cows.
D. Vyas*, U. Moallem3, B. B. Teter1, P. Delmonte3, and R. A. Erdman3, 1Department of Animal and Avian Sciences, University of Maryland, College Park, 2Agriculture Research Organization, Bet Dagan, Israel, 3U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD.
### ADSA-SAD Dairy Foods Undergraduate Competition

**Chair:** Elizabeth Karcher, Michigan State University

#### 11:00 AM

- **Milk fats in the American diet.**
  - R. Pomeroy*, North Carolina State University, Raleigh.

#### 11:15 AM

- **Fortification of omega-3 milk.**

#### 11:30 AM

- **The promise of bovine lactoferrin for breast cancer prevention.**
  - E. Schaffel* and J. Fain, Clemson University, Clemson, SC.

#### 11:45 AM

- **Market research to boost dairy product demand.**
  - A. N. Waldeck*, University of Kentucky, Lexington.

#### 12:00 PM

- **Dairy super foods: Antioxidants could make the difference.**
  - S. B. Weimer* and D. R. Olver, Pennsylvania State University, University Park.

#### 12:15 PM

- **What you don’t know can hurt you: Unlocking the secrets of milk.**
  - T. Hippman*, Louisiana State University, Baton Rouge.

### Graduate Student Competition: ADSA-ASAS Northeast Section

**Chair:** Kristen Govoni, University of Connecticut

**Sponsor:** ASAS Foundation

#### 11:00 AM

- **The effect of an exogenous amylase on performance and total tract digestibility in lactating dairy cows.**

#### 11:15 AM

- **Spoilage yeasts in silage have the potential to directly impact rumen fermentation.**
  - M. C. Santos*, A. L. Lock, G. D. Mechor, and L. Kung, University of Delaware, Newark, Michigan State University, Elanco Animal Health, Greenfield, IN.

#### 11:30 AM

- **The effects of PPAR-gamma agonist and conjugated linoleic acid on mammary and hepatic lipid metabolism in lactating mice.**
  - D. Vyas*, B. B. Teter, P. Delmonte, and R. A. Erdman, Department of Animal and Avian Sciences, University of Maryland, College Park, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD.

#### 11:45 AM

- **Expression of T-box (Tbx) 3 in bovine mammary epithelial cells.**
ADSA-SAD Dairy Production Undergraduate Competition
Chair: Elizabeth Karcher, Michigan State University

1:00 PM 149 Colostrum replacers in neonatal dairy calf management.
E. Eckelkamp*, Louisiana State University, Baton Rouge.

1:15 PM 150 Genomics: A tool for commercial dairy producers.
L. Ellison*, University of Florida, Gainesville.

1:30 PM 151 Implementing an accelerated heifer program: Is it worth the risk?
S. E. Fraley* and E. L. Karcher, Michigan State University, East Lansing.

1:45 PM 152 Genomic testing as a tool for herd development.
L. Krueger* and J. Robison, California State University-Fresno, Fresno.

2:00 PM 154 Bacteriophages as a potential treatment for mastitis.

2:15 PM 155 Heat.
C. Hoffner*, North Carolina State University, Raleigh.

2:30 PM 156 Direct-fed microbials: Decreasing scrutiny and increasing productivity.
A. Sassard* and J. Fain, Clemson University, Clemson, SC.

2:45 PM 157 Genetic selection for feed efficiency in dairy cows.
A. M. Yeiser* and C. D. Dechow, Pennsylvania State University, University Park.

3:00 PM 153 Impact and control of claw lesions in dairy cattle.
T. A. Reiter* and J. M. Bewley, University of Kentucky, Lexington.

ADSA-SAD Original Research Undergraduate Competition
Chair: Elizabeth Karcher, Michigan State University

1:00 PM 158 Assessment of ruminal fermentation characteristics under normal or high fermentative temperature in continuous cultures.
C. C. King*, C. M. Dschaak1, J.-S. Eun1, V. Fellner2, and A. J. Young1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Department of Animal Science, North Carolina State University, Raleigh.

1:15 PM 159 Supplemental butyrate does not enhance selective permeability of ruminal epithelia in sheep.
D. J. Wilson*, T. Mutsvangwa, and G. B. Penner, University of Saskatchewan, Saskatoon, SK, Canada.

1:30 PM 160 Effect of feeding a C16:0-enriched fat supplement on milk fatty acid composition.

1:45 PM 161 Impact of water intake on dairy cattle reticulorumen temperature.
M. Cornett*, D. Ray, and J. Bewley, University of Kentucky.

2:00 PM 162 Genotype and breed trend influences on citric acid and coagulation times of raw milk.
M. Looney*, A. Laubscher1, J. Medrano4, R. Jimenez-Flores1, and G. Rincon1, 1California Polytechnic State University, San Luis Obispo, 2University of California, Davis, Davis.

2:15 PM 163 Effects of different flooring options in outside pens of hutches on dairy calf growth.
K. A. Hoeing**, M. A. Laws1, T. S. Dennis1, M. M. Schutz1, S. D. Eicher2, and T. D. Nennich1, 1Purdue University, West Lafayette, IN, 2USDA-ARS, West Lafayette, IN.

2:30 PM Break

2:45 PM 164 Alterations in the rate of progesterone clearance induced by insulin-like growth factor-I in the mouse hepatocyte.
C. L. Varela*, K. D. Baldock, W. G. Squire, and D. L. Smith, Eastern New Mexico University, Portales.

3:00 PM 165 The effects of protease enzymes and storage on the ensiling and nutritive value of corn silage.

3:15 PM 166 Differences in the rumen methanogen population exist between Jerseys and Holsteins.
E. King*, R. Smith, and A-D. Wright, University of Vermont, Burlington.
The association of electrical conductivities and California Mastitis Tests on a robotic dairy farm. 
A. M. Brigham*, 1, C. D. Dechow¹, and B. Carter², 1Pennsylvania State University, University Park, ²Keseca Veterinary Clinic, Geneva, NY.

Effects of shade on heat stress reduction in Holstein dairy calves. 
S. S. Thibeau*, 1, L. B. Sage¹, C. C. Williams¹, B. F. Jenny¹, and A. H. Dolejsiova², 1Louisiana State University, Baton Rouge, 2LSU AgCenter, Baton Rouge, LA.

Xylose absorption in dairy calves supplemented with sodium butyrate in milk replacer. 
N. M. Larson*, 1, S. I. Kehoe¹, S. Moreland², and D. Shields¹, 1University of Wisconsin-River Falls, River Falls, ²Nutriad, Inc., Elgin, IL, ¹Merrick’s, Inc., Union Center, WI.

ADSA Southern Section Symposium
Producing Quality Milk in Hot, Humid Climates 
Chair: Patrick D. French, The Old Mill-Troy, Inc.

Extension programming in Kentucky to address somatic cell count challenges and opportunities. 
J. M. Bewley*, University of Kentucky, Lexington.

Dairy producer adoption of mastitis control technologies for reducing herd somatic cell counts. 
S. C. Nickerson*, University of Georgia, Athens.

Effect of micronutrients on the regulation of the immune system and its role in milk quality. 
W. Weiss*, OARDC/The Ohio State University, Wooster.

Use of records to investigate and monitor mastitis in dairies. 
M. W. Overton*, University of Georgia, Athens.

Advancing mastitis research: Using proteomics to identify biomarkers and evaluate adjunctive therapies. 
J. L. Boehmer*, U.S. Food and Drug Administration Center for Veterinary Medicine, Laurel, MD.

Break

Southern Branch Business Meeting

Animal Behavior and Well-Being 1
Chair: Janice Siegfard, Department of Animal Science, Michigan State University

Effects of oxytocin administration in early life on the behavioral and physiological stress response of swine. 
J. L. Rault*, 1, C. S. Carter¹, J. P. Garner¹, J. N. Marchant-Forde¹, B. T. Richert¹, and D. C. Lay¹, ¹Department of Animal Sciences, Purdue University, West Lafayette, IN, ²Department of Psychiatry, University of Illinois at Chicago, Chicago, ³USDA-ARS-Livestock Behavior Research Unit; Agricultural Research Service-USDA, West Lafayette, IN.

Flavor preferences in sucking piglets conditioned by prenatal flavor exposure through the maternal gestation diet. 

Preference in weanling pigs for sweet or umami taste after in utero exposure. 
S. J. Chavez*, E. van Heugten¹, I. Ipharraguerre², and G. B. Huntington¹, ¹North Carolina State University, Raleigh, 2R&D Feed Additives, Lucta S.A., Barcelona, Spain.

Withdrawn

Break

Glucosamine:chondroitin or ginger root extract have little effect on articular cartilage in swine. 
D. C. Lay*, J. N. Marchant-Forde¹, B. T. Richert¹, and K. A. McMunn¹, ¹Livestock Behavior Research Unit; Agricultural Research Service-USDA, West Lafayette, IN, ²Purdue University, West Lafayette, IN.
3:15 PM  180  Market pig transport losses, surface temperatures and trailer air temperatures with medium or heavy bedding on the trailer.
A. Sapkota*, 1  B. L. Davis1, A. Butters-Johnson2, and J. J. McGlone3, 1Texas Tech University, Lubbock, 2Iowa State University, Ames.

3:30 PM  181  Brain lesions and time to death resulting from application of a non-penetrating captive bolt to anaesthetized nursery piglets.
T. M. Casey-Trott1, R. Brooks2, P. V. Turner1, S. G. Nykamp1, M. Litman1, S. T. Millman2, and T. M. Widowski*1,
1University of Guelph, Guelph, Ontario, Canada, 2Iowa State University, Ames.

Animal Health
Johne’s Disease
Chair: K. E. Olson
Sponsor: Johne’s Disease Integrated Program
286-287

2:00 PM  182  Bayesian analysis of longitudinal Johne’s disease diagnostic data without a gold standard test.
C. Wang*, 1  B. Turnbull2, S. Nielsen3, and Y. Gröhn4, 1Iowa State University, Ames, 2Cornell University, Ithaca, NY, 3University of Copenhagen, Frederiksberg, Denmark.

2:15 PM  183  Environmental contamination with Mycobacterium avium ssp. paratuberculosis in endemically infected dairy herds.
R. L. Smith*, 1  Y. H. Schukken1, A. K. Pradhan1, J. M. Smith1, R. H. Whitlock1, J. S. Van Kessel2, D. R. Wolfgang3, and Y. T. Grohn1,
1Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY, 2Department of Animal Science, University of Vermont, Burlington, 3Department of Clinical Studies, New Bolton Center, School of Veterinary Medicine, University of Pennsylvania, Kennett Square, 4Environmental Microbial and Food Safety Laboratory, ANRI, USDA-ARS, Beltsville, MD, 5Department of Veterinary and Biomedical Science, Penn State University, University Park.

2:30 PM  184  Mycobacterium avium ssp. paratuberculosis promotes rapid IL-1β release and macrophage transepithelial migration.
E. Lamont*, 1  S. O’Grady2, W. Davis3, T. Eckstein3, and S. Sreevatsan1, 1University of Minnesota, 2Washington State University, 3Colorado State University.

2:45 PM  185  Real-time estimation of the lacto-presence of Mycobacterium avium subspecies paratuberculosis in milk and milk products originating from goat and cattle herds endemic for Johne’s disease.
S. V. Singh*, 1  T. Raghuvanshi1, B. Singh1, A. V. Singh2, P. K. Singh3, A. Kumar1, and A. Srivastava1,
1Central Institute for Research on Goats, Mathura, Uttar Pradesh, India, 2College of Veterinary Sciences, Mathura, Uttar Pradesh, India.

3:00 PM  186  Association of Bsa I polymorphism of MHC Class II DRB gene with Mycobacterium avium ssp. paratuberculosis bacteremia in Jamunapari breed of goats.

3:15 PM  187  Johne’s program—Impact on education and outreach activities.
K. E. Olson*, KEO Consulting, Schaumburg, IL.

3:30 PM  188  Mathematical modeling of Mycobacterium avium subspecies paratuberculosis infection transmission in dairy cattle: Current status and future directions.
Z. Lu*, 1  R. Mitchell1, R. Smith1, Y. Schukken1, Y. Gröhn1, K. Ahmadizadeh2, M. Teose1, 3, T. Damoulas1, and C. Gomes2,
1Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University, Ithaca, NY, 2Department of Computer Science, Cornell University, Ithaca, NY, 3Center for Applied Mathematics, Cornell University, Ithaca, NY.

3:45 PM  189  Vertical transmission or increased susceptibility to MAP?
E. Knupfer1, R. M. Mitchell*, 1  A. K. Pradhan1, 3, A. Kramer1, J. Dieguez4, R. H. Whitlock5, T. Fyock5, and Y. H. Schukken7,
1Utrecht University, Utrecht, the Netherlands, 2Cornell University, Ithaca, NY, 3University of Maryland, College Park, 4Universidade de Santiago de Compostela, Spain, 5University of Pennsylvania, New Bolton Center.

4:00 PM  190  MAP co-infection or evolution?
R. M. Mitchell*, 1  E. Knupfer1, A. K. Pradhan1, 3, A. Kramer1, J. Dieguez4, R. H. Whitlock5, T. Fyock5, and Y. H. Schukken7,
1Cornell University, Ithaca, NY, 2Utrecht University, Utrecht, the Netherlands, 3University of Maryland, College Park, 4Universidade de Santiago de Compostela, Spain, 5University of Pennsylvania, New Bolton Center.
Towards understanding endemicity of MAP infection in dairy herds.
R. M. Mitchell*, G. F. Medley¹, and Y. H. Schukken¹, ¹Cornell University, Ithaca, NY, ²Warwick University, Coventry, UK.

*Mycobacterium avium* subspecies *paratuberculosis*-infected macrophages have different protein and transcriptome profiles than control or uninfected culture mates.
E. Kabara* and P. Cousens, Michigan State University, East Lansing.

Effect of changes in management practices on the risk of Johne’s disease in Minnesota Johne’s disease demonstration dairy herds.
L. A. Espejo*, S. Godden, and S. J. Wells, University of Minnesota, Department of Veterinary Population Medicine, St. Paul.

**Cell Biology Symposium**

**Novel Technologies and Novel Insights**

Chair: Deb Hamernik, University of Nebraska, Lincoln
Sponsors: ADSA, ASAS, USDA-NIFA, EAAP

**2:00 PM**

Zinc-finger nucleases: Innovations in custom-designed modification of the swine genome.

**2:45 PM**

DNA Sequencing Technologies: New Methods & New Opportunities.
J. Rogers*, Director TGAC (The Genome Analysis Centre), Norwich, England, United Kingdom.

**3:30 PM**

Improved RNA quantitation and applications to animal science.
C. D. Haudenschild*, Illumina Inc., Hayward, CA.

**4:15 PM**

Informatics-driven biological research: Infectious diseases as an example.
B. Sobral*, Virginia Bioinformatics Institute at Virginia Tech, Blacksburg.

**Breeding and Genetics Symposium**

**Really Big Data: Processing and Analysis of Very Large Datasets**

Chair: Scott Newman, Genus Plc, and Catherine Ernst, Michigan State University
Sponsors: EAAP, Genus Plc

**2:00 PM**

Introduction - Why is this topic important and relevant?
S. Newman, Genus Plc, Hendersonville, TN.

**2:10 PM**

High performance computing and really big datasets: Overview and best practices.
F. Foerster*, Genus plc, Hendersonville, TN.

**2:50 PM**

Data structures and visualization.
J. B. Cole*, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.

**3:30 PM**

Computational challenges in genetic evaluation with really big datasets.
I. Aguilar**, and I. Misztal¹, ¹Instituto Nacional de Investigación Agropecuaria, INIA Las Brujas, Canelones, Uruguay, ²Animal & Dairy Science Department, University of Georgia, Athens.

**4:10 PM**

The implementation of analysis of large data.
M. Coffey*, Scottish Agricultural College, Penicuik, Midlothian, UK.
Dairy Foods Symposium
Technological Advancements in the Reduction of Pathogens and Spoilage Organisms in Milk
Chair: David McCoy, Dairy Research Institute
Sponsor: Dairy Research Institute/Innovation Center for U.S. Dairy

2:00 PM 209 Technological advancements in the reduction of pathogens and spoilage organisms in milk—Introduction and challenges.
D. R. McCoy*, Dairy Research Institute, Rosemont, IL.

2:10 PM 210 Reduction of cooked and oxidized flavors in UHT milk.
D. G. Peterson*, University of Minnesota, St. Paul.

2:40 PM 211 CHIEF/pulse electric field technology—A unique processing system.
R. Ruan*1,2, S. Deng, Y. Cheng1, X. Lin1,2, and L. Metzger1, 1University of Minnesota, St. Paul, 2Fuzhou University, Fuzhou, Fujian, China, 3Nanchang University, Nanchang, Jiangxi, China, 4South Dakota State University, Brookings.

3:10 PM 212 UV light inactivation of bacteria and spores in milk to enhance shelf-life.
J. S. Cullor*, P. V. Rossitto, J. Crook, and J. Parka, University of California at Davis, Tulare.

3:40 PM 213 Electrical resistive heating versus conventional UHT technologies.
D. J. McMahon*, B. Ganesan1, M. Qian1, and C. Brothersen1, 1Western Dairy Center, Utah State University, Logan, 2Food Science and Technology Department, Oregon State University, Corvallis.

4:10 PM 214 Continuous flow microwave heating for pasteurization and sterilization of dairy products.
J. Simunovic*, North Carolina State University, Raleigh.
### Forages and Pastures
**Alternative Forages and Improving Forage Quality and Characterization**  
**Chairs: Adebola Adesogan, University of Florida, and Steven Washburn, North Carolina State University**

<table>
<thead>
<tr>
<th>Time</th>
<th>Number</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>2:00 PM</td>
<td>215</td>
<td>Gain from selection for 16- and 96-h in vitro ndf digestibility of alfalfa stems.</td>
<td>H. G. Jung* and J. F. S. Lamb, USDA-Agricultural Research Service, St. Paul, MN.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>216</td>
<td>The nutritive value of mature corn silage from BMR, non-BMR and a 50:50 mix ensiled for varying lengths of time.</td>
<td>J. M. Lim*, M. C. Santos¹, J. P. Riguera², M. C. Der Bedosrais, K. E. Nestor³, and L. Kung¹, ¹University of Delaware, Newark, ²Mycogen Seeds, Indianapolis, IN.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>217</td>
<td>Concentrations and apparent digestibility of lignin and carbohydrate fractions in cell walls of whole-crop cereal silages.</td>
<td>J. Wallsten* and R. Hatfield, US Dairy Forage Research Center, Madison, WI.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>218</td>
<td>Construction of a recombinant <em>Pichia pastoris</em> integrating a two-copy xylanase gene from <em>Thermomonospora fusca</em> and characterization of its secreted protein.</td>
<td>Q. Wang¹, M. Z. Ma¹, X. Y. Weng¹, J. Y. Sun¹, and J. X. Liu¹, ¹MOE Key Laboratory of Molecular Animal Nutrition, College of Animal Sciences, Zhejiang University, Hangzhou, P.R. China, ²College of Life Science, Zhejiang University, Hangzhou, P.R. China.</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>222</td>
<td>Alternative approaches of replication for estimating in vitro starch disappearance.</td>
<td>D. R. Mertens*¹ and R. Ward², ¹Mertens Innovation &amp; Research LLC, Belleville, WI, ²Cumberland Valley Analytical Services Inc., Maugansville, MD.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>223</td>
<td>Microbial protein synthesis and partitioning of nutrients of native species from semiarid regions of North Mexico.</td>
<td>M. Guerrero-Cervantes¹–³, M. A. Cerrillo-Soto¹–³, A. S. Juárez-Reyes¹–³, H. Bernal-Barragán²–³, and R. G. Ramírez², ¹Universidad Júdrez del Estado de Durango, Durango, México, ²Universidad Autónoma de Nuevo León, Nuevo León, México, ³Red Internacional de Nutrición y Alimentación en Rumiantes.</td>
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<td>4:15 PM</td>
<td>224</td>
<td>Effects of species and season on chemical composition and ruminal crude protein and organic matter degradability of some multi-purpose tree species by West African Dwarf rams.</td>
<td>O. M. Arigbede*, U. Y. Anele¹, K.-H. Südekum¹, J. Hummel¹, A. O. Oni¹, J. A. Olanite¹, and A. O. Isah¹, ¹University of Agriculture, Abeokuta, Nigeria, ²University of Bonn, Bonn, Germany.</td>
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<tr>
<td>4:30 PM</td>
<td>225</td>
<td>Effect of land clearing and tillage methods on growth and yield of maize-cassava intercrop.</td>
<td>A. H. Ekeocha*, University of Ibadan, Ibadan, Oyo, Nigeria.</td>
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### Graduate Student Competition: ADSA Graduate Paper Competition - Production Division - MS Students
**Chair: Benjamin Corl, Virginia Tech**

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<th>Time</th>
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<tr>
<td>2:00 PM</td>
<td>226</td>
<td>Toll-like receptors expression in the gastro-intestinal tract of dairy calves.</td>
<td>N. Malmuthuge*¹, M. Li¹, P. Fries¹, P. Griebel¹, and L. L. Guan¹, ¹University of Alberta, Edmonton, Alberta, Canada, ²Vaccine and Infectious Disease Organization, University of Saskatchewan, Saskatchewan, Saskatoon, Canada.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>227</td>
<td>Soybean meal substitution by a microbial protein source in dairy cattle diets.</td>
<td>J. A. Sabbia*, K. F. Kalscheur¹, A. Garcia¹, A. Gehman¹, and J. M. Tricarico², ¹South Dakota State University, Brookings, ²Alltech Inc., Brookings, SD.</td>
</tr>
</tbody>
</table>
Effect of timing of initiation of Resynch and presynchronization with GnRH on fertility of resynchronized inseminations in lactating dairy cows.

Somatic cell count and management benchmarks in Minnesota dairy herds.

Effect of dietary trans fatty acids on selected inflammatory mediators in early lactating dairy cows.

Effects of physical preparation of diets and level of modified wet distillers grains with solubles on production and rumen measurements of lactating dairy cows.

Modifying the double-Ovsynch protocol to include human chorionic gonadotropin to synchronize estrus in lactating dairy cows.
J. A. Binversie*, K. E. Pfeiffer, and J. E. Larson, Mississippi State University, Mississippi State.

Fibroblast growth factor 9 influences steroidogenesis and gene expression in ovarian granulosa and theca cells of cattle.
N. B. Schreiber* and L. J. Spicer, Oklahoma State University, Stillwater.

Relationships among temperature, moisture, bacterial counts, and animal hygiene in compost bedded pack barns.

Objective assessment of pain in dairy cattle with clinical mastitis.
C. E. Fitzpatrick*1, N. Chapinal23, C. S. Petersson-Wolfe3, and K. E. Leslie1, 1University of Guelph, Guelph, Ontario, Canada, 2University of British Columbia, Vancouver, British Columbia, Canada, 3Virginia Polytechnic Institute and State University, Blacksburg.

Herd reproductive performance with an automated activity monitoring system versus a synchronized breeding program in 3 commercial dairy herds.
R. C. Neves*, K. E. Leslie, J. S. Walton, and S. J. LeBlanc, University of Guelph, Guelph, ON, Canada.

Effects of time and storage conditions on Johne's disease milk ELISA test results.
C. M. Innes*, D. F. Kelton, D. L. Pearl, and T. F. Duffield, University of Guelph, Guelph, Ontario, Canada.

The evaluation of bulk tank tests for the surveillance of Johne's disease.
C. M. Innes*, D. F. Kelton, D. L. Pearl, and T. F. Duffield, University of Guelph, Guelph, Ontario, Canada.

Graduate Student Symposium

Becoming Your Own Best Advocate: How to Expand and Communicate Your Skills and Qualifications
Chair: Heather M. White, Indiana University School of Medicine
Sponsors: ADSA, ASAS, Elanco Animal Health

Introduction.
H. M. White, Indiana University School of Medicine.

Preparing an effective CV for an academic position.
M. T. See*, North Carolina State University, Raleigh.

Grantsmanship—How to write a successful grant proposal.
T. Davis*, Baylor College of Medicine, Children's Nutrition Research Center, Houston, TX.

Break

ASAS National Graduate Student Update.
C. Jones, Iowa State University, Ames.
Maximizing your graduate experience.  
N. C. Whitley*, North Carolina A&T State University, Greensboro.

Becoming your own personal brand: How to market your talents and experiences for maximum results.  
C. Johnson*1 and C. Luhman1, 1Director Talent Acquisition & Diversity, Land O’ Lakes, Inc, Arden Hills, MN, 2Land O’ Lakes Purina Feed, LLC, Gray Summit, MO.

Growth and Development  
Growth and Development: Adipose and Body Composition in Ruminants  
Chairs: Tom Welsh, Texas A&M University, and Erin Connor, USDA-ARS, Beltsville  
Sponsor: BASF  
298-299

2:00 PM 243 Plane of dietary protein during late gestation in beef cows alters longissimus lumborum adipogenic gene expression in the offspring.  
S. Moisa*, D. Shike, D. B. Faulkner, and J. J. Loor, University of Illinois, Urbana.

2:15 PM 244 Oleic acid enhances G protein-coupled receptor 43 (GPR43) in cultured bovine intramuscular adipocytes.  
K. Y. Chung*, S. B. Smith1, and B. J. Johnson1, 1Texas Tech University, Lubbock, 2Texas A&M University, College Station.

2:30 PM 245 Effect of stearoyl-CoA desaturase 1 inhibitors on lipid metabolism and cellular proliferation in primary bovine adipocytes.  
A. K. G. Kadegowda*, T. A. Burns, S. L. Pratt, and S. K. Duckett, Clemson University, Clemson, SC.

2:45 PM 246 Palmitoleic acid (C16:1), not an elongation product, decreases lipogenesis and desaturation in bovine adipocyte cultures.  
T. A. Burns*, C. M. Klein, S. K. Duckett, S. L. Pratt, and T. C. Jenkins, Clemson University, Clemson, SC.

3:00 PM 247 Palmitic and stearic acids induce adipogenic gene expression in single- or co-cultures of bovine intramuscular preadipocyte and satellite cells.  
S. H. Choi*, K. Y. Chung1, B. J. Johnson1, K. H. Kim3, and S. B. Smith1, 1Texas A&M University, College Station, 2Texas Tech University, Lubbock, 3Institute of Animal Science, Suwon, Kyunggi, Korea.

3:15 PM 248 The effect of chromium propionate on bovine intramuscular and subcutaneous preadipocytes and muscle satellite cells.  
R. J. Tokach*, W. Rounds2, K. Y. Chung1, and B. J. Johnson1, 1Texas Tech University, Lubbock, 2Kemin Industries Inc., Des Moines, IA.

3:30 PM 249 Effect of rate of gain during grazing on gene expression of adipose tissue in growing beef cattle.  
P. A. Lancaster*, E. D. Sharman, G. W. Horn, C. R. Krehbiel, and U. DeSilva, Oklahoma Agricultural Experiment Station, Stillwater.

3:45 PM 250 Effect of ewe body condition during mid to late gestation on mammary growth and composition of female progeny.  

4:00 PM 251 Defining maturity of Nellore cattle based on growth and body composition.  
M. Marcondes*, L. Tedeschi2, S. V. Filho1,3, M. Gionbelli3, and L. F. Silva1, 1Universidade Federal de Viçosa/INCT-CA, Viçosa, MG, Brazil, 2Texas A&M University, College Station, 3INCT - Ciência Animal, Viçosa, MG, Brazil.

Nonruminant Nutrition  
Health/Management  
Chair: Ryan Dilger, University of Illinois, Urbana  
Sponsor: BASF  
383-385

2:00 PM 252 Population dynamics of leukocytes during immune activation of the chicken immune system by E. coli.  
V. Arias* and K. Klasing, University of California, Davis.
Effect of maternal seaweed extract supplementation on suckling piglet growth, humoral immunity, selected microflora, and immune response after an ex vivo lipopolysaccharide challenge.

Plant extracts for weaned pigs experimentally infected with porcine reproductive and respiratory syndrome virus. 1: Effect on growth performance and immune responses.
Y. Liu*, J. J. Lee¹, M. Song¹, T. M. Che⁴, J. A. Soares³, D. Bravo², W. G. Van Alstine¹, and J. E. Pettigrew¹, ¹University of Illinois, Urbana, ²Pancosma SA, Geneva, Switzerland, ³Purdue University, West Lafayette, IN.

Plant extracts for weaned pigs experimentally infected with porcine reproductive and respiratory syndrome virus. 2: Effect on peripheral blood immune cells and inflammatory mediators.
Y. Liu*, J. J. Lee¹, M. Song¹, T. M. Che⁴, J. A. Soares³, D. Bravo², W. G. Van Alstine¹, and J. E. Pettigrew¹, ¹University of Illinois, Urbana, ²Pancosma SA, Geneva, Switzerland, ³Purdue University, West Lafayette, IN.

Effects of spray-dried plasma on pregnancy rate and growth performance of mated female mice after transport as a model for stressed sows.
M. Song**, T. M. Che⁴, Y. Liu¹, J. A. Soares³, J. J. Lee¹, J. M. Campbell¹, J. Polo², J. C. O’Connor³, and J. E. Pettigrew¹, ¹University of Illinois, Urbana, ²Pancosma SA, Geneva, Switzerland, ³Purdue University, West Lafayette, IN.

Dietary phosphate supplementation to neonatal pigs affects satellite cell proliferation and progression through their myogenic lineage.

Flavour preferences conditioned by the effects of porcine digestible peptides (PDP) and soybean concentrate in post-weaned piglets.
J. Figueroa*¹, D. Solá-Oriol¹, S. L. Vinokurovas¹, E. Borda², and J. F. Pérez¹, ¹Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, ²Biobética, Barcelona, Spain.

Influence of length of storage on parameters used to measure the quality of soybean meal.
S. Sueiro¹, M. P. Serrano¹, M. González¹, M. Hermida¹, P. G. Rebollar¹, and G. G. Mateos*², ²Laboratorio de Mouriscade, Pontevedra, Spain, ¹Universidad Politécnica de Madrid, Madrid, Spain.

Effects of an abrupt change from mash to pellets and vice-versa on growth performance in finishing pigs.
C. B. Paulk*, J. D. Hancock¹, J. C. Ebert², and J. J. Olhde³, Kansas State University, Manhattan, Key Feeds, Clay Center, KS.

The effect of weaning group-housed calves over a different length of time fed by automatic feeding machine.

Physiology and Endocrinology
Estrous Cycle Manipulation - Beef
Chair: Robert Cushman, USDA MARC, Clay Center, NE
393
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<td>2:00 PM</td>
<td>273</td>
<td>Antimicrobial resistance and prevalence of virulence factor genes in fecal <em>Escherichia coli</em> of Holstein calves fed milk with and without antimicrobials.</td>
<td>R. V. V. Pereira*, T. M. A. Santos, M. L. Bicalho, S. Machado, R. C. Bicalho, and L. S. Caixeta, Department of Population Medicine and Diagnostic Science, College of Veterinary Medicine, Cornell University, Ithaca, NY.</td>
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<td>2:30 PM</td>
<td>275</td>
<td>Heritability of rectal temperature and genetic correlations with production and reproduction traits in dairy cattle.</td>
<td>S. Dikmen**, J. B. Cole, D. J. Null, and P. J. Hansen, Department of Animal Science, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey, Animal Improvement Programs Laboratory Agricultural Research Service, USDA, Beltsville, MD, Department of Animal Sciences, University of Florida, Gainesville.</td>
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<td>2:45 PM</td>
<td>276</td>
<td>Analysis of twinning, abortion and calf mortality in Irish Holstein and Friesian populations.</td>
<td>A. M. Doyle, R. D. Evans, and A. G. Fahey*, University College Dublin, Belfield, Dublin 4, Ireland, Irish Cattle Breeding Federation, Bandon, Co. Cork, Ireland.</td>
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<td>3:00 PM</td>
<td>277</td>
<td>Nation-wide evaluation of quality and composition of colostrum fed to dairy calves in the United States.</td>
<td>K. M. Morrill**, E. Conrad, A. Lago, J. D. Quigley, and H. D. Tyler, Iowa State University, Ames, APC Inc., Ankeny, IA.</td>
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<td>3:15 PM</td>
<td>278</td>
<td>Milk production and somatic cell counts: A cow level analysis.</td>
<td>K. J. Hand*, A. Godkin, and D. F. Kelton, Strategic Solutions Group, Puslinch, ON, Canada, Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, ON, Canada, University of Guelph, Guelph, ON, Canada.</td>
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**Production, Management and the Environment**

**Dairy Production II**

Chair: William Platter, Eli Lilly and Co.

386-387
Timing to reach the new level of pregnancy and milk yield after an improvement in reproductive management in dairy herds.
G. M. Schuenemann*, P. Federico2, A. De Vries3, and K. N. Galvão4, 1The Ohio State University, Columbus, 2Capital University, Columbus, 3University of Florida, Gainesville.

Economic comparison of reproductive programs for dairy herds using estrus detection (ED), Ovsynch, or a combination of both.
K. N. Galvao*, P. Federico3, A. De Vries, and G. M. Schuenemann4, 1University of Florida, Gainesville, 2The Ohio State University, Columbus, 3Capital University, Columbus, OH.

Ruminant Nutrition
Beef: Additives and Supplements
Chair: Stacey Gunter, USDA-ARS, Woodward, OK

The effect of Bovamine on feedlot performance of finishing cattle: A meta-analysis.
K. J. Hanford*, W. M. Kreikemeier, and D. R. Ware1, Department of Statistics - UNL, Lincoln, NE, 2Nutrition Physiology Co. LLC, Overland Park, KS.

Effects of Min-Ad on growth performance and carcass characteristics of finishing steers.
J. O. Wallace1, M. S. Brown1, D. D. Simms1, C. W. Coufal1, C. L. Maxwell1, J. C. Simroth-Rodriguez1, K. J. Kraich4, and S. L. Thomas4, 1West Texas A&M University, Canyon, 2Min-Ad Inc., Amarillo, TX.

Ractopamine hydrochloride reduces urinary nitrogen excretion of both implanted and non-implanted finishing beef cattle.
M. M. Kappen*, J. Ham, H. Han, and S. L. Archibeque, Colorado State University, Ft. Collins.

Impact of sorting prior to feeding zilpaterol hydrochloride on feedlot performance and carcass characteristics of yearling steers.
E. M. Hussey*, G. E. Erickson, W. A. Griffin, B. L. Nuttelman, T. J. Klopfenstein, and K. J. Vander Pol, 1University of Nebraska-Lincoln, Lincoln, 2Intervet/Schering-Plough Animal Health, De Soto, KS.

Effect of feeding Micro-Aid in diets containing wet distillers grains plus solubles to finishing cattle on performance and nutrient mass balance fed during the summer.
A. J. Doerr*, B. L. Nuttelman, G. E. Erickson, T. J. Klopfenstein, W. A. Griffin, and M. J. Rincker, 1University of Nebraska-Lincoln, 2DPI Global, Porterville, CA.

Rumen-protected arginine supplementation alters vascular hemodynamics in forage-fed steers.
A. M. Meyer*, C. B. Saevre, D. V. Dhuyvetter, R. E. Musser, and J. S. Caton, 1Center for Nutrition and Pregnancy, Department of Animal Science, North Dakota State University, Fargo, 2Ridley Block Operations, Mankato, MN, 3SODA Feed Ingredients LLC, Mankato, MN.

Effect of supplemental vitamin C on performance and antioxidant capacity of cattle fed varying concentrations of dietary sulfur.
D. J. Pogge* and S. L. Hansen, Iowa State University, Ames.

Use of MTB-100, provided through a mineral mix, to reduce toxicity when lactating beef cows graze endophyte-infected tall fescue.

In vitro mitigation of rumen hydrogen sulfide.
M. Ruiz-Moreno*, E. Seitz, and M. D. Stern, University of Minnesota, St. Paul.

Utilizing crop residues in winter feeding systems for beef cows.
A. D. Krause*1, and H. A. Lardner1,2, 1University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Western Beef Development Centre, Humboldt, Saskatchewan, Canada.

Effect of supplementing dried distillers grains to cattle consuming low-quality South Texas forage.
M. C. Briggs*, K. C. McCuiston, R. O. Dittmar, J. E. Zradicka, D. Kinkel, and T. A. Wickersham, 1Texas A&M University, Kingsville, Kingsville, 2Texas A&M University, College Station.

A mechanistic model of enteric methane emissions from ruminants.
R. A. Kohn* and S.-W. Kim, University of Maryland, College Park.
Impact of free-choice or restricted water intake during the pre-weaning and early post-weaning period on calf performance and health.
A. Manthey*, D. Ziegler1, H. Chester-Jones2, M. Raeth-Knight3, G. Golombeski1, and J. Linn1, 1University of Wisconsin-River Falls, River Falls, 2University of Minnesota, Southern Research and Outreach Center, Waseca, 3University of Minnesota, St. Paul.

Effects of free-access feeding of acidified milk replacer on the performance and general health of veal calves.
C. G. Todd*, T. J. DeVries2, K. E. Leslie3, J. M. Sargeant1, N. G. Anderson6, K. Shore3, and S. T. Millman5, 1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Department of Animal Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, 3Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, ON, Canada, 4Grober Nutrition, Cambridge, ON, Canada, 5Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames.

Effect of Celmanax SCP on calf performance when fed in the milk replacer and grower phase.
R. J. Dennis1 and S. Jalukar*, 1Kent Nutrition Group Product Development Center, Muscatine, IA, 2Varied Industries Corporation, Mason City, IA.

Effect of different forage sources on performance and feeding behavior of Holstein calves.
L. I. Castells2, A. Bach1,2, G. Araujo1, and M. Terré1, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain.

Effect of fatty acid intake by dairy calves on performance, health, and markers of immunity.
T. M. Hill*, M. J. VandeHaar2, L. M. Sordillo2, H. G. Bateman1, and R. L. Schlotterbeck1, 1Nurture Research Center, Proviimi North America, Lewislburg, OH, 2Department of Animal Science, Michigan State University, East Lansing, 3Department of Large Animal Clinical Sciences, Michigan State University, East Lansing.

Impact of feeding various fats and fatty acids on dairy calf performance, health, and markers of immunity.

Impact of three times versus twice a day milk replacer feeding on calf performance, likelihood to reach lactation and future milk production in a commercial dairy herd.
D. C. Sockett*, C. E. Sorenson1, N. K. Betzold1, J. T. Meronek3, and T. J. Earleywine4, 1Wisconsin Veterinary Diagnostic Laboratory, University of Wisconsin, Madison, 2United Cooperative, Sauk City, WI, 3University of Wisconsin-Madison, College of Agricultural & Life Sciences, Madison, 4Land O’Lakes Inc., Cottage Grove, WI.

Effects of a modified intensive milk replacer program fed two or four times daily on nursery calf performance.
A. D. Kmicikewycz*, D. N. da Silva, and N. B. Litherland, University of Minnesota, St. Paul.

Effect of different levels of alfalfa hay and sodium-propionate supplementation on performance and rumen development of dairy calves.
H. Beiranvand, M. Khorvash, G. R. Ghorbani*, A. Riasi, S. Kargar, and M. Mirzaei, Isfahan University of Technology, Isfahan, Iran.

Effect of pre-weaning feeding regimens on post-weaning growth performance of Sahiwal calves.
S. A. Bhatti*, A. Ali1, D. McGill2, M. Sarwar1, H. Nawaz1, M. Afzal3, M. S. Khan1, M. A. Amer4, R. D. Bush5, P. C. Wynn2, H. M. Warriach1, and H. Nawaz1, 1Institute of Animal Nutrition and Feed Technology, University of Agriculture, Faisalabad, Pakistan, 2E H Graham Centre (NSW Industry and Investment and Charles Sturt University), Wagga Wagga, Australia, 3Pakistan Agricultural Research Council, Islamabad, Pakistan, 4Livestock Production Research Institute, Bahadurnagar, Okara, Pakistan, 5Faculty of Veterinary Science, University of Sydney, Camden, Australia.
Animal Health II
Sponsor: Elanco Animal Health

T1 Development of kit for bovine myeloperoxidase using enzyme-linked immunosorbent assay.
J. Shi*, Y. Yang, Q. Li, and Y. Lv, Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.

T2 Development of kit for bovine haptoglobin using enzyme-linked immunosorbent assay.

T3 Transcriptional factors SP1 and SP3 influence differentially the regulating sequence of the bovine osteopontin gene depending on promoter haplotype.
N. Bissonnette* and C. Thibault, Agriculture and Agri-Food Canada, Dairy Cattle and Swine Research and Development Center, Sherbrooke, Quebec, Canada.

T4 Evaluation of interleukin 5 as a biomarker for parasite resistance in goats pasture exposed to Haemonchus contortus.
M. M. Corley* and A. A. Saeed, Virginia State University, Petersburg.

T5 Influence of latency to collect blood samples from beef calves on ex vivo innate immune responses.
L. E. Hulbert*, C. J. Cobb, D. L. Hanson, M. L. Galyean, and M. A. Ballou, Department of Animal and Food Sciences, Texas Tech University, Lubbock, Texas, and Department of Animal Sciences, University of California-Davis, Davis.

T6 Characterization of bovine leukocyte differentiation molecules in Egyptian cattle using flow cytometry.
G. S. Abdellrazeq*, M. M. El-Naggar, and W. C. Davis, Alexandria University, Edfina, Behara province, Egypt, and Washington State University, Pullman.

T7 Comparative evaluation of gene expression in bovine and caprine neutrophils.
M. Worku*, N. Mikiashvilli, and H. Ishamel, North Carolina A&T State University, Greensboro.

T8 Detection and expression of the gene encoding low density lipoprotein receptor-related proteins 6 (LRP6) in goat peripheral blood.

T9 Comparison of commercially available enzyme-linked immunosorbent assay with serum neutralization for measuring bovine viral diarrhea virus specific antibodies.
M. Gonda*, X. Fang, G. Perry, and C. Maltecca, South Dakota State University, Brookings, North Carolina State University, Raleigh.

K. Hatami and M. Zaghari*, Department of Animal Science, College of Agriculture and Natural Resource, University of Tehran, Karaj, Alborz, Iran.

T11 Gastrointestinal nematode infection in Nelore and crossbred cattle.
M. C. S. Oliveira*, M. C. D. Beraldo, E. Nakandakari, L. Boschini, M. M. Alencar, R. Giglioti, A. C. S. Chagas, B. Rubert, S. C. Bogini, and A. M. G. Ibello, Embrapa Pecuaria Sudeste, São Carlos, SP, Brazil, Unicep, São Carlos, SP, Brazil, Uniara, Araraquara, SP, Brazil, unesp, Jaboticabal, SP, Brazil, UFSCar, São Carlos, SP, Brasil.

T12 Concentrations of haptoglobin in bovine plasma determined by ELISA or a colorimetric method based on peroxidase activity.

T13 Feed and water restriction elicits an acute-phase protein response in beef cattle.
Natural infestation by external parasites in beef cattle in southern Brazil.
M. C. S. Oliveira*, E. Nakadakari*, M. C. D. Beraldo*, M. M. Alencar*, A. C. S. Chagas, L. Boschini, R. Giglioti, and A. M. G. Ibelli, *Embrapa Pecuaria Sudeste, São Carlos, SP, Brazil, 1Uniara, Araraquara, SP, Brazil, 2Unicep, São Carlos, SP, Brazil, 3Unesp, Jaboticabal, SP, Brazil, 4UFSCar, São Carlos, SP, Brasil.

Cinnamaldehyde enhances in vitro parameters of immunity and reduces severity of in vivo infection against avian coccidiosis.

Comparison of different levels of vitamin premix on chicken meat quality in floor and battery cage broiler raising.
M. A. Shahrasbi, H. Moravej, and M. Shivazad*, Department of Animal Science, Faculty of Agriculture and Natural Resources, Tehran University.

Effects of feeding OmniGen-AF to rats on gastrointestinal gene expression: Microarray analysis.
B. R. Ou*, Y. Q. Wang, and N. E. Forsberg**, OmniGen Research, Corvallis, OR, 2Tunghai University, Taichung, Taiwan, ROC.

Inhibition of inflammatory processes in Caco-2 intestinal epithelial cells by an ethanolic extract of a polyphenol-rich grape seed meal.

**Beef Species**

**Beef Cattle Production**

Association of slaughter and dressing traits with ultrasound and computed tomography data in cattle.

Effect of arrival health risk status of steer calves on feedlot performance and health during a 61-d preconditioning program.

Effect of residual feed intake on blood urea nitrogen concentration in growing heifers from an Angus-Brahman multi-breed herd.

Post-weaning feed efficiency of tropically adapted purebred and crossbred calves when fed in either winter or spring.
S. W. Coleman*, C. C. Chase*, W. A. Phillips*, and D. G. Riley*, 1USDA ARS Subtropical Agricultural Research Station, Brooksville, FL, 2USDA, ARS, Grazinglands Research Laboratory, El Reno, OK.

Finishing steers and bulls with high-vitamin E diets: Effect on circulating immune cells and creatine kinase after a mild stress.
C. Reyes, C. Fuentes, and R. E. Larraín*, Pontificia Universidad Catolica de Chile, Santiago, Chile.

**Breeding and Genetics**

**Molecular Genetics**

Quantitative genetics and differential performance and gene expression of half-sib families of hybrid striped bass in communal ponds.
S. A. Fuller*, B. H. Beck, M. McEntire, and D. Freeman, USDA ARS Stuttgart National Aquaculture Research Center, Stuttgart, AR.

Effects of transgenic myostatin depression on reproductive parameters and placental superoxide dismutases in mice.
S. Yarlagadda, C. N. Lee*, Y. S. Kim, J. Yang, and W. Y. Ho, University of Hawaii-Manoa, Honolulu.
Study of polymorphism at CSD gene in Apis mellifera meda.
S. Karimi*, A. Nejati Javaremi1, S. R. Miraei Ashtiani2, and H. Alizadeh3, 1University of Tehran, University College of Agriculture and Natural Resource, Department of Animal Science, Tehran, Karaj, Iran, 2University of Tehran, University College of Agriculture and Natural Resource, Agronomy & Plant Breeding Department, Tehran, Karaj, Iran.

Growth-related differential gene expression in the longissimus thoracis muscle of Iberian × Landrace back-crossed pigs.
J. Casellas1,2,3, J. L. Noguera2, R. N. Pena1,3, J. M. Folch1, M. Muñoz1, and N. Ibáñez-Esbrache1, 1Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Genètica i Millora Animal, IRTA-Lleida, Lleida, Spain, 3Departament de Producció Animal, Universitat de Lleida, Lleida, Spain, 4Departamento de Mejora Genética Animal, SGIT-INIA, Madrid, Spain.

Path analysis of candidate genes for intramuscular fat in pigs.
N. V. L. Serô1,2, J. Braccini Neto1, A. M. F. Ribeiro1, P. V. Silva1, S. L. Rodríguez-Zas1, and S. E. F. Guimarães2, 1University of Illinois at Urbana-Champaign, Urbana, 2Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil, 3Universidade Federal de Viçosa, Viçosa, MG, Brazil.

Evaluating statistical models to assess differential gene expression in PRRSV infected pigs using plasmode datasets.
M. E. Arceo1, C. W. Ernst1, M. Wysocki1, J. K. Lunney1, and J. P. Steibel1, 1Department of Animal Science, Michigan State University, East Lansing, 2Lehrstuhl für Tierzucht, Technische Universität München, Munich, Germany, 3Animal Parasitic Diseases Laboratory, ARS, USDA, BARC, Beltsville, MD.

Identification of a JY-1 gene variant in Nellore cattle.
G. M. F. de Camargo1, A. C. de Freitas1, A. C. Andrade1, F. M. M. Gil2, D. F. Cardoso1, P. D. S. Fonseca1, F. R. P. Souza1, M. Cervini1, F. Baldi1, L. G. de Albuquerque1, L. C. A. Regitano1, and H. Tonhati1, 1São Paulo State University, Jaboticabal, Sao Paulo, Brazil, 2Brazillian Agricultural Research Corporation - Southeast Cattle Center, Sao Carlos, Sao Paulo, Brazil.

Structural changes at bovine IgE as related to variation at the DNA level.
I. Rivera, M. Pagan*, E. Jimenez, and G. Ortiz, Department of Animal Industry, University of Puerto Rico at Mayaguez, Mayaguez, PR.

Association between SNPs in candidate genes and residual feed intake in Angus cattle.

Identification of a JY-1 gene variant in Nellore cattle.
G. M. F. de Camargo1, A. C. de Freitas1, A. C. Andrade1, F. M. M. Gil2, D. F. Cardoso1, P. D. S. Fonseca1, F. R. P. Souza1, M. Cervini1, F. Baldi1, L. G. de Albuquerque1, L. C. A. Regitano1, and H. Tonhati1, 1São Paulo State University, Jaboticabal, Sao Paulo, Brazil, 2Brazillian Agricultural Research Corporation - Southeast Cattle Center, Sao Carlos, Sao Paulo, Brazil.

Novel associations between a SNP in the bovine DDEF1 gene and production traits in Nellore breed.
P. C. Tizioto*, S. L. Meirelles1, G. B. Veneroni1, M. M. de Souza1, F. Siqueira1, A. do Nascimento Rosa2, L. O. Campos da Silva2, R. de Almeida Torres2, S. R. Medeiros2, R. R. Tullio2, M. M. de Alencar2, G. Feijó2, and L. C. de Almeida Regitano2, 1Federal University of São Carlos, São Carlos, São Paulo, Brazil, 2Embrapa Beef Cattle National Center, Campo Grande, Mato Grosso do Sul, Brazil, 3Embrapa Southern Cattle Research Center, São Carlos, São Paulo, Brazil.

CAPN4751 and UOGCAST effects on feed efficiency, carcass traits and feedlot performance in Nellore (Bos indicus) cattle.
R. C. Gomes*, 1M. E. Carvalho2, M. H. A. Santana3, S. L. Silva3, P. R. Leme3, P. Rossi3, and J. B. S. Ferraz3, 1Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo (FZEA/USP), Pirassununga, SP, Brazil, 2FACENS, Sorocaba, SP, Brazil, 3Departamento de Zootecnia, Universidade Federal do Paraná (UFPR), Curitiba, PR, Brazil.

Bialellic expression studies of CAST gene in bovine muscle.
M. M. de Souza1, S. C. M. Niciria2, A. M. G. Ibelli1, S. L. Meirelles1, M. I. Rocha1, P. C. Tizioto1, G. Gasparini3, M. E. Carvalho4, G. B. Veneroni5, F. A. Bressani5, P. S. N. de Oliveira5, F. Siqueira1, L. L. Coutinho6, and L. C. de Almeida Regitano7, 1Federal University of São Carlos, São Carlos, São Paulo, Brazil, 2Embrapa Beef Cattle National Center, São Carlos, São Paulo, Brazil, 3Embrapa Beef Cattle National Center, Campo Grande, Mato Grosso do Sul, Brazil.

The polymorphism Msp I in intron 3 of the growth hormone gene in Nellore cattle (Bos taurus indicus).
D. F. Cardoso1, G. M. F. de Camargo1, P. D. S. Fonseca1, F. M. M. Gil2, M. G. Chiquitelli3, F. R. P. Souza1, L. G. de Albuquerque1, M. E. Z. Mercadante1, and H. Tonhati1, 1Department of Animal Sciences, Sao Paulo State University, Jaboticabal, SP, Brazil, 2Animal Science Experimental Station, Sertãozinho, SP, Brazil.

Polymorphisms of the IGF1 and MSTN genes in Nellore beef cattle (Bos indicus) and in their crosses with Bos taurus.
R. A. Curi1, M. R. S. Fortes2, D. M. Vankani2, J. A. V. Silva1, H. N. Oliveira1, M. D. S. Mota3, and A. C. D. Silveira1, 1Faculdade de Medicina Veterinária e Zootecnia, Unesp, Botucatu, São Paulo, Brazil, 2School of Veterinary Science, University of Queensland, St. Lucia, Queensland, Australia, 3Faculdade de Ciências Agrárias e Veterinárias, Unesp, Jaboticabal, São Paulo, Brazil.

Characterization of polymorphism in the ORL1 gene in Nellore cattle (Bos taurus indicus) by PCR-RFLP.
P. D. da Silva Fonseca1, F. R. P. de Souza2, G. M. F. de Camargo1, F. M. Gil2, D. F. Cardoso1, M. G. Chiquitelli3, L. G. Albuquerque1, M. E. Z. Mercadante1, and H. Tonhati1, 1São Paulo State University, São Paulo State University, Jaboticabal, Brazil, 2Animal Science Experimental Station, Animal Science Experimental Station, Sertãozinho, Brazil.

Analysis of MUCL alleles in Nellore cattle using single-allele and multi-allele models.
F. R. P. Souza2, S. Sartore2, S. Maione2, D. soglia3, V. Spalenza4, G. M. F. de Camargo1, P. Sacchi2, R. Rasero2, and M. E. Z. Mercadante1, 1Sao Paulo State University, Jaboticabal, SP, Brazil, 2University of Turin, Grugliasco, TO, Italy, 3Instituto de Zootecnia, Sertãozinho, SP, Brazil.
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V. A. Ferreira Junior*, G. M. F. de Camargo*, A. L. F. Lima, F. M. M. Gil, and H. Tonhati, São Paulo State University, Jaboticabal, SP, Brazil, Santa Catarina Federal University, Florianópolis, SC, Brazil.

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J. Bezdicek*, and J. Riha, Agriresearch Rapotin, Ltd., Rapotin, Czech Republic, Research Institute for Cattle Breeding, Ltd., Rapotin, Czech Republic.

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H. Mohammadi*, M. Moradi Shahrebabak, and M. Sadeghi, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

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S. M. Kazemi*, S. Gharaveysi, H. Emrani, and A. Zsolnai, Department of Animal Science, Islamic Azad University, Qaemshahr Branch, Qaemshahr, Mazandaran, Iran, Department of Animal Biotechnology, Animal Science Research Institute of Iran, Karaj, Alborz, Iran, Department of Animal Sciences, The Ohio State University, Columbus.

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S. Niknafs*, A. Fatemi, M. Mehрабانی Yeganeh, and A. Nejati Javaremi, Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.

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S. Niknafs*, A. Fatemi, M. Mehрабانی Yeganeh, and A. Nejati Javaremi, Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.

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S. Niknafs*, A. Nejati Javaremi, M. Sadeghi, and A. Fatemi, Agricultural Faculty, University of Tehran, Karaj, Alborz, Iran.
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Sponsors: Hill’s Science Diet, Nestlé Purina, Proctor and Gamble

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Effect of feeding a combination of galacto-oligosaccharides and a *Bifidobacterium* sp. strain on feline intestinal ecosystem.
G. Biagi*, I. Cipollini, M. Grandi, C. Pinna, A. Pompei, M. Zini, and G. Zaghini, 1Department of Veterinary Medical Sciences, University of Bologna, Ozzano Emilia, Italy, 2Department of Pharmaceutical Sciences, University of Bologna, Bologna, Italy, 3Department of Biochemistry, University of Bologna, Bologna, Italy.

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Dietary fiber viscosity may affect insulin and GLP-1 secretion, but does not appear to contribute to the “second meal effect” in healthy adult dogs.
P. Deng*, A. Wolff, A. N. Beloshapka, B. M. Vester Boler, and K. S. Swanson, 1Department of Animal Sciences, University of Illinois, Urbana, 2Division of Nutritional Sciences, University of Illinois, Urbana.

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Comparison of fecal microbial communities of healthy adult dogs fed raw meat-based or extruded diets using 454 pyrosequencing.
A. N. Beloshapka, S. E. Dowd, L. Duclos, and K. S. Swanson, 1Department of Animal Sciences, University of Illinois, Urbana, 2Division of Nutritional Sciences, University of Illinois, Urbana, 3Research and Testing Laboratory, Lubbock, TX, 4Nature’s Variety Inc., Lincoln, NE.

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Processing techniques to maintain low glycemic index of peas.
J. Fouhse, 1J. Adolphe, L. Weber, and M. Drew, 1University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Western College of Veterinary Medicine, Saskatoon, Saskatchewan, Canada.

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Acute effects of carbohydrates in dogs.
J. L. Adolphe*, J. M. Fouhse, M. D. Drew, and L. P. Weber, 1Department of Veterinary Biomedical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

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Effects of protease enzyme on diets for growing mink (*Mustela vison*).
E. S. Dierenfeld*, E. Keith, R. Johnson, C. Falco, B. Roeder, and N. Odetallah, 1Novus International, Inc., St. Charles, MO, 2FBAC, Sandy, UT, 3Brigham Young University, Provo, UT.

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Influence of feeding a fish oil containing diet to mature overweight dogs: Effects on lipid and protein metabolism, postprandial glycemia, and body weight.

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Effect of dietary starch level on protein metabolism in domestic cats.
T. J. Wester, K. Weidgraaf, M. Hekman, N. J. Cave, and M. H. Tavendale, 1Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand, 2Institute of Veterinary, Animal and Biomedical Sciences, Palmerston North, New Zealand, 3AgResearch Ltd., Palmerston North, New Zealand.

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Effect of glucose infusion and dietary protein level on urea production in the domestic cat.
T. J. Wester, K. Weidgraaf, M. Hekman, N. J. Cave, and M. H. Tavendale, 1Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand, 2Institute of Veterinary, Animal and Biomedical Sciences, Palmerston North, New Zealand, 3AgResearch Ltd., Palmerston North, New Zealand.
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S. Pietrosemoli*1,1, J. C. Guevara2, and J. T. Green3, 1Animal Science Department, North Carolina State University, Raleigh, 2Alternative Swine Research and Extension Project, Raleigh, NC, 3Crop Science Department, North Carolina State University, Raleigh.

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G. Pirlo*, Consiglio per la ricerca e sperimentazione in agricoltura, Centro di ricerca per le produzioni foraggere e lattiero-casearie (CRA-FLC), Cremona, Italy.

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M. da Silva Pinto, A. F. Carvalho*, J. Y. Suda, A. C. P. Silveira, and A. C. dos Santos Pires, Food Science Department, Federal University of Viçosa, Viçosa, MG, Brazil.

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A. F. Cunha1, A. D. Lage2, M. M. P. Araújo1, C. F. Abreu3, A. R. Tassinari3, M. R. Souza1, C. F. A. M. Penna1, L. M. Fonseca1, M. O. Leite1, and M. M. O. P. Cerqueira1, 1Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, 23M do Brazil, Sumaré, São Paulo, Brazil.

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S. Hekmat1,2, and G. Reid3, 1Brescia University College, London, Ontario, Canada, 3Canadian Research and Development Center for Probiotics, London, Ontario, Canada.

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L. Du1, G. Somkuti2, and J. Renye2, 1Nanjing University of Finance and Economics, Nanjing, China, 2Eastern Regional Research Center/USDA, Wyndmoor, PA.

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R. Niewohner*, S. Anand, and R. Nauth, South Dakota State University, Brookings.

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D. Singh* and S. K. Anand, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

T83 Effect of low sonication intensities on the growth of Streptococcus salivarius ssp. thermophilus ST-M5 subjected to different temperatures.
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T84 Low sonication intensity influences on the protease activity of Lactobacillus delbrueckii ssp. bulgaricus LB-12 at different temperatures.
M. Moncada* and K. Aryana, School of Animal Sciences, Louisiana State University Agricultural Center, Baton Rouge.
Influence of low sonication intensities at different temperatures on the bile tolerance of *Streptococcus salivarius* spp. *thermophilus* ST-M5.
M. Moncada* and K. Aryana, School of Animal Sciences, Louisiana State University Agricultural Center, Baton Rouge.

Screening of mild pulsed electric field parameters for enhancing acid tolerance of *Streptococcus salivarius* spp. *thermophilus* ST-M5.
N. Najim and K. Aryana*, School of Animal Sciences, Louisiana State University Agricultural Center, Baton Rouge.

Mild pulsed electric field conditions identified for improving growth, protease activity and acid tolerance of *Lactobacillus delbrueckii* ssp. *bulgaricus* LB-12 and *Lactobacillus acidophilus* LA-K.
N. Najim and K. Aryana*, School of Animal Sciences, Louisiana State University Agricultural Center, Baton Rouge.

Impact of mild pulsed electric field conditions on improving bile tolerance, protease activity and growth of *Streptococcus salivarius* spp. *thermophilus* ST-M5.
N. Najim and K. Aryana*, School of Animal Sciences, Louisiana State University Agricultural Center, Baton Rouge.

Resistance of *E. coli* and *L. rhamnosus* to acid stress is affected by the presence of pepsin-treated caseinomacropeptide.
G. Robitaille, C. Lapointe, D. Leclerc, and M. Britten*, Food Research and Development Centre, Agriculture and Agri-Food Canada, St Hyacinthe, Quebec, Canada.

Effect of microencapsulation on survival of *Lactobacillus acidophilus* La5 during simulated gastrointestinal conditions of stirred yoghurt after refrigerated storage.

Viability of free and microencapsulated *Lactobacillus acidophilus* La5 in stirred yoghurt during refrigerated storage.

In vitro property evaluation of *Propionibacterium* cultures for probiotic applications.

Can high quality raw milk have enough microbial load to show a reduction of organisms in a pasteurization adjunct?
J. A. Zonneveld*, A. M. Lammert, and R. Jimenez-Flores, California Polytechnic University, San Luis Obispo.

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Effects of prolactin on the expression of genes related to milk protein synthesis in bovine mammary epithelial cells.

The best ratio between lysine and methionine on milk protein synthesis in bovine mammary epithelial cells.

Development of safe glue sticks containing whey protein.
G. Wang and M. Guo*, The University of Vermont, Burlington.

Isolation and characterization of prosaposin from milk from four goat breeds.

### Food Safety

C. Mori*, E. A. Garcia, C. Ducatti, J. C. Denadai, and K. Pelicia, **São Paulo State University, Botucatu, São Paulo, Brazil,** São Paulo State University, Registro, São Paulo, Brazil.

Use of stable isotopes of carbon-13 and nitrogen-15 in quail eggs.
C. Mori*, C. Ducatti, C. C. Pizzolante, S. K. Kakimoto, and J. C. Denadai, **São Paulo State University, Botucatu, São Paulo, Brazil,** São Paulo Agency of Agribusiness Technology, Brotas, São Paulo, Brazil.
Evaluation of a screening test for detecting antimicrobial residues in milk by visual reading and by reader equipment.


Antagonistic intestinal microflora produces antimicrobial substance inhibitory to Pseudomonas species and other spoilage organisms.

B. Hatew*1,2, T. Delessa1,2, V. Zakin1, and N. Gollop1, 1Agricultural Research Organization of Israel, Bet-Degan, Israel, 2Wageningen University, Wageningen, the Netherlands, 3Swiss Federal Institute of Technology, Zurich, Switzerland.

Microencapsulated feed additives to reduce Salmonella shedding.

E. Grilli*, R. Bari2, A. Piva2, B. Tugnoli2, and T. R. Callaway2, 1University of Bologna, Ozzano Emilia, BO, Italy, 2Food and Feed Safety Research Unit, ARS/USDA, College Station, TX.

Improving voluntary oral interaction of dairy cattle with manila ropes to facilitate E. coli O157:H7 monitoring on dairies.

A. F. Pedroso*1,2, O. C. M. Queiroz1, and A. T. Adesogan1, 1Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 2Brazilian Agricultural Research Corporation, Embrapa Cattle-Southeast, 13560-970, São Carlos, SP, Brazil.

Effects of predipping practices on milk iodine concentrations.

S. I. Borucki-Castro2, R. Berthiaume3, A. Robichaud3, and P. Lacasse*1, 1AFAC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, 2Food Directorate, Health Canada, Longueuil, QC, Canada.

Effects of natural beta-acids extracted from hops on Salmonella and Campylobacter pure culture.

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Staphylococcus aureus virulence and metabolism are dramatically affected by Lactococcus lactis in cheese matrix.

M. Cretenet1,2, S. Nouaille4, J. Thouin1,2, L. Rault1,2, L. Stenz2, P. François3, J. A. Hennekinne4, M. B. Maillard1,2, J. Fauquant1,2, P. Loubière4, S. Lortal1,2, Y. Le Loir1,2, and S. Even1,2, 1INRA, STLO, Rennes, France, 2Agrocampus Ouest, STLO, Rennes, France, 3Université de Toulouse; INSA, Toulouse, France, 4INRA, UMR792, Toulouse, France, 5University of Geneva Hospitals, Geneva–Switzerland, 6ANSES, LERQAP, Maisons-Alfort, France.

Characterization of risk of food pathogens in Minas Frescal cheese.

R. Freitas1, A. F. Carvalho*3, L. A. Nero1, G. G. Netto3, and M. A. V. Brito3, 1Federal University of Viçosa, Viçosa, MG, Brazil, 2EMBRAPA CNPGL, Juiz de Fora, MG, Brazil.

Inhibition of Listeria monocytogenes growth in cheddar cheese by nanofiltration retentate of tryptic extract of whey proteins.

V. Demers-Mathieu1,2, G. Robitaille1, D. St-Gelais1, S. Gauthier1, and M. Britten*1, 1Food Research and Development Centre, Agriculture and Agri-Food Canada, St Hyacinthe, QC, Canada, 2Centre de recherche STELA & INAF, Département de Sciences des Aliments et de Nutrition, Québec, QC, Canada.

Investigating contamination of bulk tank milk with Listeria monocytogenes on a dairy farm.


Prediction the growth of Staphylococcus aureus in raw milk using modified Gompertz and Logistic models.

B. Li1,2, C. Man1, M. Guo*3, Y. Shan1, F. Zhao2, S. Yang1, Y. Jiang1, Y. Lang2, and Y. Jiang1,2, 1National Dairy Engineering and Technology Research Center, Northeast Agricultural University, Harbin, Heilongjiang, China, 2Department of Food Science, Northeast Agricultural University, Harbin, Heilongjiang, China, 3Department of Nutrition and Food Sciences, The University of Vermont, Burlington.


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Simultaneous analysis of anions Cl−, NO3−, SO42−, NO2−, and PO43− in milk with ion chromatography.

D. Liu and Z. Chen*, Analysis and Testing Center, Shandong University of Technology, Zibo, Shandong Province, China.

Evaluation of a screening test for detecting antimicrobial residues in milk by visual reading and by reader equipment.

M. M. P. Araújo, M. A. Guerra, A. D. Lage, A. F. Cunha, L. M. Fonseca, M. O. Leite, M. R. Souza, C. F. A. M. Penna, and M. M. O. P. Cerqueira*, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.
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A. Corral-Luna*, D. Domínguez-Díaz2, M. R. Murphy2, F. A. Rodríguez-Almeida1, C. Arzola1, G. Villalobos2, and J. A. Ortega-Gutierrez1, 1Facultad de Zootecnia y Ecología, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México, 2Department of Animal Science, University of Illinois, Urbana-Champaign.

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M. de J. Marichal*, R. Crespi, M. de los A. Bruni, S. Furtado, and G. Arias, Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay.

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R. T. Ward*, S. Weaver1, and R. A. Patton1, 1Cumberland Valley Analytical Services, Maugansville, MD, 2Nittany Dairy Nutrition Inc., Mifflinburg, PA.

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Relationships of fermentation characteristics in corn forage.
R. Ward* and D. R. Mertens2, 1Cumberland Valley Analytical Services Inc, Maugansville, MD, 2Mertens Innovation & Research LLC, Belleville, WI.

T123
Factors affecting estimation of spoilage indices in silage. 1: Effects of culture media, temperature, and duration.
J. Leite1,2, K. G. Arriola1, N. Cavalcanti1,2, O. C. M. Queiroz1, E. N. Muniz1,1, and A. T. Adesogun1, 1Department of Animal Sciences, IFAS, University of Florida, Gainesville, 2Universidade Federal Rural de Pernambuco, Recife, PE, Brazil, 1Embrapa Tabuleiros Costeiros, Aracaju, SE, Brazil.

T124
Relationship between residual feed intake, performance, and carcass parameters of pasture finished cattle.
J. P. S. Neel*, E. E. D. Felton2, S. K. Duckett3, and W. S. Swecker4, 1USDA-ARS-AFSRC, Beaver, WV, 2West Virginia University, Morgantown, 3Clemson University, Clemson, SC, 4Virginia Tech University, Blacksburg.

Forages and Pastures
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T125
Herbage accumulation in *Brachiaria humidicola* subjected to different frequencies and intensities of defoliation.
H. H. Vilela1, D. Nascimento Junior*, A. L. Santos1, D. L. R. Henriques5, B. D. Faria1, C. A. S. Freitas1, and A. F. Sbrissia2, 1Universidade Federal de Vícosa, Vícosa, MG, Brazil, 2Universidade do Estado de Santa Catarina, Lages, SC, Brazil.

T126
Sward bulk density in *Brachiaria humidicola* subjected to frequencies and intensities of defoliation.
D. Nascimento Junior*, H. H. Vilela1, A. L. Santos1, B. D. Faria1, B. M. L. Sousa1, G. O. Rocha1, and A. F. Sbrissia2, 1Universidade Federal de Vícosa, Vícosa, MG, Brazil, 2Universidade do Estado de Santa Catarina, Lages, SC, Brazil.

T127
Herbage accumulation dynamics in pastures of *Pennisetum purpureum* subjected to grazing severities.
D. Nascimento Junior*, B. M. L. Sousa1, H. C. F. Monteiro1, H. H. Vilela1, M. C. T. Silveira1, A. F. Sbrissia2, and S. C. Da Silva3, 1Universidade Federal de Vícosa, Vícosa, MG, Brazil, 2Universidade do Estado de Santa Catarina, Lages, SC, Brazil, 3Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

T128
Pre-and post-grazing targets for mulato grass subjected to rotational stocking management.
M. C. T. Silveira1, D. Nascimento Junior*, S. C. Da Silva2, K. S. Pena1, C. S. Rodrigues1, S. J. Souza1, V. A. Limao2, L. M. Barbero2, and B. M. L. Sousa1, 1Universidade Federal de Vícosa, Vícosa, MG, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

T129
Balance between the emergence and mortality of tiller in *Brachiaria decumbens* pastures under continuous stocking.
M. E. R. Santos1, V. M. Gomes2, D. M. Fonseca2, D. Nascimento Junior*, and A. F. Sbrissia2, 1Universidade Federal de Uberlandia, Uberlandia, MG, Brazil, 2Universidade Federal de Vícosa, Vícosa, MG, Brazil, 3Universidade do Estado de Santa Catarina, Lages, SC, Brazil.
T130  Forage utilization efficiency estimated in *Pennisetum purpureum* submitted to grazing severities.
D. Nascimento Junior*, B. M. L. Sousa1, H. C. F. Monteiro1, F. C. Gomes1, C. Z. Assis1, H. H. Villela1, A. F. Sbrisssia2, A. L. Santos1, and M. C. T. Silveira1, 1Universidade Federal de Vicsosa, Vicsosa, MG, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

T131  Grazing losses and grazing efficiency on mulato grass subjected to strategies of rotational stocking management.
M. C. T. Silveira1, D. Nascimento Junior*, S. C. Da Silva1, C. S. Rodrigues1, V. A. Limao2, L. M. Barbero1, S. J. Sousa2, K. S. Pena1, and B. M. L. Sousa1, 1Universidade Federal de Vicsosa, Vicsosa, MG, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

T132  Relationship between canopy light interception and pre-grazing sward height in *Brachiaria humidicola* pastures subjected to frequencies and intensities of defoliation.
H. H. Villela1, D. Nascimento Junior*, A. L. Santos1, B. M. L. Sousa1, G. O. Rocha1, C. A. S. Feitas1, and A. F. Sbrisssia2, 1Universidade Federal de Vicsosa, Vicsosa, MG, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

T133  Tiller population density in *Brachiaria humidicola* pastures subjected to frequencies and intensities of defoliation.
H. H. Villela1, D. Nascimento Junior*, A. L. Santos1, B. M. L. Sousa1, G. O. Rocha1, C. A. S. Feitas1, and A. F. Sbrisssia2, 1Universidade Federal de Vicsosa, Vicsosa, MG, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz, Piracicaba, SP, Brazil.

T134  Forage production and leaf area index of tropical grass cultivars under irrigation in the cerrado region of Minas Gerais, Brazil.
E. A. da Silva1, W. J. da Silva1, J. R. M. Ruas1, D. S. Queiroz1, M. C. M. Viana1, J. M. V. Paes1, and L. C. da Silva Júnior1, 1EPAMIG, Uberaba, Minas Gerais, Brazil, 2EPAMIG, Janaúba, Minas Gerais, Brazil, 3EPAMIG, Viçosa, Minas Gerais, Brazil, 4EPAMIG, Prudente de Morais, Minas Gerais, Brazil, 5CNPq, Brasilia, Federal District, Brazil, 6FAPEMIG, Belo Horizonte, Minas Gerais, Brazil, 7FAZU, Uberaba, Minas Gerais, Brazil, 8FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

T135  Morphogenetic characteristics of tropical grass cultivars under irrigation in the cerrado region of Minas Gerais, Brazil.
E. A. da Silva1, W. J. da Silva1, R. M. Ruas2, M. C. M. Viana3, D. S. Queiroz1, J. M. V. Paes1, and L. C. da Silva Júnior1, 1EPAMIG, Uberaba, Minas Gerais, Brazil, 2EPAMIG, Janaúba, Minas Gerais, Brazil, 3EPAMIG, Viçosa, Minas Gerais, Brazil, 4EPAMIG, Prudente de Morais, Minas Gerais, Brazil, 5CNPq, Brasilia, Federal District, Brazil, 6FAPEMIG, Belo Horizonte, Minas Gerais, Brazil, 7FAZU, Uberaba, Minas Gerais, Brazil, 8FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

T136  Effect of patch-burning mixed-grass prairie rangeland on cattle performance.
S. A. Gunter1, T. L. Springer1, E. T. Thacker1, and R. L. Gillen1, 1USDA-ARS, Southern Plains Range Research Station, Woodward, OK, 2Western Kansas Agricultural Research Centers, Kansas State University, Hays.

T137  Estimating pasture growth rates using local weather data.
E. B. Rayburn and W. L. Shockey*, West Virginia University, Morgantown.

T138  Impact of feeding strategies on milk production and income over feed cost: A case study of organic, grazing and conventional Wisconsin dairy farms.
M. Dutreuil*, M. Wattiaux, R. Gildersleeve, B. L. Barham, and V. E. Cabrera, University of Wisconsin, Madison.

T139  Performance of automatic milking during a whole herd transition to grazing.
S. Utsumi*, M. Haan, R. Ashley, and J. Bronson, Kellogg Biological Station, Michigan State University, Hickory Corners.

T140  Corn and forage yield on degraded pasture recovered by integrated crop-livestock-forest system in the central region of Minas Gerais, Brazil.
M. C. M. Viana1, M. H. T. Mascarenhas1, W. M. Alberna2, F. M. Freire1, R. C. Alvarenga1, E. A. Silva1, M. M. Gontijo Neto1, and M. F. F. Teixeira1, 1EPAMIG - Minas Gerais Agricultural Research Corporation, Belo Horizonte, Minas Gerais, Brazil, 2EMATER MG - Minas Gerais Agricultural Assistance and Rural Extension, Belo Horizonte, Minas Gerais, Brazil, 3Embrapa Maize and Sorghum, sete Lagoas, Minas Gerais, Brazil, 4FEAD, Belo Horizonte, Minas Gerais, Brazil, 5FAPEMIG, Belo Horizonte, Minas Gerais, Brazil.

T141  Supplement and stocking strategies for heavy-weight fall-born calves backgrounderd on Tifton 85 bermudagrass.
F. Rouquette*, J. Kerby, G. Nimr, and K. Norman, Texas Ag/ri Life Research, Overton.

T142  Production of wheat and oats overseeded into Tifton-85 grass at different forage allowances.
F. F. Simili*, A. C. Ruggieri1, T. V. Bertolina2, D. R. Casagrande1, R. A. Reis2, and R. Godoy4, 1APTA, Ribeirao Preto, Sao Paulo, Brazil, 2UNESP, Jaboticabal, Sao Paulo, Brazil, 3UFAM, Parintins, Amazonas, Brazil, 4EMBRAPA, Sao Carlos, Sao Paulo, Brazil.

T143  Effects of lack of shade on Wye Angus brood cows.
M. S. Updike* and R. M. Harrell, University of Maryland, College Park.

T144  Effect of stocking rate on forage production, soil compaction and root numbers in a swine pasture system.
B. Renner*, S. Pietrosemoli1, J.-M. Luginbuhl2, C. Raczkowski2, J. T. Green3, and J. Grossman1, 1North Carolina State University, Raleigh, 2North Carolina Agricultural and Technical State University, Greensboro.

T145  Average annual weight prediction of cows kept four years in a tough regime using a model of simulation.
J. M. Tapia1, J.C. Martinez2, H. Diaz2, A. Moreno2, J. A. Martínez2, O. D. Montañez*1, J. A. Ochoa2, and G. Roche-Chavez1, 1CUSUR, U de G, Cd. Guzman, Jalisco, Mexico, 2Univ Autonom de Tamaulipas, Cd Victoria, Tamps, Mexico, 3Univ Auton Agr Antonio Narro, Saltillo, Cohahuila, Mexico, 4Instituto Tecnologico de Cd Victoria, Cd Victoria Tamps, Mexico.
S. Ross*, E. A. Greene*, Greener pastures, stable footing, and seeking balance: An easy-to-use land stewardship series for all horse owners. Unesp, Botucatu, São Paulo, Brasil

J. A. V. Silva*, Genetic evaluation of annual earnings in Quarter Horses. Unesp, Botucatu, São Paulo, Brasil

M. D. S. Mota, Kentucky, Lexington, 2

B. R. Scott*, G. Scaglia*, Total fat and fatty acid composition of steaks from steers finished on three different forage systems in the Gulf Coast Region. Louisiana State University AgCenter, Baton Rouge, 3

B. C. Williamson*, M. L. Loopert, F. M. Rouquette, G. E. Aiken, S. F. Tabler, J. B. Wolley, and C. F. Rosenkrans, 1University of Arkansas, Fayetteville, 1USDA/ARS, DBSFRC, Booneville, AR, 1Texas AgriLife Research, Overton, 4USDA/ARS, FAPRU, Lexington, KY.

W. M. Backus1, B. T. Campbell2, A. M. Saxton3, D. K. Joines2, and J. C. Waller*, 1The University of Tennessee, Knoxville, 1Soil, Plant, and Pest Center, Nashville, TN.

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G. McMillan, G. Gentry*, and H. Boland3, 1LSU AgCenter Iberia Research Station, Jeanerette, LA, 1LSU AgCenter School of Animal Sciences, Baton Rouge, LA, 1Prairie Unit Mississippi State University, Prairie.

S. Ross*, A. F. Brito1, K. J. Soder2, K. Greene1, A. Green1, and P. Y. Chouinard3, 1University of New Hampshire, Durham, 2USDA-Agricultural Research Service-Pasture Systems and Watershed Management Research Unit, University Park, PA, 3Université Laval, Quebec City, Quebec, Canada.

E. A. Greene*, J. J. Brummer*, S. Hayes, J. E. Earing, S. M. McCown, and L. M. Lawrence, Selenium status declines in horses fed NRC adequate and low selenium diets. Mississippi State University, Mississippi State

M. D. S. Mota, Kentucky, Lexington, 2

W. M. Backus1, B. T. Campbell2, A. M. Saxton3, D. K. Joines2, and J. C. Waller*, 1The University of Tennessee, Knoxville, 1Soil, Plant, and Pest Center, Nashville, TN.

M. C. L. Dal Coleti1, and J. A. V. Silva*, 1Faculdade de Medicina Veterinária e Zootecnia, Unesp, Botucatu, São Paulo, Brasil, 1Institut National de la Recherche Agronomique, Jouy en Josas, France.

B. C. Williamson*, M. L. Loopert, F. M. Rouquette, G. E. Aiken, S. F. Tabler, J. B. Wolley, and C. F. Rosenkrans, 1University of Arkansas, Fayetteville, 1USDA/ARS, DBSFRC, Booneville, AR, 1Texas AgriLife Research, Overton, 4USDA/ARS, FAPRU, Lexington, KY.

Matching hay composition to cow requirements during the winter.

Total fat and fatty acid composition of steaks from steers finished on three different forage systems in the Gulf Coast Region.

Effect of molasses or cornmeal on milk production and nitrogen utilization of grazing organic dairy cows.

Sensory properties and abundance of selected volatile compounds in milk from cows fed timothy grass as hay, silage or pasture.

Is horse harvesting and processing plants a horse owner solution to the United States unwanted horse population?

S. Lindsey and M. Nicodemus*, Mississippi State University AgCenter, Mississippi State.

Selenium status declines in horses fed NRC adequate and low selenium diets.

Round-bale feeder design affects hay waste and intake during horse feeding.

Glycemic and insulinemic responses of weaning horses to high and low protein diets.

The development, evaluation and implementation of an online safety course for youth working on equine facilities.

Greener pastures, stable footing, and seeking balance: An easy-to-use land stewardship series for all horse owners.

Genetic evaluation of annual earnings in Quarter Horses.

Genetic correlation between racing performance traits in Quarter Horses.

Genome-wide association of polymorphic gait in the horse.

Aromatherapy treatment in horses.

L-Arginine supplementation increases ovarian blood flow in postpartum mares.

Using glycerol-1H to evaluate equine blastocyst capsule permeability.
**Effect of centrifugation/freezing extenders and sperm concentrations on post-thaw motility and membrane integrity of frozen-thawed stallion spermatozoa.**
C. S. Ballard*, C. G. Loretan, and J. B. Davis, William H. Miner Agricultural Research Institute, Chazy, NY, University of Vermont, Burlington.

**Evaluation of hCG or Deslorelin for enhancing ovulation and subsequent pregnancy rate in mares in a commercial setting.**
M. M. Tondre, M. M. Vogelsang*, C. A. Cavinder, C. M. Honnas, and S. G. Vogelsang, Texas A&M University, College Station, Texas Equine Hospital, Bryan, TX, Equine Reproductive Consultant, Hearne, TX.

**Endoscope-guided insemination for off-season mares.**

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**International Animal Agriculture**

**Milk and plasma iodine in Isfahan Holstein dairy cows.**
A. Nikkhah*1 and G. Ghorbani2, University of Zanjan, Zanjan, Iran, Isfahan University of Technology, Isfahan, Iran.

**The effect of stocking rate and calving date on reproductive performance, body state, metabolic, health and welfare parameters of Holstein-Friesian dairy cows.**
B. McCarthy*, K. M. Pierce1, L. Delaby1, A. Brennan1, and B. Horan1, Animal and Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland, INRA, AgroCampus Ouest, Saint-Gilles, France.

**Evolution of raw bovine milk quality: the Hungarian experience (1984-2009).**
G. Császár1, A. Unger1, and L. Varga*, Hungarian Dairy Research Institute, Inc., Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary, Hungary.

**Bulk tank somatic cells and its relationship to milk production, milk composition, and revenue in dairy farms located in central Thailand.**
D. Jatawa1, S. Koonawootrittriron1, M. A. Elzo*, and T. Suwanasopee1, Kasetsart University, Bangkok, Thailand, University of Florida, Gainesville.

**Factors affecting carcass weight, dressing percent, and marbling score of crossbred beef cattle in tropical Thailand.**
S. Koonawootrittriron1, M. A. Elzo*, C. Kankaew1, and M. Osothongs1, Kasetsart University, Bangkok, Thailand, University of Florida, Gainesville, Pon Yang Khram Livestock Breeding Cooperative NSC Ltd., Sakon Nakhon, Thailand.

**Forage yield and quality of two genetic materials of corn (Zea mays) harvested at two different cutting heights in Costa Rica.**

**Comparison of chemical composition, in situ degradability and in vitro gas production of ensiled and sun-dried mulberry pomaces.**
Z. Bo*, Q. Meng, L. Ren, F. Shi, and Z. Zhou, State Key Laboratory of Animal Nutrition, Beef Cattle Research Center, College of Animal Science and Technology, China Agricultural University, Beijing, China.

**Immune status of water buffalo calves allowed to nurse their dams.**

**Milk composition, blood cellular and chemical components of Saanen and local Lebanese goats.**

**Assessment of nutrient matrix values of three xylanase and β-glucanase on broilers performance fed wheat-based diet.**
S. A. Moftakharzadeh*, H. Moravej, and M. Shivazad, Department of Animal Science, Agriculture and Natural Source Pardis, University of Tehran, Karajiran.

**Evaluation of nutrient matrix values for different kinds of NSP enzymes on performance, water intake, litter moisture and jejunal digesta viscosity of broilers fed barley-based diet.**
S. A. Moftakharzadeh*, H. Moravej, and M. Shivazad, Department of Animal Science, Agriculture and Natural Source Pardis, University of Tehran, Karajiran.

**The effects of albusin 8 (bacteriocins) of Ruminococcus albus 7 expressed by yeast on the lipid metabolism of mice.**
Y. H. Hsieh*, H. T. Wang, J. T. Hsu, and C. Y. Chen, National Taiwan University, Taipei, Taiwan, Chinese Culture University, Taipei, Taiwan.
Nonruminant Nutrition

Amino Acids

Sponsor: Archer Daniels Midland

T178  Fermentation biomass can replace protein from fish and soybean meals in nursery diets.
V. G. Perez1,2, H. Yang1, T. R. Radke1, J. Less2, and D. P. Holzgreve1, 1ADM Alliance Nutrition Inc., Quincy, IL, 2ADM Specialty Feed Ingredients, Decatur, IL.

T179  The digestibility marker used and their inclusion level influence the magnitude of ileal amino acid digestibility response to phytase supplementation of a swine diet.
O. A. Olukosi1, O. Bolarinwa1, A. J. Cowieson2, and O. Adeola2*, 1Avian Science Research Centre, Scottish Agricultural College, Ayr, Ayrshire, United Kingdom, 2Department of Animal Sciences, Purdue University, West Lafayette, IN, 3Poultry Research Foundation, Faculty of Veterinary Science, The University of Sydney, Camden, Sydney.

T180  Evaluation of different lysine to threonine ratios on growth performance, relative organ weight, meat quality and blood profiles in broilers.
H. W. Cho*, L. Yan, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

T181  Essential amino acids to crude protein ratio in placenta and uterus during gestation.
Y. L. Ma*, N. Trottier, J. Liesman, R. L. Payne, and M. D. Lindemann, 1University of Kentucky, Lexington, 2Michigan State University, East Lansing, 3Evonik-Degussa Corp., Kennesaw, GA.

T182  Estimating fermentative amino acid catabolism in the upper gut of growing pigs.
D. Columbus*, J. P. Cant, and C. F. M. de Lange, 1Stichting Wageningen UR, DSW, 2Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.

T183  Serum amino acid concentration and expression of amino acid transporter bo,+ in pigs fed diets with different protein and amino acid levels.
H. García1, A. Morales1, A. B. Araiza2, M. Cervantes*, J. Yañez2, and P. Carrillo1, 1ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2Universidad Autónoma de Tlaxcala, Tlaxcala, Tlax, México.

T184  Effect of dietary leucine and isoleucine on productive performance and myosin expression in growing pigs.
V. Méndez1, A. Morales*, M. Cervantes1, B. A. Araiza1, and M. A. Barrera1, 1ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2Universidad de Sonora, Hermosillo, Son., México.

T185  Preference for diets with free L-tryptophan in pigs with different tryptophan status.
J. Suárez1, E. Roura1,2, T. R. Radke1, I. Ipharraguerre2,3, and D. Torrallardona1, 1IRTA-Mas de Bover, Constanti, Spain, 2Lucta S.A., Barcelona, Spain, 3Current address: University of Queensland, Brisbane, Australia.

T186  Effects of dietary inclusion of bioactive grape seed extract on protein and amino acid digestibility in broiler chicks.
S. Chamorro1, A. Viveros1, C. Centeno1, C. Romero1*, I. Arjá1, and A. Brenes1, 1Instituto de Ciencia y Tecnología de Alimentos y Nutrición, ICTAN, CSIC, Madrid, Spain, 2Facultad de Veterinaria, Universidad Complutense de Madrid, Spain, 3Escuela de Ingenieros Agrónomos, Universidad Politécnica de Madrid, Spain.

T187  Effect of levels of lysine and ractopamine on the performance of immunocastrated pigs from 97 to 124 kg.
D. O. Fontes*, B. O. Rosa1, U. A. D. Orlando2, M. A. e Silva1, and P. C. Silva1, 1Department of Animal Science, Veterinary School of UFCMB, Brazil, 2BRF Foods, Brazil.

T188  Effect of L-tryptophan supplementation on hypothalamic serotonin level and aggression of nursery pigs fed diets varying large neutral amino acid concentrations.
Y. B. Shen, G. Voulaque*, and S. W. Kim, North Carolina State University, Raleigh.

Nonruminant Nutrition

Energy

T189  Importance of sampling diets on the precision of ME studies with swine.

T190  Influence of dietary net energy concentration provided during the finishing period on carcass, meat and fat characteristics of heavy gilts.
M. A. Latorre*, L. C. Ajala, G. Ripoll1,2, and M. Joy1, 1Universidad de Zaragoza, Spain, 2Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain.

T191  Metabolizable energy and digestibility of carbohydrates in cereal grains fed to growing pigs.
S. K. Cervantes-Pahm* and H. H. Stein, University of Illinois, Urbana.
Nutritional value of acerola meal for broiler chickens.
L. H. Zanetti1, V. C. da Cruz2, G. do Valle Polycarpo2, A. C. Pezzato2, J. R. Sartori2, V. B. Fascina2, R. F. de Oliveira3, A. L. C. Brichi1, M. L. Poiatti1, O. J. Sabbag4, F. Vercese1, and F. B. de Carvalho2. 1Universidad Politécnica de Madrid, Spain, 2Universidad de Zaragoza, Spain, 3Universidad Complutense de Madrid, Spain.

Concentration of DE and ME in fermented soybean meal, conventional soybean meal, and fish meal fed to weanling pigs.
O. J. Rojas* and H. H. Stein, University of Illinois, Urbana. T194 The effect of n-3 fatty acid supplementation on growth performance, nutrient digestibility, blood profiles, meat quality and lean and adipose tissue fatty acid profiles in finishing pigs.
J. P. Wang*, B. U. Yang, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

Nonruminant Nutrition
Feed Ingredients

The granulated barley provided during growing or finishing period improves the major fatty acid composition in the intramuscular fat of longissimus dorsi muscle and of dry-cured ham from heavy pigs.
A. Daza1, M. A. Latorre*2, and C. J. López-Bote3. 1Universidad Politécnica de Madrid, Spain, 2Universidad de Zaragoza, Spain, 3Universidad Complutense de Madrid, Spain.

Sulfur addition in corn-soybean meal diets reduced nursery pig performance.

The effect of Kapok seed meal supplementation on growth performance, nutrient digestibility, blood characteristics, meat quality, and fatty acids profile in finishing pigs.
H. J. Kim*, T. X. Zhou, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

Performance of 1-d-old to 42-d-old broiler chicks fed with increasing levels of acerola meal replacing corn in diet.
V. C. da Cruz4, L. H. Zanetti5, G. do Valle Polycarpo2, R. F. de Oliveira2, A. L. C. Brichi1, D. D. Millen1, L. C. Carvalho5, D. O. dos Santos Gomes5, O. J. Sabbag1, and M. L. Poiatti1. 1São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil, 2São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil.

Inclusion of acerola meal replacing corn in the diet of broilers of 1-d-old to 21-d-old.
L. H. Zanetti1, V. C. da Cruz2, G. do Valle Polycarpo2, R. F. de Oliveira3, A. L. C. Brichi4, D. D. Millen1, V. B. Fascina2, M. L. Poiatti1, and O. J. Sabbag1. 1São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil, 2São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil.

Fatty acid content and sensory evaluation of trimmed loins as influenced by timing of feeding flaxseed or fish oil to pigs.
H. R. Martinez-Ramirez5, L. M. Pivotto1, I. B. Mandell2, J. K. G. Kramer2, and C. F. M. de Lange1. 1Centre for Nutritional Modelling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 2Agriculture and Agri-Food Canada, Guelph, ON, Canada.

Nonruminant Nutrition
Gastrointestinal Physiology

Intestinal short-chain fatty acid sensors, FFA2 and FFA3, and control of food intake.
M. Al-Rammahi*, K. Daly, A. Moran, and S. Shirazi-Beechey, University of Liverpool, Liverpool, UK.

Gene expression of the L-αmino acid-sensing receptor T1R1/T1R3 changes in gut tissues of pigs in response to dietary protein.
G. Tedo1, E. Roura2, I. Ihpharragueur*1, and X. Manteca2. 1Lucta SA, Feed Additives Division, Montornes del Vallés, Barcelona, Spain, 2Autonomous University of Barcelona, Bellaterra, Barcelona, Spain, 3Current address: University of Queensland, Brisbane, Australia.

Gene expression of the porcine sweet taste receptor in tongue and gut tissues changes after weaning.
G. Tedo1, X. Manteca2, I. Ihpharragueur*1, M. Reina3, D. Turrallardona4, and E. Roura1. 1Lucta SA, Feed Additives Division, Montornes del Valles, Barcelona, Spain, 2Autonomous University of Barcelona, Veterinary School, Bellaterra, Barcelona, Spain, 3University of Barcelona Cell Biology Dpt., Ccelltec-UB, Barcelona, Spain, 4IRTA -Mas de Bover, Constanti, Tarragona, Spain, 5Current address: University of Queensland, Brisbane, Australia.

Evaluation of seaweed-derived polysaccharides on indices of gastrointestinal fermentation and selected populations of microbiota in newly weaned pigs challenged with Salmonella Typhimurium.
Fermentation activity of colonic microbiota from piglets fed diets including alfalfa, citrus pulp or inulin.
S. Brambillasca*, I. M. Hernández1, A. Britos1, L. Reyes1, P. Zunino2, and C. Cajarville1, 1Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Montevideo, Uruguay, 2Departamento de Microbiología, Instituto de Investigaciones Biológicas Clemente Estable, MEC, Montevideo, Montevideo, Uruguay.

Physiology and Endocrinology II

Quantitative bioluminescence imaging of functional estrogen receptor activity within intact porcine ovarian follicles in vitro.
S. Jung* and S. T. Willard, Mississippi State University, Mississippi State.

Propionate increases mitochondrial phosphoenolpyruvate carboxykinase mRNA in Madin-Darby bovine kidney epithelial cells.
S. I. Tindell*, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.

Staining bovine sperm for sex-sorting: Concentration effects of seminal plasma, sperm and Hoechst 33342.

Effect of feed restriction on reproductive and metabolic hormones in dairy cows.
H. Gencoglu1, A. Nascimento1, K. Hackbart1, L. F. Ferraretto*1, F. Dalla Costa1, J. Guenther1, R. Meyer1, R. D. Shaver4, and M. C. Wiltbank1, 1Department of Dairy Science, University of Wisconsin-Madison, Madison, 2Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, University of Uludag, Bursa, Turkey.

Fetal growth and maternal body condition following melatonin supplementation in adequately fed or nutrient restricted ewes.

Effects of realimentation after nutrient restriction during early to mid-gestation on uterine blood flow in pregnant beef cows.
L. E. Camacho*, C. O. Lemley1,2, B. W. Neville1,2, C. R. Dahlen1,2, G. P. Lardy1,2, and K. A. Vonnahme1,2, 1Center for Nutrition and Pregnancy; Department of Animal Sciences, Fargo, ND, 2North Dakota State University, Fargo.

Effects of propiogenic supplements on serum concentration of insulin and progesterone in nonlactating cows: I. Monensin.
T. Leiva1, M. Barbosa1, R. O. Rodrigues1, R. F. Cooke2, and J. L. M. Vasconcelos*1, 1UNESP – Faculdade de Medicina Veterinária e Zootecnia, Botucatu, SP, Brazil, 2Oregon State University – Eastern Oregon Agricultural Research Center, Burns.

Effects of propiogenic supplements on serum concentration of insulin and progesterone in nonlactating cows: II. Propylene glycol.
A. M. L. Madureira1,2, M. A. S. Borges1, R. O. Rodrigues1, R. F. Cooke2, and J. L. M. Vasconcelos*1, 1UNESP – Faculdade de Medicina Veterinária e Zootecnia, Botucatu, SP, Brazil, 2Oregon State University – Eastern Oregon Agricultural Research Center, Burns, OR.

Follicular fluid composition in cyclic Hereford cows supplemented with rice bran in grazing conditions.
L. Veloz1,2, M. E. Trobo1,2, C. García Pintos1,2, C. Viñoles2, and M. Carriquiry*, 1School of Agronomy, UdelaR, Montevideo, Uruguay, 2National Research Institute for Agriculture, Tracauembo, Uruguay.

Capability of a new or once-used CIDR to develop persistent follicles and the capability of additional progesterone for persistent follicle turnover in replacement beef heifers.

Influence of CIDR-based protocols associated with supplementation of calcium soap on reproductive performance of Nellore cows.
M. V. Biehl*, A. V. Pires1,2, I. Susin2, D. D. Nepomuceno1, J. R. S. Gonçalves1, L. H. Cruppe1, F. M. da Rocha1, and M. L. Day3, 1University of Sao Paulo, Pirassununga, SP, Brazil, 2University of Sao Paulo, Piracicaba, SP, Brazil, 3Ohio State University, Columbus, 4Experimental Station Georgina Hildegard von Pritzelwitz, Londrina, PR, Brazil.

Effect of dietary conjugated linoleic acid on reproduction and tissue responses in dairy cows.
G. Esposito*, A. Schneider1, V. A. Absalon Medina1, S. H. Pelton1, and W. R. Butler1, 1University of Naples Federico II, Naples, Italy, 2Cornell University, Ithaca, NY, 3Universidade Federal de Pelotas, Pelotas, RS, Brazil.

Effect of timing of initiation of Resynch and presynchronization with GnRH on fertility of resynchronized inseminations in lactating dairy cows. (see Abstract 228).

Endocrine and ovarian parameters associated with increased fertility after resynchronized timed artificial inseminations in lactating dairy cows.
J. O. Giordano*, M.C. Wiltbank, and P. M. Fricke, Department of Dairy Science, University of Wisconsin, Madison.
Use of the CIDR+EB synchronization program in prepubertal Nellore heifers.
M. V. Biehl1, A. V. Pires1,2, I. Susin1, L. H. Cruppe2, D. D. Nepomuceno2, J. R. S. Gonçalves3, F. M. Da Rocha1, and M. L. Day3,
1University of Sao Paulo, Pirassununga, SP, Brazil, 2University of Sao Paulo, Piracicaba, SP, Brazil, 3Ohio State University, Columbus,
*Experimental Station Georiga Hildegard von Pritzelwitz, Londrina, PR, Brazil.
T221
Effects of ethanol and acetic acid fed to high-producing dairy cows on blood parameters.
T222
Estrous response in yearling and multiparous ewes during reduction on the synchronized luteal phase and eCG injection.
J. L. Cordero1, T. Sánchez2, P. Molina, R. Nieto1, J. Peralta2, O. Mejía1, L. Oliveras1, E. García*, and J. L. Figueroa1,1
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*FMVZ, Universidad Autónoma de México, Tres Marías, México, Universidad Autónoma del Estado de México, Toluca, Estado de México,
**CUCSUR, Universidad Autónoma de Guadalajara, Jolisco, México.
T223
Fertility following fixed-time AI in infertile CIDR-treated dairy cows given rbST throughout extended (>500 d) lactations.
T224
Adiponectin system and peroxisome proliferator-activated receptor gamma2 (PPARγ2) mRNA abundance in different bovine fat depots considering conjugated linoleic acids (CLA) or lactation stage related changes.
T225
Relationship between follicular and ovulatory responses with embryo production during superovulatory treatment in cattle.
H. Kohram1,2 and M. Poorhammadollah1,1, 1Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran, 2Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University, Ahvaz, Iran.
T226
Differences in estrus versus nonestrus cow cervix morphology: Verification of a cost-effective methodology.
A. Nikkhah*, M. A. Sirjani, A. A. Assadzadeh, and H. Amanloo, University of Zanjan, Zanjan, Iran.
T227
Metabolic characteristics of pregnant gilts fed low fat and excess protein diets associated to intrauterine growth retardation (IUGR).
C. C. Metges*, I. S. Lang1, U. Hennig1, M. Peters1, K.-P. Brüssow1, E. Kanitz1, M. Tuchscherer1, F. Schneider1, J. Weitzel1, A. Ooster1, H. Sauerwein1, G. Nürnberg1, C. Rehfeldt1, and W. Otten1, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2Institute of Animal Science, Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany.
T228
Induction of luteal tissue in PGF2α-treated sows.
D. Gandy*, A. L. Greathouse, H. Klienman, F. M. LeMieux, and C. E. Ferguson, McNeese State University, Lake Charles, LA.
T229
Effects of increased GnRH dose post–TAI in Brahman influenced cattle.
B. Pousson*, D. J. Kesler2, M. Poole1, W. Storer1, and C. E. Ferguson2, 1McNeese State University, Lake Charles, LA, 2University of Illinois, Urbana-Champaign.
T230
Dynamics of fat cell turnover in visceral and subcutaneous fat tissue in dairy cows.
S. Häussler*, S. Dánicke, K. Friedauer1, D. Germeroth1, D. von Soost1, and H. Sauerwein1, University of Bonn, Germany, 2Federal Research Institute, Braunschweig, Germany.
T231
Insulin sensitivity in obese (iberian) and lean (Landrace) 50-Kg barrows.
I. Fernandez-Figares*, L. Gonzalez-Valero, J. M. Rodriguez-Lopez, and M. Lachica, University of Sao Paulo, College of Agriculture “Luiz de Queiroz”, Piracicaba, SP, Brazil.
T232
Reproductive performance of replacement beef heifers when estrus was synchronized with progesterone (CIDR) for 5 or 7 d, GnRH, and PGF2α.
K. M. Bischoff*, T. E. Black1, F. Becker1, C. Hametner1, B. Losand2, and W. Kanitz2, 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2State Institute for Agriculture and Fishery, Dummerstorf, Germany, 3Veterinary Physiology, Vetsuisse Faculty, Bern, Switzerland.
T233
Fat mobilization during early lactation: Effects on milk performance, feed intake, body condition and metabolic changes in dairy cows.
C. Weber**, F. Becker1, C. Hametner1, B. Losand2, R. M. Bruckmaier2, W. Kanitz2, and H. M. Hammon1, 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2State Institute for Agriculture and Fishery, Dummerstorf, Germany, 3Veterinary Physiology, Vetsuisse Faculty, Bern, Switzerland.
T234
Fat mobilization around calving in high-yielding dairy cows affects hepatic gene expression of gluconeogenic enzymes but not enzymes involved in fatty acid oxidation.
H. M. Hammon*, C. Weber1, F. Becker1, C. Hametner1, B. Losand2, and W. Kanitz2, 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2State Institute for Agriculture and Fishery, Dummerstorf, Germany.
T235
Ovarian characteristics, serum estradiol and progesterone concentrations, and fertility in lactating dairy cows in response to equine chorionic gonadotropin (eCG).
S. L. Pulley*, L. D. Wallace, H. I. Mellieon, and J. S. Stevenson, Kansas State University, Manhattan.
A mechanistic metabolic model of regulation of reproductive processes in dairy cattle.
J. P. McNamara1, S. L. Shields*, 1Washington State University, Pullman, 1University of Sydney, Camden, NSW, Australia.

Effect of prostaglandin F2alpha on growth of Escherichia coli and Streptococcus uberis associated with bovine mastitis.
C. Atrasani*, B. Shaﬁi2, M. McGuire1, J. Dalton1, and A. Ahmadzadeh1, 1University of Idaho, Moscow, 2Statistical Programs, College of Ag & Life Sci, Moscow, ID, 3Caldwell R & E Center, Caldwell, ID.

Effects of sequential injections of GnRH at 17 and 24 d after AI on progesterone concentration and pregnancy losses.
A. L. A. Scanavez*1, J. G. N. Moraes1, R. G. Bruno2,3, K. J. Lagger2, J. A. H. Rivera1, P. R. B. Silva1, L. G. D. Mendonc3, R. T. Bilby1, and R. C. Chebel1, 1Department of Veterinary Population Medicine, University of Minnesota, St. Paul, 2Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville, 3Department of Agricultural Science, West Texas A&M University, Canyon.

Effect of GnRH treatment at critical stages of estrous cycle following artificial insemination on pregnancy rate in lactating Holstein dairy cows.
Z. Hakimi, A. Z. Shahne, H. M. Yegane, and R. Masoumi*, University of Tehran, Karaj, Karaj, Iran.

Production, Management and the Environment I

Effect of insemination timing on conception rates of dairy cows having high activity as identiﬁed by the Select Detect activity monitor.
R. L. Nebel*1, J. M. DeJarnette1, and E. Harty2, 1Select Sires Inc., Plain City, OH, 2Dairymaster, Causeway, Co. Kerry, Ireland.

Reproductive performance in Mexican Holstein dairies by geographic region.

Effects of 2.1 and 10 x 106 dosages of sex-sorted or conventionally processed sperm on conception rates of Holstein heifers.
J. M. DeJarnette*1, M. A. Leach1, R. L. Nebel1, C. E. Marshall1, C. R. McCleary2, and J. F. Moreno3, 1Select Sires Inc., Plain City, OH, 2Sexing Technologies Inc., Plain City, OH, 3Sexing Technologies Inc., Navasota, TX.

IGF-I increases in vitro embryo production and protects against deleterious effects of heat stress in Nelore (Bos indicus) and Holstein (Bos taurus) breeds.

Cytological endometritis incidence in crossbred dairy cows.

Effect of simultaneous thawing of multiple semen straws and sequence of insemination on pregnancy rate for timed-AI in Holstein (Bos taurus) and Nelore (Bos indicus) breeds.
L. Z. Oliveira*1, V. F. M. Hossepiain de Lima1, R. M. Santos2, T. Martins3, R. F. G. Peres*, H. B. Graff2, E. R. Carvalho2, A. F. C. de Andrade1, and R. P. Arruda3, 1FCAV-UNESP, Jaboticabal, SP, Brazil, 2FAMEV-UFU, Uberlândia, MG, Brazil, 3FMVZ-UNESP, Botucatu, SP, Brazil, 3Agropecuária Fazenda Brasil, Nova Xavantina, MT, Brazil, 3FMVZ-USP, Pirassununga, SP, Brazil.

An individual cow-based model to aid in decision making about reproductive management of dairy cows.
P. Federico*, A. De Vries1, G. M. Schuenemann1, and K. N. Galvão*, Capital University, Columbus, 1University of Florida, Gainesville, 2The Ohio State University, Columbus.

Efficacy of embryo transfer in lactating dairy cows during summer using fresh or vitriﬁed embryos produced in vitro with sex-sorted semen. II. Calving data.
T. R. Bilby*, J. Block1, B. M. Stewart1, P. Morelli1, L. Bonilla1, and P. J. Hansen1, 1Texas AgriLife Research and Extension, Texas A&M System, Stephenville, 2OvaTech LLC, Gainesville, FL, 3Department of Animal Sciences, University of Florida, Gainesville.

Economic evaluation of embryo transfer in dairy cows during the summer using linear programming.
A. De Vries*, T. R. Bilby1, J. Block1, and P. J. Hansen1, 1University of Florida, Gainesville, 2Texas AgriLife Research and Extension, Texas A&M System, Stephenville, 3OvaTech LLC, Gainesville, FL.

Economic comparison of two resynchronization protocols initiated at different intervals after insemination on fertility in lactating dairy cows.
J. G. N. Moraes*1, R. G. S. Bruno2,3, P. R. B. Silva1, A. L. A. Scanavez2, L. G. D. Mendonça2, I. A. Hernandez-Rivera2, K. J. Lager2, T. R. Bilby2, J. Fetrow1, and R. C. Chebel1, 1Department of Veterinary Population Medicine, University of Minnesota, St. Paul, 2Texas AgriLife Research and Extension Service, Texas A&M System, Stephenville, 3Department of Agricultural Science, West Texas A&M University, Canyon.

The effects of probiotic, prebiotic, and plant extract on egg quality in layer hens.
V. Kalderon1 and V. Akay*, 1Cakabey High School, Izmir, Turkey, 2Global Nutritech Biyoteknoloji Ltd., Kocaeli, Turkey.
T251  The in vitro antibacterial activity of extracts by different extraction of Chinese pulsatilla root, purslane herb, dyers woad leaf, and ash barks—traditional Chinese medicine.
F. Rejun*, W. Xiangrong†, H. Jianghua†, Y. Yulong†, and C. Caihui†, 1Department of Animal Science and Technology, Hunan Agricultural University, Changsha, Hunan, P. R. China, 2Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, Hunan, P. R. China.

T252  Effect of season on four categories of fresh and current mastitis infections in Minnesota.
R. F. Leuer* and J. K. Reneau, University of Minnesota, Saint Paul.

T253  Effect of somatic cells counting on milk composition of Holstein cows.
J. A. De Freitas†*, A. F. Garcez Neto†, J. C. De Souza†, J. D. Silva†, V. L. De Souza†, and T. M. Dos Santos†, 1Federal University of Paraíba, Patolína, Paraíba, Brazil, 2Federal University of South Mato Grosso, Aquidauana, Mato Grosso do Sul, Brazil.

T254  Immunoglobulin G1 concentration and bacterial contamination of colostrum fed to newborn Holstein heifers in Central California dairies.
I. Z. Zhelev*, N. D. Sprio†, J. D. Robison†, J. Quigley‡, and A. Lago†, 1California State University, Fresno, 2APC Inc., Ankeny, IA.

T255  Use of a blood glucose meter compared with laboratory analysis in dairy calves.
M. R. Staffne* and S. I. Kehoe, University of Wisconsin-River Falls, River Falls.

T256  Study on the metabolic mechanism of melamine in dairy cattle.
X. Jin, Y. Zhang, S. Li*, H. Zhang, Q. Zhang, and Z. Cao, 1State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China.

T257  Association between milk urea nitrogen and fertility of Brazilian dairy cows.
M. C. Doska†, J. A. Horst‡, A. A. Valloto†, and R. Almeida†*, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2Associação Paranaense de Criadores de Bovinos da Raça Holandesa, Curitiba, PR, Brazil.

T258  Metabolic profiles and immune status of periparturient dairy cows transitioning from conventional to organic management system.

T259  Season and stage of lactation affected metabolic profiles and innate immunity of periparturient dairy cows.

T260  Management factors affecting microbial contamination of bovine colostrum.
E. Conrad†*, K. Morrill‡, J. Quigley‡, and H. Tyler‡, 1Iowa State University, Ames, 2APC Inc., Ankeny, IA.

T261  Effect of short-term treatment with bovine somatotropin on milk yield of Brazilian dairy cows.
R. Almeida‡* and S. L. Viechnieski‡, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2StarMilk Farm, Céu Azul, PR, Brazil.

T262  Chop length, dry matter and density of corn and wheat silage structures in California dairies.
N. Silva-del-Río‡* and C. Heiman‡, 1University of California Cooperative Extension, Tulare, 2Alltech, Lexington, KY.

T263  Molecular aspect of laying hens feed cottonseed meal supplemented with lysine and enzyme.
K. Pournia*, H. Kermanshahi, and A. Golian, Ferdowsi University of Mashhad, Mashhad, Iran.

T264  Performance evaluation of Santa Ines ewes and lambs weaned at 60 days of lactation.
M. M. Stradiotto†*, A. D. Rodrigues†, and J. A. Negrão†, 1University of Sao Paulo – USP; Faculty of Animal Science and Food Engineering – FZEA, Pirassununga, SP, Brazil, 2University of Sao Paulo State – UNESP; Faculty of Agronomy and Veterinary Sciences – FCAV, Jaboticabal, SP, Brazil.

T265  Comparison of pork characteristics of antibiotic free Yorkshire crossbreds raised in the hoop barn.
S.-H. Oh*, D. Bautista*, D. Hansor†, M. Morrow‡, and T. See‡, 1North Carolina A&T State University, Greensboro, 2North Carolina State University, Raleigh.

T266  Comparison of body weights in Berkshire and Large Black crossbreds produced by the use of antibiotic-free Yorkshire sows.
S.-H. Oh*, M. Morrow‡, and T. See‡, 1North Carolina A&T State University, Greensboro, 2North Carolina State University, Raleigh.

T267  Evidence that maternal conjugated lineoleic acid alters secondary metabolites in plasma of late-stage chick embryos that may lead to increased embryonic mortality.
V. A. Leone*, D. Haughey‡, E. A. Bobeck‡, M. E. Cook‡, and F. M. Assadi-Porter‡, 1University of Chicago, Chicago, IL, 2University of Wisconsin-Madison, Madison.

T268  Suitability of visual ear tags, electronic boluses and retinal images for tracing and auditing lamb traceability.

T269  Retrospective analysis of the effects of feeding pelleted versus meal diets on growth performance of 12- to 30-kg nursery pigs over a 5-year period.
E. D. Frugé*, E. L. Hansen‡, S. A. Hansen§, K. A. Frerichs¶, and C. W. Hastad¶, 1Hubbard Feeds, Mankato, MN, 2New Fashion Pork, Jackson, MN.
Ruminant Nutrition
Beef Cattle

Performance and carcass traits of bulls fed different levels of crude glycerin.

Effects of distillers grain supplementation on beef cow performance.
M. J. Faulkner*, P. M. Walker, R. L. Atkinson, J. L. Veracini*, L. A. Forster†, J. M. Carmack†, and K. L. Jones‡, Illinois State University, Normal, †Southern Illinois University, Carbondale, ‡Archer Daniels Midland Co, Decatur, IL.

Effect of a mixture of cinnamaldehyde, carvacrol and capsicum oleoresin on performance and rumen development of weaning calves.
C. Oguey*, J. Trautwein‡, H. Hendrik Kuhrmann‡, G. Dusel‡, and D. Bravo‡, Pancosma, Geneva, Switzerland, ‡University of Applied Sciences, Bingen, Germany.

Effect of fescue toxicosis on the expression of selected hepatic genes in Angus cattle.

Evaluation of Nellore steers’ performance supplemented with two levels of concentrate and sugar cane in feedlot.
R. M. Silva*, J. T. Pádua¹, J. Restle*, R. Z. Taveira¹, B. A. S. R. Leite¹, and D. A. Lima¹, Universidade Estadual de Goiás, São Luís de Montes Belos, Goiás, Brazil, ¹Universidade Federal de Goiás, Goiânia, Goiás, Brazil, 1FAPEG, Goiânia, Goiás, Brazil.

The influence of glycerol supplementation during late gestation on beef cow performance and dietary digestibility.

The effect of feed additive and sulfur intake on rumen fluid pH and rumen gas cap hydrogen sulfide concentration in feedlot steers.
K. L. Neuhold*, J. J. Wagner¹, T. E. Engle¹, E. M. Domby¹, and M. Branine¹, Colorado State University, Fort Collins, ¹Alpharma Animal Health, Canonsburg, CO.

The effect of feed additive program and dietary sulfur concentration in steam-flaked corn diets containing wet distillers grains on feedlot performance and carcass merit in yearling feedlot steers.
E. M. Domby*, K. L. Neuhold*, J. J. Wagner¹, T. E. Engle¹, and M. Branine¹, Colorado State University, Fort Collins, ¹Alpharma Animal Health, Canonsburg, CO.

Effects of dietary chromium propionate on performance traits of stocker/growing cattle.
J. L. Veracini*, P. M. Walker, M. J. Faulkner*, and R. E. Hall¹, Illinois State University, Normal, ¹Cooperative Research Farms, Richmond, VA.

Nutrient digestibility and residual feed intake in Nellore heifers.
R. H. Branco¹, E. Magnani¹, T. L. Sobrinho¹, S. F. M. Bonilha¹, L. T. Egawa¹, M. E. Z. Mercadante*, and F. M. Monteiro¹, Instituto de Zootecnia, Sertãozinho, São Paulo, Brasil, ¹Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, São Paulo, Brasil.

Potential of calcium oxide-treated corn stover and modified distillers grains as a partial replacement for corn grain in feedlot diets.
J. R. Russell*, D. D. Loy¹, and M. C. Queiroz¹, Iowa State University, Ames, ¹Archer Daniels Midland Company, Decatur, IL.

Performance of Nellore steers from a genetic improvement program in feedlot.
M. D. Freitas Neto¹, J. J. R. Fernandes*, D. A. Lima¹, P. L. P. Rezende¹, G. A. B. Queiroz¹, L. F. N. Souza¹, J. M. C. Silva¹, E. G. Moraes¹, and M. L. R. Pereira¹, Universidade Federal De Goiás, Goiânia, Goiás, Brasil, ¹Conselho Nacional De Desenvolvimento Científico e Tecnológico, Brasilia, Distrito Federal, Brasil, ¹Nellore Qualitas, Goiânia, Goiás, Brasil.

Effect of partial or complete replacement of barley grain with wheat bran on voluntary intake, apparent nutrient digestibility and rumen pH of beef heifers fed backgrounding rations.
A. D. Friedt*, T. A. McAllister², B. Wildeman², and J. McKinnon², University of Saskatchewan, Saskatoon, SK, Canada, ²Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada, ²Pound-Maker Agventures Ltd., Lanigan, SK, Canada.
**T284**
Effect of different doses of chitosans to modulate ruminal fermentation in Nelore steers.
F. P. Rennó, A. P. C. Araújo, J. E. Freitas Junior, J. R. Gandra, R. Gardinali, G. D. Calomeni, L. N. Renno, M. C. B. Santos, and R. T. Trimboli, *University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil, State University Julio de Mesquita, Jaboticabal, Sao Paulo, Brazil, Vicoso Faculty of Life Sciences and Health, Vicoso, Minas Gerais, Brazil.

**T285**
Evaluation of residual feed intake of Nelore bulls from a genetic improvement program.

**T286**
Effect of different doses of chitosans on ruminal microbial protein synthesis in Nelore steers.
F. P. Rennó, A. P. C. Araújo, J. E. Freitas Junior, J. R. Gandra, G. D. Calomeni, R. Gardinali, L. N. Renno, B. C. Venturelli, T. H. A. Vendramini, and F. G. Vilela, *São Paulo University, São Paulo, São Paulo, Brazil, State University Julio de Mesquita, Jaboticabal, Brazil, Faculty of Life Sciences and Health, Facis, Viçosa, Minas Gerais, Brazil.

**T287**
Effect of crude glycerin on nutrient intake and apparent digestibility in Nellore feedlot steers.

**T288**
Performance and carcass traits of bulls fed lipids sources and ionophore.

**T289**
Effect of post-ruminal Saccharomyces boulardii on fecal parameters and nutrient digestibility in Holstein steers given abomasal oligofructose.

**T290**
Can forage-based nutritional strategies offset weaning stress in calves?

**T291**
Urea supplements for beef steers grazing on marandugrass pastures during dry season in the Brazilian savannas.
D. G. de Quadros, H. N. de Souza, G. L. Franco, R. G. de Almeida, and D. N. de Oliveira, *Universidade do Estado da Bahia (UNEB), Barreiras, Bahia, Brazil, PETROBRAS, Rio de Janeiro, Rio de Janeiro, Brazil, Universidade Federal do Mato Grosso do Sul (UFMS), Campo Grande, Mato Grosso do Sul, Brazil.

**T292**
Influence of nonmedicated additives as alternatives to antibiotics on calf plasma and intestinal measurements.
S. M. Katzman, S. I. Kehoe, University of Wisconsin-River Falls, River Falls, Milk Products LLC, Chilton, WI.

**T293**
Effects of using near infrared spectroscopy to segregate and feed high and low energy barley on feedlot cattle performance, animal health, and carcass characteristics.

**T294**
Supplementation of methionine hydroxy analog, chelated trace mineral and dietary antioxidants in the diet of beef bulls for color stability.

**T295**
Evaluation of bimodal distributions to determine meal criterion in heifers fed a high-grain diet.
J. C. Bailey, L. O. Tedeschi, and G. E. Carstens, *Texas A&M University, College Station.

**T296**
Effects of temperament classification and breed type on feed efficiency and feeding behavior traits in heifers fed a high-grain diet.

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**Ruminant Nutrition**

**Dairy Cattle**

**T297**
Effect of concentration of flax hulls in the diet on intake, digestion, milk production, and milk composition of dairy cows.
H. V. Pettit, *Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

**T298**
Body condition score at the initiation of bST supplementation does not affect milk response in dairy cows of Chile.
F. Bargo, S. Follert, A. Hinoestroza, L. Lastra, and R. Navarrete, Elanco Animal Health, Southern Cone (Argentina & Chile), Ancali Dairy, Los Angeles, Chile.
Associations among digestive tract lesions and abnormal serum chemistries in cul dairy cattle.
M. B. Hall**, G. R. Oetzel†, G. B. Huntington‡, F. M. Moore*, and D. M. Hertzke×, 1U.S. Dairy Forage Research Center, USDA-ARS, Madison, WI, 2School of Veterinary Medicine, Univ. of Wisconsin, Madison, 3Dept. of Animal Science, Univ. of North Carolina, Raleigh, 4Marshfield Labs Veterinary Services, Marshfield, WI.

Influence of a reduced-starch diet with or without exogenous amylase on lactation performance by dairy cows.
L. F. Ferraretto*, R. D. Shaver†, M. Espineira‡, H. Gencoglu×, and S. J. Bertics%, 1Department of Dairy Science, University of Wisconsin-Madison, Madison, 2Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, University of Uludag, Bursa, Turkey.

Effects of different ratios of extruded soybeans and whole cottonseeds on production performance of cows and conjugated linoleic acids (CLA) in milk fat.
R. Yan†, S. Y. Chen‡, C. Jiang%, and J. G. Han%, 1Department of Grassland Science, China Agricultural University, Beijing, China, 2Department of Agronomy, University of Wisconsin-Madison, Madison.

Effects of supplemental whole cotton seeds on production performance and milk fatty acids of dairy cows fed diets with different ratios of corn silage and alfalfa hay.
R. Yan†, S. Y. Chen‡, R. Z. Zhang%, Y. J. Zhang%, and J. G. Han%, 1Department of Grassland Science, China Agricultural University, Beijing, China, 2Department of Agronomy, University of Wisconsin-Madison, Madison.

Energy expenditure, feeding behavior and locomotion of grazed versus zero-grazed dairy cows throughout the lactation period.
F. Dohme-Meier†, L. D. Kaufmann§, S. Görs%, P. Junghans%, C. C. Metges%, and A. Münger%, 3Agroscope Liebefeld-Posieux, Research Station ALP, Posieux, Switzerland, 4Research Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

Effects of combinations of probiotics on growth and blood biochemical parameters in preruminant calves.
Y.-Q. Fu, Q.-Y. Diao, Y. Tu*, N.-F. Zhang, and C.-G. Jiang, Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, PR. China.

The limiting sequence and proper ratio of lysine, methionine and threonine for calves fed milk replacers containing soy protein.
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Feeding frequency for individually fed early lactation cows: enlightening the perplexing strategy.
A. Nikkhah*, S. M. Karimzadeh, B. Sorkhroo, S. Asghari, M. Avaz Khanloo, and L. Bahramkhani Zarrin Goli, Research Institute, Chinese Academy of Agricultural Sciences, Beijing, P.R. China.

Influence of a reduced-starch diet with or without exogenous amylase on lactation performance by dairy cows.
L. F. Ferraretto*, R. D. Shaver†, M. Espineira‡, H. Gencoglu×, and S. J. Bertics%, 1Department of Dairy Science, University of Wisconsin-Madison, Madison, 2Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, University of Uludag, Bursa, Turkey.

Effects of different ratios of extruded soybeans and whole cottonseeds on production performance of cows and conjugated linoleic acids (CLA) in milk fat.
R. Yan†, S. Y. Chen‡, C. Jiang%, and J. G. Han%, 1Department of Grassland Science, China Agricultural University, Beijing, China, 2Department of Agronomy, University of Wisconsin-Madison, Madison.

Effects of supplemental whole cotton seeds on production performance and milk fatty acids of dairy cows fed diets with different ratios of corn silage and alfalfa hay.
R. Yan†, S. Y. Chen‡, R. Z. Zhang%, Y. J. Zhang%, and J. G. Han%, 1Department of Grassland Science, China Agricultural University, Beijing, China, 2Department of Agronomy, University of Wisconsin-Madison, Madison.

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Prolonged provision of protected methionine improves milk contents and yields of fat and protein in lactating cows.
A. Nikkhah*, D. Kianzad, A. Haj Hosseini, A. Zalbeik, and G. Ghorbani, 1University of Zanjan, Zanjan, Iran, 2Animal Breeding Center, Karaj, Iran, 3Isfahan University of Technology, Isfahan, Iran.

Rumen degradation patterns of ground and steam-processed broomcorn and ground barley.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

Steam-flaking of broom sorghum improves effective rumen degradation of DM while Controlling that of CP.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

Steam-flaked broom sorghum a viable substitute for ground barley in midlactation dairy rations.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

Effect of dietary nitrogen levels and yeast supplementation on apparent diet digestibility and microbial population in the rumen content of dairy lactating cows.
D. R. Ouellet* and J. Chiquette, Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke (QC) Canada.

Ground broomcorn in dairy rations.
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

Effect of naturally extracted vitamin E (RRR-α-tocopheryl acetate) vs. synthetic vitamin E on blood and milk levels of vitamin E in lactating dairy cows.
M. B. de Ondarza**, K. Daniels³, and D. Bunting², 1Paradox Nutrition LLC, West Chazy, NY, 2ADM Alliance Nutrition Inc., Quincy, IL.

Large-scale production effects of an intestinally releasable methionine product in dairy cows.
A. Nikkhah*, R. Kowsar², and G. Ghorbani, 1University of Zanjan, Zanjan, Iran, 2Isfahan University of Technology, Isfahan, Iran.

Study on the metabolic mechanism of melamine in dairy cattle.
X. Jin*, Y. Zhang, S. Li, H. Zhang, and Q. Zhang, College of Animal Science and Technology, China Agricultural University, Beijing, China.

Conjugated linoleic acid (CLA) supplementation around calving affects glucose metabolism in dairy cows.
H. M. Hammon*, K. Hötger², S. Görs¹, M. Becker¹, C. Weber¹, A. Tröscher², and C. C. Metges², 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2BASF, Limburgerhof, Germany.
T317 Lactation performance and milk fatty acid profile in dairy cows fed linseed oil in diets with different forage to concentrate ratios.
L. Saliba1,2, R. Gervais1, Y. Lebeuf1,2, J.-C. Vuillemaud1, and P. Y. Chouinard1,2, 1Département des sciences animales, Université Laval, Québec, Québec, Canada, 2Institute of Nutraceuticals and Functional Foods (INAF), Québec, Québec, Canada.

T318 Rumen volume and passage kinetics depend on feeding time (0900 vs. 2100 h).
A. Nikkhah3, J. C. Plaizier3, and A. D. Kennedy2, 1University of Zanjan, Zanjan, Iran, 2University of Manitoba, Winnipeg, MB, Canada.

T319 Influence of method of surfactant supplementation on characteristics of digestion and feeding value of fat in Holstein steers fed a high-energy finishing diet.
H. Dávila-Ramos1, A. Gonzalez-Castellon2, A. Barreras-Serrano1, A. Estrada-Angulo2, M. A. López-Soto1, J. V. Macias-Zamora1, A. Plascencia1, S. H. Vega1, and R. A. Zinn1, 1ICV - Universidad Autónoma de Baja California, México, 2FMVZ - Universidad Autónoma de Sinaloa, México, 3Department of Animal Science, University of California, Davis, El Centro.

T320 Evaluation of limit feeding and bunk management strategies for gravid dairy replacement heifers.
N. M. Esse1, J. Larson2, P. C. Hoffman2, C. L. Liu3, and W. K. Coblenz2, 1University of Wisconsin, Madison, 2Northeast Institute of Geography and Agricultural Ecology, CAS, Harbin, Heilongjiang, China, 3USDA-ARS Dairy Forage Research Center, Marshfield, WI.

T321 Effects of cinnamon essential oil, cinnamaldehyde and monensin on milk fatty acid profile of dairy cows.
C. Benchaab1, 1Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Université Laval, Département des Sciences Animales, Québec, QC, Canada.

T322 Fatty acids in milk of dairy cows fed diets containing propolis-based products.
S. C. de Aguiar1, S. M. Cottica1, R. B. Samensari1, E. M. de Paula1, S. L. Franco1, L. P. P. de Moura1, G. T. dos Santos1, J. V. Visentainer1, W. B. R. dos Santos2, E. H. Yoshimura2, M. V. Valero1, and L. M. Zeoula1, 1Universidade Estadual de Maringá, Maringá, Paraná, Brazil, 2Instituto Federal do Amazonas, Maués, Amazonas, Brazil.

T323 Varying dietary dry matter concentration through water addition: Effect on nutrient intake of dairy cows in late lactation.
J. A. Fish and T. J. DeVries*, 1University of Guelph, Kemptville Campus, Kemptville, ON, Canada.

T324 Effect of parity and stage of lactation on feed sorting behavior of lactating dairy cows.
T. J. DeVries*, 1, L. Holtshausen2, M. Oba3, and K. A. Beauchemin2, 1University of Guelph, Kemptville Campus, Kemptville, ON, Canada, 2Agriculture and Agri-Food Canada, Letthbridge, AB, Canada, 3University of Alberta, Edmonton, AB, Canada.

T325 Effects of different physical processing of corn starter on performance of newborn Holstein dairy calves.
A. Soltani1, G. R. Ghorbani1, B. Omidian1, M. Khorvash1, S. Zaree-Shamsabadi1, H. Beiranvand1, M. Kazemi-Bonchenari1, and M. Mirzaee1, 1Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran, 2Department of Animal Sciences, Arak University, Arak, Iran, 3Department of Animal Sciences, Shahrkord University, Shahrkord, Iran.

T326 Comparison of dairy cattle performance in Nebraska when fed silage and grain produced from second-generation insect protected (B.t.) corn (MON 89034), parental line, or reference corn grown during 2009.
H. A. Paz1, E. Castillo-Lopez1, K. Clark2, T. H. Klusmeyer2, G. F. Hartnell2, and P. J. Kononoff2, 1University of Nebraska-Lincoln, Lincoln, 2Monsanto Company, St. Louis, MO.

T327 Morphology of the omasum of dairy cows fed of high or low grain content diet before parturition.

T328 Enteric methane production from dairy cows fed different silages with and without rapeseed supplementation.
M. Johannes*, A. L. F. Hellwing, P. Lund, M. R. Weisbjerg, and T. Hvelplund, Faculty of Agricultural Sciences, Aarhus University, Denmark.

T329 Particle size and endosperm type of dry ground corn alter apparent ruminal synthesis of B-vitamins in lactating dairy cows.
M. Seck1,2, M. S. Allen1, P. Y. Chouinard1, and C. L. Girard1, 1Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2Department of Animal Science, Michigan State University, East Lansing, 3Département de sciences animales, Université Laval, Quebec, Canada.

T330 Abrupt changes in forage dry matter of one to three days affect intake and milk yield in late lactation dairy cows.
J. Boyd1 and D. R. Mertens2, 1US Dairy Forage Research Center, Madison, WI, 2Mertens Innovation & Research LLC, Belleville, WI.

T331 Effects of adding fibrolytic enzymes to diets containing bermudagrass silage harvested at two maturity stages on the performance of lactating Holstein cattle.
O. C. M. Queiroz1, A. T. Adesogan1, J. L. P. Daniel1, J. J. Romero1, J. H. Shin1, C. R. Staples1, and J. E. P. Santos1, 1University of Florida, Gainesville, 2University of Sao Paulo, Piracicaba, Sao Paulo, Brazil.

T332 Effects of Bacillus subtilis natto on intestinal morphology in pre and postweaning dairy calves.
Y. Sun, J. Q. Wang1, P. Sun, D. P. Bu, G. C. Luan, and H. T. Zhang, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.
Effect of dietary delivery product Force 6 on performances and antioxidant status of high-producing dairy cows.
D. Éclache, P. Etienne, and V. Noirot*, Phodé Laboratories, Terssac, France.

Effects of abomasal infusion of linolenic acid on milk fat synthesis and composition in dairy cows.
U. Moallem*, D. Vyas*, B. B. Teter 1, P. Delmonte 1, and R. A. Erdman 2, 1Agriculture Research Organization, Bet Dagan, Israel, 2University of Maryland, College Park, FDA.

The time of access to temperate pasture influences rumen pH and NH₃-N concentration in heifers.
A. Félix 1, N. Hernández 1, N. Figueredo 1, M. Génova 1, M. Ibarra 1, A. Mendoza 1, M. Aguerre 1, A. Pérez-Ruchel 1, J. L. Repetto 1, and C. Cajarville 2, 1Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay, 2Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay.

Effect of feeding brown midrib corn silage and dried distillers grains with solubles on bacterial diversity in rumen fluid of lactating dairy cows using bacterial tag-encoded FLX amplicon pyrosequencing.

Effect of time of access to temperate pasture influences intake and feeding behavior in heifers.
A. Félix 1, N. Hernández 1, N. Torterolo 1, S. Roja 1, M. Aguerre 1, A. Pérez-Ruchel 1, J. L. Repetto 1, and C. Cajarville 2, 1Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay, 2Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay.

Effect of replacement of conventional corn silage with brown midrib corn silage on behavior and performance of lactating dairy cows.

Evaluation of protein supplementation strategies for low-starch diets fed to lactating dairy cows.
K. W. Cotanch*, S. E. Boucher 1, H. M. Dann 1, C. S. Ballard 1, R. J. Grant 1, and K. Fujita 2, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2ZenNoh National Federation of Agricultural Cooperative Associations, Tokyo, Japan.

Effect of time of access to food on fermentation capacity of rumen fluid in heifers consuming temperate pastures.
N. Hernández 1, A. Félix 1, K. Saavedra 1, K. Rosano 1, A. Pérez-Ruchel 1, M. Aguerre 1, S. Brambillasca 1, C. Cajarville 1, and J. L. Repetto 1, 1Departamento de Bovinos, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay, 2Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Uruguay.

Frequency of feed delivery affects feeding behavior of limit-fed dairy heifers.
A. M. Greter 1, T. F. Duffield 1, B. W. McBride 1, T. M. Widowski 1, and T. J. DeVries**, 1Dept. Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, 2Dept. Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada, 3Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

Effect of feeding brown midrib corn silage and dried distillers grains with solubles on bacterial diversity in rumen fluid of dairy cows using bacterial tag-encoded FLX amplicon pyrosequencing.
H. A. Ramirez Ramirez**, L. O. Tedeschi 1, T. R. Callaway 1, S. E. Dowd 1, K. Nestor 1, and P. J. Kononoff 1, 1University of Nebraska-Lincoln, 2Texas A&M University, College Station, 3Food and Feed Safety Research Unit, USDA-ARS, College Station, TX, 4Medical Biofilm Research Institute and Research Testing Laboratory, Lubbock, TX, 5Dow AgroSciences LLC.


Differential expression of the transcriptome in adipose tissue of first lactation dairy cattle.
J. P. McNamara 1, J. M. Thomson**, and J. Loo 1, 1Washington State University, Pullman, 2University of Alberta, Edmonton, Alberta, Canada, 3University of Illinois, Urbana-Champaign.

The survival of Bacillus subtilis natto in rumen and duodenum of Holstein dairy cows.

Milk fatty acid composition of lactating dairy cows fed short and medium chain fatty acids.

Veal calves deposit nitrogen from solid feed as efficient as nitrogen from milk replacer.
H. Berends**, J. J. G. C. Van den Borne 1, C. G. Van Reenen 1, and W. J. J. Gerrits 1, 1Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Livestock Research, Animal Sciences Group, Lelystad, the Netherlands.

Effect of B2M haplotype combinations on the expression of FcRn mRNA in mammary gland of dairy cows.
X. Hu, J. Wang*, S. Zhao, J. Zhao, and D. Bu, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Effect of feeding Bacillus subtilis natto fermentation production on hindgut fermentation and microbiota of Holstein dairy cows.

Effect of short- and medium-chain fatty acid on milk composition in lactating dairy cows.
T350 Effect of feeding *Bacillus subtilis natto* fermentation production on milk production and composition, blood metabolites and rumen fermentation in early lactation dairy cows.
H. Peng1, J. Q. Wang*1, H. Y. Kang1,2, S. H. Dong1,3, P. Sun1, D. P. Bu1, and L. Y. Zhou1, 1Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2College of Animal Science and technology, Southwest University, Chongqing, China, 3Faculty of Animal Sciences and Technology, Gansu Agricultural University, Lanzhou, China.

T351 Fermentative and nutritional dynamics of bovine colostrum silage for dairy calves liquid feeding.
L. S. Ferreira1,2, M. C. Soares1, M. P. C. Gallo1, M. R. Paula1,3, and C. M. M. Bittar*1,2, 1University of São Paulo/ESALQ, Piracicaba, SP, Brazil, 2Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brasilia, DF, Brazil.

T352 Performance of dairy calves fed “colostrum silage” or milk replacer.
L. S. Ferreira1,2, J. T. Silva1, G. G. O. Nápoles1, C. E. Oltramari1, and C. M. M. Bittar*1,2, 1University of São Paulo/ESALQ, Piracicaba, SP, Brazil, 2Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brasilia, DF, Brazil.

T353 In situ dry matter degradation kinetics of fennel forage in Holstein cow.
M. Chaji*, T. Mohammadabadi, and H. Eghbali, Khuzestan Ramin Agricultural and Natural Resources University, Molassani, Khuzestan, Iran.

T354 The effect of exogenous phytase on ruminal degradation of inositol phosphate in dairy cows.
J. Sehested*, 1, D. N. Braks-Pedersen*, V. Gilsøe, L. K. Skov1,2, and P. Lund1, 1Department of Animal Health and Bioscience, Aarhus University, Tjele, Denmark, 2Department of Feed Applications, Novozymes A/S, Bagsværd, Denmark.

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**Ruminant Nutrition**

Ruminal Metabolism

T355 Effect of sample processing on in situ organic matter degradability of distillers grains.
M. L. Drewery*1, J. E. Sawyer1, N. M. Kenney1, W. E. Pinchak1, and T. A. Wickersham1, 1Texas A&M University, College Station, 2Texas Agrilife Research, Vernon.

T356 Effect of tannins on in vitro ruminal degradability of purple prairie clover (*Petalostemon purpureum*) harvested at the two growth stages.
L. Jin1,2,3, Z. Xu1, A. D. Iwaasa3, Y. G. Zhang3, M. P. Schellenberg3, T. A. McAllister1, and Y. Wang1, 1Agriculture and Ag-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 2Department of Animal Science, Northeast Agricultural University, China, 3SPARC-AAFC, Swift Current, SK, Canada.

T357 Effect of exogenous fibrolytic enzymes on dry matter in situ digestibility of two *Brachiaria* grasses.

T358 Method evaluation for determining digestibility of rumen undegraded amino acids in blood meal.
S. E. Boucher1,2, S. Calsamiglia1, M. D. Stern1, C. M. Parsons1, H. H. Stein1, C. G. Schwab1, K. W. Cotanch1, J. W. Darrah1, and J. K. Bernard1, 1Kemin AgriFoods North America Inc., Des Moines, IA, 2Universitat Autònoma de Barcelona, Bellaterra, Spain, 3University of Minnesota, St. Paul, 4University of Illinois, Urbana, 5Schwab Consulting LLC, Boscobel, WI, 6William H. Miner Agricultural Research Institute, Chazy, NY, 7University of Georgia, Tifton.

T359 In vitro modification of ruminal and post ruminal metabolism by lignosulfonate and polysaccharide protected microminerals.
M. Ruiz-Moreno*1, E. Seitz1, M. D. Stern1, and J. Garrett1, 1University of Minnesota, St. Paul, 2Quali Tech Inc., Chaska, MN.

T360 Factors affecting estimation of spoilage indices in silage 2: Effects of amount of silage evaluated and type of container.
N. Cavalcanti1, 1, J. Leite1,2, L. G. Paranhos*1, O. C. M. Queiroz1, K. G. Arríola1, and A. T. Adesogan1, 1University of Florida, Gainesville, 2Federal University of Pernambuco, Recife, Pernambuco, Brazil.

T361 Infusion of marker solution into intact digesta for measurement of the ruminal clearance of volatile fatty acids.

T362 Adjustment of in vitro rumen fermentation protocol for testing products based on rumen pH regulation and the impact of Acid Buf.
S. Taylor*1, E. Pennala1, and J. Apajalahti1, 1Celtic Sea Minerals Ltd., Cork, Ireland, 2Alimetrics Ltd., Espoo, Finland.

T363 Impact of different sources of hydrolysable and condensed tannins on rumen fermentation and methane production in vitro.
F. Hassanat* and C. Benchaar, Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.
Changes in ruminal bacterial community composition following feeding of silage inoculated with a commercial silage inoculant.
R. Mohammed1,2, D. M. Stevenson3, K. A. Beauchemin3, P. J. Weimer1, and R. E. Muck1, USDA-ARS, Madison, WI, AAFC, Lethbridge, AB, Canada.

Effect of a dietary antioxidant with different substrate on rumen fermentation in vitro.
Y. Wang1,2, J. Wang3, M. Vazquez-Anón4, H. Cao5, G. Zanton6, and J. Liu7, Institute of Dairy Science, Zhejiang University, Hangzhou, P. R. China, Novus International Inc., St. Louis, MO.

Effect of dietary roughage and sulfur concentration on hydrogen sulfide production from corn-based diets containing dried distillers grains.

Effects of hops on rumen fermentation and bacterial populations using the rumen simulation technique.
N. Narvaez-K*, Y. Wang1, Z. Xu1, T. Alexander2, S. Garden1, and T. McAllister1, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, John I. Haas Inc., Washington DC.

Effect of nitrate, sulfate, monensin, and corn gluten feed on in vitro ruminal methane production.
C. Davis*, S. Ghimire*, T. Wiles3, Z. Wen1, M. A. McCann1, and M. D. Hanigan1, Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, Department of Biological Systems Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg.

Effects of microwave irradiation on ruminal dry matter degradability of canola and corn gluten meal.
M. Dehghan-Banadaky1, H. Khalilvandi-Behroozyar1,2, H. R. Khazanehi2, and N. Vahdani1, Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, Department of Animal Science, University of Urmia, Urmia, West Azerbaijan, Iran, Department of Animal Science, University of Manitoba, Manitoba, Canada.

Evaluation of two protein hydrolyzates as a source of soluble protein to foster ruminal microbial growth.
A. Aris1, A. Serrano1, F. Fabregas2, J. Polo2, C. Rodriguez2, and A. Bach1,2, Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA), Caldes de Montbui, Barcelona, Spain, Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain, APC EUROPE, S.A. R&D department, Granollers, Barcelona, Spain.

Effects of protein protection with orthophosphoric or malic acid and heat in lamb fattening diets.

Identification of several novel fungal species in feed samples from the southeast United States.
J. D. Chapman*, Y. Q. Wang1, and N. E. Forsberg1, OmniGen Research, Corvallis, OR, Prince Agri Products, Quincy, IL.

Evaluating the inclusion of Met and Lys to mechanically extracted soybean meal with soy gums on the ruminally-undergraded Met and Lys content.
C. A. Macgregor*, L. O. Tedeschi, and T. K. Miller-Webster1, Grain States Saya Inc., West Point, NE, Texas A&M University, College Station, West Virginia University, Morgantown.

Effect of ghrelin on bovine myogenic differentiation.
D. Montoya-Flores1,2, O. Mora1, E. Tamari2, L. González-Dávalos1, A. González-Gallardo1, A. Antaramian1, A. Shimada1, A. Varela-Echavarría1, and J. L. Romano-Muñoz2, Universidad Nacional Autónoma de México, Querétaro, Querétaro, México, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Colón, Querétaro, México.

Essential oil and rumensin affect ruminal fermentation in continuous culture.
D. Ye*, S. K. R. Karnati, J. L. Firkins1, M. L. Eastridge1, and J. M. Aldrich1, Ohio State University, Columbus, Provimi-North America, Lewisburg, OH.

Energy value of co-products of bioethanol production: comparison between triticale grain and triticale DDGS.
B. Liu and P. Yu*, University of Saskatchewan, Saskatoon, Canada.

Molecular spectral features of functional groups mainly associated with lipid biopolymer in co-products (DDGS) from bioethanol production.
P. Yu* and D. Damiran, University of Saskatchewan, Saskatoon, Canada.

Ruminant Nutrition
Small Ruminant

Sheep performance on sorghum or sorghum-soybean silage diets.
A. A. Melin1 and H. M. Arelovich*, Coronel Suarez-Pasman Experimental Station, Departamento de Agronomía-CIC-CERZOS.
Small Ruminant Health, Growth, Extension, and Dairy

T384 Selected condensed tannin-containing plant extracts and their effects on *Haemonchus contortus* larvae.
K. J. Stutts*, M. J. Thomas, M. M. Beverly, R. A. Lane, and S. F. Kelley, Sam Houston State University, Huntsville, TX.

T385 Effect of subclinical mastitis and stage of lactation on somatic cell count, composition and plasmatic activity of goat milk.
R. Shangguan, L. I. Villalba, J. J. Villalba, J. R. Picharraguerre, ICREA and Ruminant Production-IRTA, Barcelona, Spain, Utah State University, Logan, Lucto, S.A., Barcelona, Spain.

T386 Hematological and spermatological evaluations of Honamli goat in Turkey.
M. S. Gulay, A. Ata, O. Elmaş, M. Saatçılı, N. Mamak, B. Dag, and A. H. Aktaş, Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Burdur, Turkey, Selcuk University, Faculty of Agriculture, Department of Animal Science, Konya, Turkey, Bahri Dagtas Uluslararası Hayvaciilik Arastirma Enstitusu, Konya, Turkey.

T387 Managing seasonal outbreak of foot rot in sheep flocks.
T. Wuliji* and C. Clifford-Rather, Lincoln University, Jefferson City, MO.

T388 Comparison of nematode parasite-susceptibility and performance of Boer and Spanish goats supplemented with garlic.

T389 Effect of sericea lespedeza (*Lespedeza cuneata*) leaf meal pellets fed to gastrointestinal nematode infected goats.

T390 Influence of type of pasture and transport stress on microbial loads in meat goats.
A. Mechinineni, S. Gujja, D. S. Kommuru, T. H. Terrill, G. Kannan*, B. Kouakou, and J. H. Lee, Fort Valley State University, Fort Valley, GA.

T391 Gastro-intestinal parasitic infestation in meat goats and its relationships with production traits under a pasture-based performance test in Western Maryland.
K. Nadarajah, S. Schoenian, D. L. Kuhlers, M. D. Carpenter, and D. Rankins, Auburn University, Auburn, AL, University of Maryland Extension, Keedysville.

T392 Gastro-intestinal parasitic infestation and its relationships with growth performance in meat goats on pasture with supplemental grain feeding test at the Kerr Center in Oklahoma.
K. Nadarajah, M. Penick, D. L. Kuhlers, M. D. Carpenter, and D. Rankins, Auburn University, Auburn, AL, Kerr Center, Poteau, OK.

T393 Lamb immune status (blood IgG, IgM and chitotriosidase activity) during weaning, preliminary results.
Comparison of FAMACHA scores and need for deworming in hair sheep and meat goats grazed together or sheep grazed alone.

Lack of an effect of pelletized diets containing pumpkin seeds on gastrointestinal nematode fecal egg counts in goats.
M. Gooden*, E. N. Escober†, N. C. Whitley‡, D. J. Jackson-O’Brien§, and H. Taylor¶, 1University of Maryland Eastern Shore, Princess Anne, 2North Carolina A&T State University, Greensboro, 3Delaware State University, Dover.

Comparative efficacies of alternative anthelmintics against natural nematode infection in grazing goats.
P. B. Collyer* and E. G. Brown, Stephen F. Austin State University, Nacogdoches, TX.

Effects of immunomodulatory substances added to milk replacer on white blood cell populations during weaning.
S. Paez Lama, A. Morales-delaNuez, V. Mendoza-Grimon, L. E. Hernandez-Castellano, D. Sanchez-Macias, N. Castro, and A. Arguello*, Universidad de Las Palmas de Gran Canaria, Arucas, Las Palmas, Spain.

Goat browsing for invasive shrub and internal parasite control.
J. C. Warren*, D. J. O’Brien†, C. Heckschert‡, R. Beaman‡, and N. C. WhitleyⅢ, 1Delaware State University, Dover, 2Delaware Department of Transportation, Dover, 3North Carolina A&T State University, Greensboro.

Gastrointestinal nematode (GIN) resistance and GIN management on small ruminant farms in the mid-Atlantic U.S.
D. J. O’BrienⅠ, K. K. CrookⅡ, E. K. CrookⅡ, N. C. WhitleyⅢ, B. StoreyⅣ, S. HowellⅣ, and R. KaplanⅤ, 1Delaware State University, Dover, 2Virginia Maryland Regional College of Veterinary Medicine, Blackburg, 3North Carolina A & T State University, Greensboro, 4University of Georgia, Athens.

Effects of supplemental dried distillers grains on performance and internal parasites of grazing lambs.
C. L. Pickworth*, T. L. Felix†, I. Susin‡, L. M. ShoupⅢ, and S. C. LoerchⅣ, 1The Ohio State University, Wooster, 2Universidade de São Paulo, Piracicaba, São Paulo, Brazil.

Feeding North American panicled tick-clover containing condensed tannins to growing goats reduces Haemonchus contortus infection.
N. M. Cherry*, B. D. Lambert*Ⅰ, J. J. Miller*Ⅰ, M. BullingerⅠ, J. E. MillerⅡ, R. M. KaplanⅢ, and T. R. WhitneyⅣ, 1Texas Agrilife Research, Stephenville, 2Tarleton State University, Stephenville, TX, 3Louisiana State University, Baton Rouge, 4The University of Georgia, Athens, 5Texas Agrilife Research, San Angelo.

Demographic factors of meat goat producers completing an online certification program.
T. A. Gipson*, R. C. Merkel, and T. Sahlu, American Institute for Goat Research, Langston Univ., Langston, OK.

Variability among enumerators in assigning body condition scores in meat goats.
R. C. Merkel* and T. A. Gipson, Langston University, Langston, OK.

Comparative effect of implants with trenbolone-estradiol or zeranol on feedlot-performance of Katahdin × Pelibuey hair-lambs.
B. Ortiz*, A. Camacho†, N. E. Villalba†, L. R. Flores‡, J. J. Lomeli‡, J. A. Romo§, and R. Barajas†, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Agricola Ganadera Mojolo, Culiacán, Sinaloa, México.

Influence of zeranol implant on performance of Dorper × Katahdin feedlot lambs.
B. Ortiz*, A. Camacho†, N. E. Villalba†, L. R. Flores‡, J. J. Lomeli‡, J. A. Romo§, and R. Barajas†, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Agricola Ganadera Mojolo, Culiacán, Sinaloa, México.

Seasonal changes in chemical composition of Hungarian raw goat’s milk.
L. Varga*, Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary, Masonmagyaróvar, Hungary.

Examination of microbiological and physicochemical quality of raw materials and end products during manufacture of cheeses from caprine and ovine milk.
L. Varga*, Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary, Masonmagyaróvar, Hungary.

Milk yield and milk composition of ewes fed diets with canola oil or linseed oil.

The mammary gland of the Canarian dairy goats undergone two different milking frequencies: morphological characterization of the tissular components.
A. Suarez-Trujillo*, J. Capote†, A. Arguello‡, A. ArencibiaⅢ, N. CastroⅣ, J. MoralesⅤ, and M. A. Rivero*, 1Universidad de Las Palmas de Gran Canaria, Arucas, Las Palmas, Spain, 2Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.
Swine Species
Sponsor: JBS United

Effects of Actigen on peripheral blood immune cells in pigs experimentally infected with porcine reproductive and respiratory syndrome virus (PRRSV).
T. M. Che*, M. Song1, R. W. Johnson1, K. W. Kelley1, W. G. Van Alstine1, K. A. Dawson1, and J. E. Pettigrew1, 1Department of Animal Sciences, University of Illinois, Urbana, 2Animal Disease and Diagnostic Laboratory, Purdue University, West Lafayette, IN, 3Research, Alltech Biotechnology Center, Nicholasville, KY.

Effects of dietary multi-carbohydrases on growth performance, nutrient digestibility and blood characteristics in finishing pigs.
J. P. Wang*, Y. X. Guo, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

Effects of a natural feed additive in comparison to an antibiotic treated group to prevent gram-negative associated diseases in pigs.
S. Schaumberger*-1, S. Masching2, A. Ganner3, and G. Schatzmayr4, 1Biomin Research Center, Tulln, Austria, 2Biomin Holding, Herzogenburg, Austria.

Effects of feeding Actigen on ex vivo immune responses of porcine leukocytes.
T. M. Che*, R. W. Johnson1, K. W. Kelley1, K. A. Dawson1, and J. E. Pettigrew1, 1Department of Animal Sciences, University of Illinois, Urbana, 2Research, Alltech Biotechnology Center, Nicholasville, KY.

Effects of multiple sources and levels of dietary fiber on apparent total tract dry matter digestibility, growth performance, and concentration of fermentation indices in pigs.
A. Woldeghbriel, S. Smith*, T. Barrios, and B. Bishop, North Carolina Agriculture and Technical State University, Greensboro.

Addition of bee pollen to the sow feed and effects on body weight of piglets.

Effects of thermal stress on liver xenobiotic metabolism gene expression in swine.

Effect of sex and housing density on growth performance, carcass quality, and fatty acid profile of pigs slaughtered at 110 kg BW.
J. I. Morales1, M. P. Serrano1, L. Cámara1, J. D. Berrocoso1, C. J. López-Bote1, J. P. López2, and G. G. Mateos*1, 1Universidad Politécnica de Madrid, Madrid, Spain, 2Universidad Complutense de Madrid, Madrid, Spain, 3Copiso S.A., Soria, Spain.

Productive performance and carcass quality of gilts and surgically and immune-castrated male pigs from crossbreds of Duroc and Pietrain sire lines.
J. I. Morales1, M. P. Serrano1, L. Cámara1, J. D. Berrocoso1, J. P. López2, and G. G. Mateos*1, 1Universidad Politécnica de Madrid, Madrid, Spain, 3Copiso S.A., Soria, Spain.

Fatty acid composition of piglet tissues changes during suckling time.

Teaching/Undergraduate and Graduate Education

Opinions of farm versus urban freshman college students on issues involving animal agriculture before and after animal science instruction.

Connecting lecture to the real world in animal sciences.

Enhancing the pool of underrepresented minorities in veterinary medicine.
O. U. Bolden-Tiller*, Tuskegee University, Tuskegee Institute, AL.

Comparison of multiple choice and short essay assessment vehicles on student performance in an upper division animal reproduction course.
L. J. Spicer* and M. E. Payton, Oklahoma State University, Stillwater.

Variables that affect academic performance in undergraduate animal science courses.
M. M. Beverly, K. J. Stutts, and S. F. Kelley*, Sam Houston State University, Huntsville, TX.

CyberSheep: Improving student understanding of animal breeding concepts with a virtual sheep flock.
Academic preferences of freshman college students in the Department of Animal Industry of the University of Puerto Rico at Mayagüez.

Impact of duration of an online animal science nutrition course on student learning assessments.
K. D. Ange-van Heugten* and A. Renjifo McComb, North Carolina State University, Raleigh.

Effectiveness of a university introductory course in developing student confidence in horse handling and riding.
M. Nicodemus*, Mississippi State University, Mississippi State.
SYMPOSIA AND ORAL SESSIONS

Danisco International Dairy Science Award Lecture
Chair: Jim Moran, Kraft Foods
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9:30 AM  Introduction
9:40 AM  Danisco International Dairy Science Award Lecture: Exploring bacterial life in cheese . . . the “in situ.”
S. Lortal, INRA Technologie du lait et de l’oeuf, Rennes Cedex, France.

Animal Behavior and Well-Being 2
Chair: Marcia Endres, Department of Animal Science, University of Minnesota
Sponsor: ASAS Foundation
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9:30 AM  304  ASAS Early Career Award Presentation: Working to foster the discovery, sharing, and application of knowledge concerning the well-being of farm animals.
A. Johnson*, Iowa State University, Ames.

9:40 AM  305  The effect of reactive state on the physiology of dairy cows milked in a novel environment.

10:00 AM  306  The effect of reactive state and training on the behaviour and milk production of heifers during the first week of lactation.

10:15 AM  307  Effect of frequency of feed delivery on the behavioral patterns of dairy cows milked in an automatic system.
J. A. Deming*, R. Bergeron, K. E. Leslie, and T. J. Devries, Dept. Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada; Dept. Animal and Poultry Science, University of Guelph, Campus d’Alfred, Alfred, ON, Canada; Dept. Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada.

10:30 AM  308  Effect of yearly climate on milk yield in a sub-tropical environment.
J. C. Lees* and J. B. Gaughan, The University of Queensland, Gatton, Queensland, Australia.

10:45 AM  309  Evaluation of two different cooling systems on a Sicilian dairy farm: Physiological parameters and milk aroma.
R. Ben Younes, G. Azzaro, I. Schad, G. Belvedere, M. Caccamo, R. Petriglieri, G. Licitra, and S. Carpino*, INAT, Tunis, Tunisia; CoRFiLaC, Regione Siciliana, Ragusa, Italy; DISPA, Catania University, Catania, Italy.

11:00 AM  310  Assessment of a web camera to evaluate farm management and cow behavior.
G. Licitra, G. Azzaro, R. Petriglieri, M. Caccamo, and J. D. Ferguson*, CoRFiLaC, Regione Siciliana, Ragusa, Italy; DISPA, Catania University, Catania, Italy; University of Pennsylvania, PA.

11:15 AM  311  Novel techniques for anesthesia during disbudding of calves.
K. R. Tapper*, J. P. Goff, B. L. Leuschen, J. K. West, and S. T. Millman, Iowa State University Department of Biomedical Sciences, Ames, Iowa State University Veterinary Diagnostic and Production Animal Medicine, Ames.

11:30 AM  312  The effect of pain relief on the physiology and behavior of calves after castration and/or dehorning.
M. A. Sutherland*, B. L. Davis*, T. A. Brooks*, and M. A. Ballou, Texas Tech University, Animal and Food Sciences Department, Lubbock, AgResearch Ltd., Animal Behaviour and Welfare Group, Hamilton, New Zealand.

11:45 AM  313  Physiological and immunological effects of surgical castration and amputation dehorning and the influence of anesthetics and analgesics in Holstein calves.
M. A. Ballou*, M. A. Sutherland, B. L. Davis, T. A. Brooks, C. J. Cobb, and L. E. Hulbert, Department of Animal and Food Sciences, Texas Tech University, Lubbock, Animal Behavior and Welfare Group, AgResearch, Hamilton, New Zealand; Department of Animal Science, University of California at Davis, Davis.

12:00 PM  314  Effects of pair housing versus limited social contact on the response of dairy calves to separation.
L. R. Duve*, M. B. Jensen, and D. M. Weary, University of Aarhus, Tjele, Denmark; University of British Columbia, Vancouver, British Columbia, Canada.

12:15 PM  315  Lameness, leg injuries and lying times on 122 North American freestall farms.
Animal Health Symposium

Viral Swine Diseases: Prevalence, Prevention, and Their Impact on Production
Chair: Ty Schmidt, Mississippi State University
Sponsors: Elanco Animal Health, JBS United, Pfizer Animal Health

9:30 AM  Swine hepatitis E virus: Zoonosis and pork safety.
X. J. Meng, Virginia Tech, Blacksburg.

10:15 AM  Porcine Circovirus: Update on understanding of the pathogenesis, transmission, impact and best practices for control.
T. Opriessnig, Iowa State University, Ames.

11:00 AM  New technologies for the control and elimination of porcine reproductive and respiratory syndrome.
R. R. Rowland, Kansas State University, Manhattan.

11:45 AM  Influenza A Viruses in Swine – An Update on Surveillance and Research.
M. Gramer, University of Minnesota, Saint Paul.

ARPAS Symposium

Understanding Meta-Analysis
Chair: John Wagner, Colorado State University
Sponsor: ARPAS

9:30 AM  Introduction

9:40 AM  Unsophisticated “cowboy” methods used traditionally to merge results from multiple experiments.
F. N. Owens* and A. Hassan, Pioneer Hi-Bred Int’l, Johnston, IA.

10:10 AM  Meta-analysis: The good, the bad and the ugly.
I. J. Lean* and A. R. Rabiee, SBScibus, Camden, NSW, Australia.

10:40 AM  Panel Discussion

Beef Species

Beef Production
Chair: Andy Herring, Texas A&M University

9:30 AM  Relationship between postweaning RFI in heifers and intake and productivity of mid-gestation beef females.
A. N. Hafla*, G. E. Carstens¹, T. D. A. Forbes², J. C. Bailey³, J. T. Walter⁴, J. W. Holloway⁵, and J. G. Moreno⁶, ¹Texas A&M University, College Station, ²Texas AgriLife Research, Uvalde.

9:45 AM  Using a mechanistic nutrition model to identify efficient beef cows under grazing conditions.
B. M. Bourg*, L. O. Tedeschi¹, A. D. Aguilar², F. R. B. Ribeiro², J. Genho², R. R. Gomez⁵, D. Delaney⁴, and S. Moore⁴, ¹Texas A&M University, College Station, ²Texas A&M University, Commerce, ³Eldon Farms, Woodville, VA, ⁴King Ranch, Kingsville, TX, ⁵University of Florida, Gainesville.

10:00 AM  Relationship among lifetime measures of body weight and frame size in beef cows.
A. C. Echols*, D. A. Fiske, M. L. Wahlberg, and S. P. Greiner, Virginia Polytechnic Institute and State University, Blacksburg.

10:15 AM  A mineral survey of Louisiana beef cow/calf production systems.
J. Rowntree*, K. Guidry¹, G. Scaglia³, G. Gentry², and L. Southern², ¹Michigan State University, East Lansing, ²LSU Agricultural Center, Baton Rouge, LA.

10:30 AM  Finishing steers and bulls with high-vitamin E diets: Effect on pH and tenderness of beef.
C. Reyes, C. Fuentes, and R. E. Larrain*, Pontificia Universidad Catolica de Chile, Santiago, Chile.
Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, Unit, USDA-ARS Lubbock, TX Station

T. R. Troxel*
The relationship between climatic conditions and the incidence of calving.

T. R. Troxel* and B. L. Barham, University of Arkansas, Department of Animal Science, Little Rock.

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9:00 AM 328
8:15 AM 327
7:30 AM 326
6:45 AM 325
6:00 AM 324

Breeding and Genetics
Genomic Selection and Whole-Genome Association II
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS-USDA, Beltsville, MD
298-299

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Use of the Illumina Bovine3K BEAD chip in dairy genomic evaluation.
G. R. Wiggans1, T. A. Cooper2*, K. M. Olson2, and P. M. VanRaden1, 1Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2National Association of Animal Breeders, Columbia, MO.

Properties of different density genotypes used in dairy cattle evaluation.
P. M. VanRaden1, M. E. Tooker1, K. M. Olson2, T. A. Cooper2, G. R. Wiggans1, and C. P. Van Tassell2, 1Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2National Association of Animal Breeders, Columbia, MO, Bovine Functional Genomics Laboratory, ARS, USDA, Beltsville, MD.

Use of the partial least-squares regression to impute missing markers when some animals are genotyped with low-density SNP platforms.
C. Dimauro1*, S. Sorbolini1, E. Pintus1, J. T. van Kaam1, and N. P. P. Macciotta1, 1Università di Sassari, Sassari, Italy, 2Associazione Nazionale Allevatori Frisona Italiana, Cremona, Italy.

Reduced dimensionality in GS models through Lassoed supervised principal components.
C. Maltecca* and K. A. Gray, North Carolina State University, Raleigh.

FImpute - An efficient imputation algorithm for dairy cattle populations.
M. Sargolzaei1,2, J. P. Chesnais1, and F. S. Schenkel1, 1Alliance Boviteq, Saint-Hyacinthe, QC, Canada, 2University of Guelph, Guelph, ON, Canada.

Estimation of linkage disequilibrium in four US pig breeds.
Y. M. Badke1, R. O. Bates2, C. W. Ernst1, C. Schwab2, and J. P. Steibel1, 1Department of Animal Science, Michigan State University, East Lansing, 2National Swine Registry, West Lafayette, IN.

A major QTL for response to porcine reproductive and respiratory syndrome virus in pigs.
N. Boddicker1*, D. I. Garrick1, J. M. Reecy2, R. Rowland1, M. F. Rothschild1, J. P. Steibel1, J. K. Lunney1, and J. C. M. Dekkers1, 1Iowa State University, Ames, 2Kansas State University, Manhattan, 3Michigan State University, East Lansing, 4United States Department of Agriculture, Beltsville, MD.

Use of sample pooling in a genome-wide association study identifies chromosomal regions affecting incidence of bovine respiratory disease.
Genetic analysis of dry matter intake in Holstein cows.

Genetic markers in bovine chromosome 14 are significant for residual feed intake in steers.

QTL-by-feeding period interaction for residual feed intake in crossbred steers: a genome selection approach.
O. N. Durunna*, D. J. Nkumah2, S. S. Moore1, and Z. Wang3, 1University of Alberta, Edmonton, Alberta, Canada, 2Pfizer Animal Genetics, Kalamazoo, MI.

Identification of genomic markers for feed efficiency in purebred Simmental, Angus and crossbred steers.
N. V. L. Serão*, A. D. Markey1, M. Pérez-Enciso2, D. B. Faulkner1, and S. L. Rodríguez-Zas1, 1University of Illinois at Urbana-Champaign, Urbana, 2Universitat Autònoma de Barcelona, Barcelona, Catalonia, Spain.

Prediction of genomic estimated breeding values for temperament at weaning in Bos indicus crossbreds using Bayesian Inference.
L. L. Hulsman*, S. O. Peters2, J. O. Sanders1, A. D. Herring1, C. A. Gill1, and D. G. Riley1, 1Department of Animal Science, Texas A&M University, College Station, 2Department of Animal and Range Sciences, New Mexico State University, Las Cruces.

Companion Animals Symposium
Promoting Companion Animal Biology and Research in Animal Sciences
Chair: Cheryl L. Morris, Omaha’s Henry Doorly Zoo
Sponsors: Hill’s Science Diet, Nestlé Purina, Proctor and Gamble

9:30 AM 342 Reaching out: Opportunities for developing companion animal biology.
C. L. Morris*, Omaha’s Henry Doorly Zoo, Omaha, NE.

9:35 AM 343 Wants and needs: What students want may not be what the current comparative animal industry needs.
K. D. Ange-van Heugten*, North Carolina State University, Raleigh.

10:10 AM 344 Cat and mouse: Utilizing technology and science to reach students.
N. A. Dreschel*, Pennsylvania State University, University Park.

10:45 AM 345 Research and outreach: Blending the basic and the applied.
L. K. Karr-Lilienthal*, University of Nebraska-Lincoln, Lincoln.

11:20 AM 346 Biodiversity is life: Teaching conservation biology with zoos and aquariums.
R. L. Krisher*, National Foundation for Fertility Research, Lone Tree, CO.

11:55 AM 347 The future of companion animal biology in academics.
A. Fischer*, University of Illinois, Urbana.

Contemporary and Emerging Issues Symposium
Emerging Animal Welfare Issues
Chair: Temple Grandin, Colorado State University
Sponsor: Elanco Animal Health, Monsanto Co.

9:30 AM 348 Does high production increase the occurrence of health problems in dairy cows?
K. D. Vogel*, Department of Food and Animal Science, University of Wisconsin-River Falls, River Falls.

10:00 AM 349 Potential solutions for reducing lameness in dairy cows.
N. Cook*, University of Wisconsin, Madison.

10:30 AM 350 The national shortage of food animal veterinarians: What’s being done to address the issue?
D. G. Bristol*, North Carolina State University, Raleigh.
11:00 AM 351 Animal welfare issues: Organic and conventional. W. K. Fulwider*, Crop Cooperative, LaFarge, WI.

11:30 AM 352 Consequence of changing standards for somatic cell count on US Dairy Herd Improvement herds. H. D. Norman*, J. R. Wright, and R. H. Miller, Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD.


12:00 PM 354 Latinos and animal agriculture. S. Archibeque-Engle* and I. N. Roman-Muniz, Colorado State University, Fort Collins.

12:15 PM 355 Effect of live yeast supplementation on milk production and health status of lactating camels (Camelus dromedarius). P. Nagy*, E. Chevaux1, M. Khettou1, O. Marko2, S. Thomas2, U. Wermery2, and J. Juhasz2, 1Industries for Camel Milk and Products, Dubai, United Arab Emirates, 2Central Veterinary Research Institute, Dubai, United Arab Emirates, 3Lallemand SAS, Toulouse, France.

12:30 PM 356 Why people become vegetarian and/or vegan: Results of a survey of US self-identified vegans. S. D. Lukefahr*, R. A. Cheeke2, and P. R. Cheeke3, 1Texas A&M University-Kingsville, 2Corvallis, OR, 3Oregon State University, Corvallis.

Food Safety
Chair: Susan K. Duckett, Clemson University
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10:00 AM 359 Detection of major serotypes of Shiga-toxin producing E. coli in bovine feces by multiplex PCR. Z. Paddock*, X. Shi, T. G. Nagaraja, and J. Bai, Detection of major serotypes of Shiga-toxin producing E. coli in bovine feces by multiplex PCR.

10:15 AM 360 Microbial contamination rates and antimicrobial resistance patterns in “no antibiotics added” labeled chicken products. J. Zhang1, A. Massow2, M. M. Stanley1, M. Papariella1, X. Chen1, B. Kraft1, and P. D. Ebner3, 1Purdue University Department of Animal Sciences, West Lafayette, IN, 2Purdue University College of Veterinary Medicine, West Lafayette, IN, 3University of Illinois at Urbana-Champaign Department of Animal Sciences, Urbana-Champaign.


11:15 AM 364 Bulk milk somatic cell penalties in herds enrolled in dairy herd improvement programs. K. J. Hand*, A. Godkin1, and D. F. Kelton1, 1Strategic Solutions Group, Puslinch, ON, Canada, 2Ontario Ministry of Agriculture, Food and Rural Affairs, Elora, ON, Canada, 3University of Guelph, Guelph, ON, Canada.

11:30 AM 365 A novel analysis strategy of detection hydrolysate protein adulteration in milk. Z. Chen1, and D. M. Barbano*, 1Analysis and Testing Center, Shandong University of Technology, Zibo, Shandong Province, PRC, 2Department of Food Science, Cornell University, Ithaca, NY.
Lactation Biology 1
Chair: Mike Van Amburgh, Cornell University

9:30 AM 366 Identification of a short isoform of the porcine prolactin receptor and its variants. J. F. Trott*, A. Schennink, and R. C. Hovey, University of California, Davis.

9:45 AM 367 Comparative transcriptome analysis of laser microdissected cells from bovine mammary gland. K. M. Daniels*, R. K. Choudhary, C. M. Evock-Clover, R. W. Li, W. Garrett, and A. V. Capuco, The Ohio State University, Wooster, University of Maryland, College Park, USDA-ARS, Beltsville, MD.


10:15 AM 369 Ontogeny of nuclear and cytoplasmic myoepithelial markers during prepubertal bovine mammary development. S. Safayi*, N. Korn, A. Bertram, R. M. Akers, A. V. Capuco, S. L. Pratt, S. Calcatera, C. Klein, and S. Ellis, Clemson University, Clemson, SC, Virginia Polytechnic Institute and State University, Blacksburg, USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD.

10:45 AM Break

11:15 AM 371 Lactogenic hormones and IGF-I do not regulate glucose transporter gene expression in the bovine mammary gland during the transition period. Y. Shao*, E. Wall, Y. Misra, X. Qian, R. Blauwiekel, T. McFadden, and F.-Q. Zhao, Laboratory of Lactation Physiology, Department of Animal Science, University of Vermont, Burlington, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.


11:45 AM 373 Intravenous supplementation of acetate, glucose or essential amino acids to an energy and protein deficient diet in lactating dairy goats: effects on milk production and mammary nutrient extraction. S. Safayi, N. Korn, A. Bertram, R. M. Akers, A. V. Capuco, S. L. Pratt, and S. Ellis, Clemson University, Clemson, SC, Virginia Polytechnic Institute and State University, Blacksburg, USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD.

12:00 PM 374 Expression profiles of microRNAs from non- and lactating bovine mammary glands. Z. Li, H. Y. Liu, and J. X. Liu, Institute of Dairy Science, College of Animal Sciences, Hangzhou, P.R. China, Key Laboratory of Molecular Animal Nutrition, Hangzhou, P.R. China.


Meat Science and Muscle Biology Symposium
Meat in the Diet
Chair: Kasey Carlin, North Dakota State University


10:00 AM 376 Meat lipids in human health. S. McNeill*, National Cattlemen’s Beef Association, Centennial, CO.

11:00 AM 378 Nitrite and nitrate in health and disease: A paradigm shift.
N. S. Bryan*, Institute of Molecular Medicine, UT Health Science Center, Houston, TX.

Milk Protein and Enzymes Symposium

Milk Proteins and Peptides: Bioactivity and Digestion
Chair: Rafael Jimenez-Flores, California Polytechnic State University
Sponsor: EAAP

9:30 AM 379 Structural bases for the nutritional and biological properties of the caseins.
H. M. Farrell*1, E. L. Malin1, E. M. Brown1, and A. Mora-Gutierrez1, 1USDA, ERRC, Dairy and Functional Foods RU, Wyndmoor, PA, 2USDA, ERRC, Biobased and Other Animal Coproducts RU, Wyndmoor, PA, 3Cooperative Agricultural Research Center, Prairie View A&M University, Prairie View, TX.

10:00 AM 380 Digestibility of whey protein aggregates and fibrils under simulated gastro-intestinal environments.
H. Singh*, M. Peram, S. Loveday, B. Libby, and Y. Aiqain, Riddet Institute, Massey University, Palmerston North, New Zealand.

10:30 AM 381 Peptides derived from whey protein: Endothelium and vascular bioactive function.
E. D. Bastian* and L. W. Ward, Glanbia Nutritionals Inc., Twin Falls, ID.

11:00 AM 382 The structure of dairy products modifies the kinetics of protein hydrolysis and the release of bioactive peptides in the gut during digestion.
D. Dupont*1,2, K. Bouzerzour1,2, F. Barbe1,2, Y. Le Gouar1,2, and O. Menard1,2, 1National Institute for Agricultural Research, Rennes, France, 2Agrocampus Ouest, Rennes, France.

11:30 AM 383 Effects of dietary milk fat globule membrane in the gut and on systemic lipid metabolism.
R. Ward*, R. Jimenez-Flores1, A. Zhou1, and K. Hintze1, 1Utah State University, Logan, 2California Polytechnic State University, San Luis Obispo.

Nonruminant Nutrition

Amino Acids
Chair: David Bravo, Pancosma SA, Geneva, Switzerland
Sponsor: Archer Daniels Midland

9:30 AM 384 Effects of creep feeding and supplemental glutamine or glutamate (AminoGut) on pre- and post-weaning growth performance and intestinal health of piglets.
R. Cabrera*, J. Usry2, E. Nogueira3, M. Kutschenko3, A. Moeser1, and J. Odle1, 1North Carolina State University, Raleigh, 2Ajinomoto Heartland LLC, Chicago, IL, 3Ajinomoto Brazil, Brazil.

9:45 AM 385 Metabolomic analysis of the response to weaning and dietary L-glutamine supplementation in piglets using gas chromatography/mass spectrometry.
Y. Xiao*, T. Wu1, B. Dai2, S. Luo1, J. Feng2, and A. Chen1, 1Zhejiang University, Hangzhou, Zhejiang, China, 2Zhejiang Gomore Group, Hangzhou, Zhejiang, China.

10:00 AM 386 Feed efficiency of 7- to 16-kg pigs is maximized when additional lysine is supplied by L-Lys instead of intact protein, but is not affected when diets are supplemented with differing sources of non-essential amino acid nitrogen.
C. K. Jones*, J. A. Acosta1, M. D. Tokach1, J. L. Usry1, C. R. Neill5, and J. F. Patience1, 1Iowa State University, Ames, 2Universidad Nacional de Colombia, Bogotá, Colombia, 3Kansas State University, Manhattan, 4Ajinomoto Heartland LLC, Chicago, IL, 5Pig Improvement Company, Hendersonville, TN.

10:15 AM 387 Effect of increasing levels of lysine in the diet on growth performance and carcass and meat quality of growing-finishig pigs.
L. Cámara1, M. P. Serrano1, J. I. Morales1, E. Alcázar2, J. L. Sánchez2, and G. G. Mateos*, 1Departamento de Producción Animal, UPM, Ciudad Universitaria, s/n. 28040, Madrid, 2S.A.T. Vallehermoso, Ctra. La Solana a Infantes, km 9. 13248, Alhambra, Ciudad Real.
10:30 AM 388 Apparent prececal digestibility of amino acids and performance of broiler chickens fed soybean meal-based diets. A. F. Agboola*1 and E. A. Iyayi1, 1Department of Animal Science, University of Ibadan, Ibadan, Oyo, Nigeria, 2University of Ibadan, Ibadan, Oyo, Nigeria.

10:45 AM 389 Amino acid digestibility and energy content in Dried Fermentation Biomass, Peptone 50, and P.E.P. Two Plus fed to weanling pigs. R. C. Sulabo*1, J. K. Mathai1, J. L. Usry2, B. W. Ratliff3, D. M. McKilligan1, and H. H. Stein1, 1University of Illinois, Urbana, 2Ajinomoto Heartland LLC, Chicago, IL, 3TechMix LLC, Stewart, MN.

11:00 AM Break


11:30 AM 391 Effect of L-Trp supplementation on growth performance pigs transitioning from nursery to finisher pens in a commercial farm. Y. B. Shen*1, G. Voilqué1, D. Kendall2, D. Sykes3, and S. W. Kim3, 1North Carolina State University, Raleigh, 2Murphy-Brown LLC, Rose Hill, NC.

11:45 AM 392 Effect of L-Trp supplementation on growth and stress responses of nursery pigs fed diets varying large neutral amino acid concentrations. Y. B. Shen*1, G. Voilqué, and S. W. Kim, North Carolina State University, Raleigh.

12:00 PM 393 Feeding modality affects muscle protein synthesis but not degradation in muscle of neonatal pigs. S. W. El-Kadi*1, A. Suryawan1, M. C. Gazzaneo1, R. A. Orellana1, N. Srivastava1, H. V. Nguyen1, R. Murgas-Torrazza1, G. E. Lobley1, and T. A. Davis1, 1USDA/ARS Children’s Nutrition Research Center, Dept. Pediatrics, Baylor College of Medicine, Houston, TX, 2Division of Obesity and Metabolic Health, Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, UK.

12:15 PM 394 Arginine deficiency is responsible for high rates of mortality in low-birth-weight piglets. G. Wu*, X. L. Li, R. Rezaei, and D. A. Knabe, Texas A&M University, College Station.

Physiology and Endocrinology

Growth and Metabolism
Chair: Kelly Lynn Perfield, Elanco Animal Health

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10:00 AM 396 Blood metabolites and hormones as potential markers of body reserves dynamic and energetic balance in ruminants. E. González-García*, N. Debus1, P. Hassoun1, S. Camous2, M.-R. Aurel1, F. Bocquier1, and F. Barillet1, 1INRA UMR868, Systèmes d’Elevage Méditerranéens et Tropicaux (SELMET), Montpellier, France, 2INRA UMR1198, Biologie du Développement et Reproduction (BDR), Domaine de Vilvert, Jouy-en-Josas Cedex, France, 3INRA UE0321, Domaine Expérimental de La Fage, Roquefort-Sur-Soulzon, France, 4INRA UR0631, Station d’Amélioration Génétique des Animaux (SAGA), Chemin de Borde Rouge, Auzeville, BP 52627, Castanet-Tolosan Cedex, France.


10:30 AM 398 Functional genomics of liver in crossbred beef cows in two forage allowances during gestation and lactation period. J. Laporta*, G. Greif2, P. Zorrilla2, H. Naya2, G. J. M. Rosa2, and M. Carriquiry1, 1Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 2Instituto Pasteur, Montevideo, Uruguay, 3University of Wisconsin, Madison.

10:45 AM 399 Alterations in the somatotropic axis during a dual stress and M. haemolytica challenge in beef steers. S. M. Falkenberg*, J. A. Carroll2, M. A. Ballou2, J. L. Sartin2, J. O. Buntyn3, T. Elsasser3, S. Kahl3, and T. B. Schmidt4, 1Mississippi State University, Mississippi State, 2Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 3Auburn University College of Veterinary Medicine, Auburn, AL, 4Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD, 5Texas Tech University, Lubbock.
11:00 AM  Break

11:15 AM  400  Effects of plane of nutrition and 2,4-thiazolidinedione on insulin responses and adipose tissue gene expression in dairy cattle during late gestation.  
K. M. Schoenberg* and T. R. Overton, Cornell University, Ithaca, NY.

11:30 AM  401  Effects of overstocking on glucocorticoid production and analytes associated with energy metabolism.  
J. M. Huzzey*, D. V. Nydam1, R. J. Grant1, and T. R. Overton1, 1Cornell University, Ithaca, NY, 2W. H. Miner Institute, Chazy, NY.

11:45 AM  402  Effect of milking frequency and feeding level in early lactation on metabolites in grazing dairy cows.  

12:00 PM  403  Insulin-glucose clamps and intramammary LPS challenge: cross reactions between metabolism and mammary immune response.  
M. C. M. B. Vernay, L. Kreipe, H. A. van Dorland, R. M. Bruckmaier, and O. Wellnitz*, Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

12:15 PM  404  Insulin sensitivity in tropically adapted cattle selected for residual feed intake.  
G. L. Shafer*1,2, A. W. Lewis1, L. C. Caldwell2, A. N. Hafla2, G. E. Carstens2, T. D. A. Forbes1, T. H. Welsh2, and R. D. Randel1, 1Texas AgriLife Research, Overton, 2Texas AgriLife Research, College Station, 3Texas AgriLife Research, Uvalde.

Production, Management and the Environment & Forages and Pastures Joint Symposium  
Environmental Impact of Beef and Dairy Systems  
Chairs: Juan Tricarico, Innovation Center for U.S. Dairy, and J. W. Schroeder, North Dakota State University  
Sponsor: Dairy Research Institute/Innovation Center for U.S. Dairy

9:30 AM  405  An overview of the environmental impact of beef and dairy systems.  
J. L. Capper*, Washington State University, Pullman.

10:15 AM  406  Whole farm assessment—Using precision agriculture to assess, measure, and mitigate environmental impacts of on-farm practices.  
Y. Wang*, Innovation Center for U.S. Dairy, Rosemont, IL.

11:00 AM  407  Measurement strategies for reducing enteric methane from beef and dairy production.  
K. A. Beauchemin* and S. M. McGinn, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

11:45 AM  Lunch

2:00 PM  408  Dairy cropping systems and air quality.  
F. M. Mitloehner*, University of California, Davis.

2:45 PM  409  Cow of the future—A research roadmap for mitigating enteric methane emissions from dairy cattle.  
W. R. Wailes*, J. R. Knapp1, and M. D. Welch1, 1Colorado State University, Fort Collins, 2Fox Hollow Consulting LLC, Columbus, OH, 3Dairy Research Institute, Rosemont, IL.

3:30 PM  410  Diet formulation as an effective tool for mitigating the environmental impact of dairy and beef cattle operations.  
A. N. Hristov*, Pennsylvania State University, University Park.

4:15 PM  411  Managing the environmental impact of pasture production systems.  
K. A. Johnson* and C. D. Gambino, Washington State University, Pullman.

Ruminant Nutrition  
Beef: Vitamin and Minerals  
Chair: Jon Schoonmaker, Purdue University

9:30 AM  412  Ruminal degradable sulfur from organic and inorganic sources in beef cattle finishing diets.  
J. O. Sarturi*, G. E. Erickson, T. J. Klopfenstein, and C. D. Buckner, University of Nebraska, Lincoln.
Effects of trace mineral injections on measures of growth and trace mineral status of pre-weaned beef calves.
J. D. Arthington\textsuperscript{1,2} and L. J. Havenga\textsuperscript{2}, \textsuperscript{1}University of Florida, Range Cattle Research and Education Center, Ona, \textsuperscript{2}Multimin USA Inc., Fort Collins, CO.

Effect of chromium supplementation on finishing Nellore bulls performance, carcass characteristics, and liver abscesses.
R. S. Marques\textsuperscript{1}, A. M. Pedroso\textsuperscript{1,2}, C. T. S. Dias\textsuperscript{3}, L. R. M. Pinto\textsuperscript{1}, and F. A. P. Santos\textsuperscript{1}, \textsuperscript{1}University of Sao Paulo, College of Agricultural Sciences, Piracicaba/SP, Brazil, \textsuperscript{2}Embrapa Cattle Southeast, Sao Carlos/SP, Brazil.

Meta-analysis of the effect of dietary sulfur on feedlot health.
C. A. Nichols\textsuperscript{1}, V. R. Bremer\textsuperscript{2}, A. K. Watson\textsuperscript{2}, C. D. Buckner\textsuperscript{2}, J. L. Harding\textsuperscript{1}, D. R. Smith\textsuperscript{1}, G. E. Erickson\textsuperscript{1}, and T. J. Klopfenstein\textsuperscript{1}, \textsuperscript{1}Department of Animal Science, University of Nebraska-Lincoln, Lincoln, \textsuperscript{2}School of Veterinary Medicine and Biomedical Sciences, University of Nebraska-Lincoln.

Effect of delaying the feeding of high sulfur diets to feedlot cattle until after adaptation to a finishing diet.
M. E. Drewnoski\textsuperscript{*} and S. L. Hansen, Iowa State University, Ames.

Effects of zinc and copper source and concentration on feedlot performance and carcass characteristics in yearling steers.
M. G. Dib\textsuperscript{1,2}, J. J. Wagner\textsuperscript{1}, K. Perryman\textsuperscript{1}, J. W. Spears\textsuperscript{3}, and T. E. Engle\textsuperscript{2}, \textsuperscript{1}Colorado State University, Fort Collins, \textsuperscript{2}Micronutrients, Indianapolis, IN, \textsuperscript{3}North Carolina State University, Raleigh.

Effects of supplemental copper and Linpro on performance and carcass characteristic of beef heifers.
C. A. Alvarado\textsuperscript{*}, C. C. Aperce, K. A. Miller, C. L. van Bibber, S. Uwituze, and J. S. Drouillard, Kansas State University, Manhattan.

Chromium supplementation alters the performance and health of feedlot cattle during the receiving period.
B. C. Bernhard\textsuperscript{*1,2}, R. J. Rathmann\textsuperscript{3}, D. N. Finck\textsuperscript{1}, W. Rounds\textsuperscript{3}, and B. J. Johnson\textsuperscript{1}, \textsuperscript{1}Texas Tech University, Lubbock, \textsuperscript{2}Kemin Industries Inc., Des Moines, IA.

Chromium supplementation alters the glucose and lipid metabolism of feedlot cattle during the receiving period.
B. C. Bernhard\textsuperscript{*1,2}, N. C. Burdick\textsuperscript{1}, R. J. Rathmann\textsuperscript{3}, D. N. Finck\textsuperscript{1}, J. A. Carroll\textsuperscript{2}, A. N. Loyd\textsuperscript{1}, and B. J. Johnson\textsuperscript{1}, \textsuperscript{1}Texas Tech University, Lubbock, \textsuperscript{2}Livestock Issues Research Unit, USDA-ARS, Lubbock, TX.

Ruminant Nutrition
Dairy: Forages and Fiber
Chair: James Caldwell, Lincoln University
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Milk production responses to soybean meal and canola meal in dairy cows fed grass silage based diets—A meta-analysis.
P. Huhtanen\textsuperscript{*1}, M. Hetta\textsuperscript{1}, and C. Swensson\textsuperscript{2}, \textsuperscript{1}Swedish University of Agricultural Sciences, Umeå, Sweden, \textsuperscript{2}Swedish Dairy Association, Lund, Sweden.

Intake and milk production of dairy cows fed diets including low lignin/high fiber digestibility corn silage.
N. B. Litherland\textsuperscript{*1}, H. G. Jung\textsuperscript{1,2}, and J. G. Linn\textsuperscript{1}, \textsuperscript{1}University of Minnesota, St Paul, \textsuperscript{2}USDA-ARS, St Paul, MN.

Effects of supplementing starch or sugar pre-and postpartum to dairy cows fed TMR with wheat straw or grass hay prepartum: Performance, metabolism and health.
N. B. Litherland\textsuperscript{*1,2}, L. Davis\textsuperscript{1}, S. Emanuele\textsuperscript{2}, and H. Blalock\textsuperscript{2}, \textsuperscript{1}University of Minnesota, St Paul, \textsuperscript{2}Quality Liquid Feeds Inc., Dodgeville, WI.

Alternative models of kinetics impact indigestible neutral detergent fiber and estimates of ruminal digestibility.
D. R. Mertens\textsuperscript{*}, Mertens Innovation & Research LLC, Belleville, WI.

Comparison of alternative methods, sample grinds, and fermentation times for determining indigestible neutral detergent fiber.
J. Boyd\textsuperscript{*1,2} and D. R. Mertens\textsuperscript{2}, \textsuperscript{1}US Dairy Forage Research Center, Madison, WI, \textsuperscript{2}Mertens Innovation & Research LLC, Belleville, WI.

Effects of daily ingredient dry matter adjustment of total mixed ration using Intelligent Ration Monitoring (IRM) NIR forage analyzer on commercial dairy farm performance.
D. N. L. da Silva\textsuperscript{*1,2}, A. Barbi\textsuperscript{2}, A. Ghiraldi\textsuperscript{2}, D. Allen\textsuperscript{2}, and N. B. Litherland\textsuperscript{1}, \textsuperscript{1}University of Minnesota, St Paul, \textsuperscript{2}Dinamica Generale, Poggio Rusco, Italy, \textsuperscript{3}Gar-Lin Dairy, Eyota, MN.
11:00 AM 427  Effects of prepartum supplementation of starch or sugar to dairy cows fed TMR with thirty percent wheat straw or grass hay on colostrum yield and composition.
N. B. Litherland*, L. Davis*, S. Emanuele*, and H. Blalock*; ¹University of Minnesota, St Paul, ²Quality Liquid Feeds Inc., Dodgeville, WI.

11:15 AM 428  Effects of corn gluten feed and effective NDF on ruminal pH and productivity of lactating dairy cattle.
M. L. Sullivan*, K. N. Grigsby*, and B. J. Bradford*; ¹Department of Animal Science and Industry, Kansas State University, Manhattan, ²Cargill Incorporated, Blair, NE.

11:30 AM 429  Feeding forage cubes to identify divergence for residual feed intake in dairy cows.

11:45 AM 430  A mathematical model to predict the size and rate of digestion of a fast and slow pool of NDF and the indigestible NDF.

12:00 PM 431  Rates of particle size reduction and passage are faster for legume compared to C3 grass resulting in lower rumen fill and less effective fiber.
K. L. Kammes* and M. S. Allen, Michigan State University, East Lansing.

12:15 PM 432  Individual variability of NDF intake and feed conversion efficiency in pasture-based systems.
S. C. Garcia*, F. Bargo*, and R. K. Jhajj; ¹The University of Sydney, Camdem, NSW, Australia, ²Elanco Animal Health Southern Cone (Argentina & Chile), Buenos Aires, Argentina.

Small Ruminant Nutrition
Chair: Sandra Solaiman, Tuskegee University

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9:30 AM 433  Cereal nutrition of periparturient ewes: Corn versus wheat-barley.
A. Nikkhah*, M. Karam Babaie, and H. Mirzaei; University of Zanjan, Zanjan, Iran.

9:45 AM 434  Effect of replacement of barley grain with oak acorn (Querqus persica) on Markhoz kids' performance.
E. Foroutan*, O. Azizi, G. H. A. Sadeghi, F. Fatehi, and S. H. Karimi; Department of Animal Science, Faculty of Agriculture, College of Agricultural and Nature Science, University of Kurdistan, Sanandaj, Kurdistan, Iran.

10:00 AM 435  Performance of pre-weaned WAD lambs fed Mexican sunflower leaf meal (MSLM) based diets.
A. H. Ekeocha*, A. O. Akinsoyinu, and O. Makinde; University of Ibadan, Ibadan, Oyo, Nigeria.

10:15 AM 436  Effects of including okara into the diet of weaning crossbred Boer goats and its impact on growth and performance.

10:30 AM  Break

10:45 AM 437  Energy and protein requirements of Canindé, Moxotó and Boer crossbred goats in semi-arid region of Brazil.
M. L. Chizzotti*¹, K. C. Busato¹, T. S. Silva¹, R. T. S. Rodrigues¹, C. W. S. Wanderley¹, I. F. Silva¹, and G. G. L. Araujo¹; ¹Universidade Federal de Lavras, Lavras, MG, Brazil, ²Universidade Federal de Vale do São Francisco, Petrolina, PE, Brazil, ³Embrapa CPATSA, Petrolina, PE, Brazil.

11:00 AM 438  Effect of yeast culture and direct-fed microbes on the growth performance of lambs.

11:15 AM 439  Mineral profile of lactating West African Dwarf ewe fed Mexican sunflower leaf meal based diets.
A. H. Ekeocha*, University of Ibadan, Ibadan, Oyo, Nigeria.

11:30 AM 440  Mineral profile of pregnant West African Dwarf ewe fed Mexican sunflower leaf meal based diets.
A. H. Ekeocha*, University of Ibadan, Ibadan, Oyo, Nigeria.
Nutritive value of palm kernel cake-brewers dried grain (PKC-BDG) based diets supplemented with exogenous enzymes for growing-finishing pigs.
A. O. K. Adesehiwa*, O. O. Obi, M. A. Adesina, B. A. Makanjuola, O. O. Oluwole, T. O. Olurungbohunmi, and O. Fagbiye
Institute of Agricultural Research and Training, Obafemi Awolowo University, Ibadan, Oyo State, Nigeria.
National Agricultural Extension & Research Liaison Services, Ahmadu Bello University, Zaria, Kaduna State, Nigeria.

The influence of low and standard energy diets on efficiency, carcass value, and pork quality in Berkshire swine.
The Ohio State University, Columbus, Kansas State University, Manhattan.

Effects of ractopamine on performance, carcass and meat quality in purebred Berkshire swine.
The Ohio State University, Columbus, Kansas State University, Manhattan.

The effects of diet ingredients on gastric ulceration and salivary pH in gestating sows.
Purdue University, West Lafayette, IN, USDA-ARS-LBRU, West Lafayette, IN.

Effect of dietary glutamine supplementation on the apparent total tract digestibility of energy and nutrients and jejunal gene expression in weaned piglets.
A. Chen*, Y. Xiao, T. Wu, Q. Hong, and C. Yang
Zhejiang University, Hangzhou, Zhejiang, China.

Effect of feeding Bt (MON810) maize to pigs from 12 days post-weaning for 110 days on growth performance, body composition, carcass characteristics, organ weights and intestinal morphology.
S. G. Buzoianu*, M. C. Walsh, G. E. Gardiner, M. C. Rea, R. P. Ross, and P. G. Lawlor
Pig Development Department, Moorepark Animal and Grassland Research and Innovation Centre, Teagasc, Fermoy, Co. Cork, Ireland.
Department of Chemical and Life Sciences, Waterford Institute of Technology, Waterford, Ireland.
Moorepark Food Research Centre, Teagasc, Fermoy, Co. Cork, Ireland.

Effect of feeding genetically modified Bt (MON810) maize to pigs from 12 days post-weaning for 110 days on serum and urine biochemistry.
S. G. Buzoianu*, M. C. Walsh, G. E. Gardiner, M. C. Rea, R. P. Ross, and P. G. Lawlor
Pig Development Department, Moorepark Animal and Grassland Research and Innovation Centre, Teagasc, Fermoy, Co. Cork, Ireland.
Department of Chemical and Life Sciences, Waterford Institute of Technology, Waterford, Ireland.
Moorepark Food Research Centre, Teagasc, Fermoy, Co. Cork, Ireland.

Supplementation of xylanase to improve DDGS and corn germ meal utilization by finishing pigs as measured by performance and carcass yield in a commercial environment.
Hall Farms Consulting, LLC, Noblesville, IN, Swine Nutrition Services, Anchor, IL, Danisco Animal Nutrition, Waukesha, WI.

Monitoring muscle proteolysis in pig plasma.
K. L. Price* and J. Escobar
Virginia Polytechnic Institute and State University, Blacksburg.

Effect of independent laboratory assessment, freezing volume, and other factors influencing post-thaw quality of frozen boar sperm.
J. M. Ringwelski* and R. V. Knox
Department of Animal Sciences, University of Illinois, Champaign-Urbana.

Characteristics of the work habits and demographics of caretakers on swine finishing facilities in Ohio.
S. M. Crawford*, S. J. Moeller, P. H. Hemsworth, C. C. Croney, N. A. Botheras, and H. N. Zerby
Ohio State University, Columbus, University of Melbourne, Melbourne, Victoria, Australia.

ADSA Foundation Scholar Lecture – Dairy Foods
Chair: Albert DeVries, University of Florida
Sponsor: ADSA Foundation

Introduction

ADSA Foundation Scholar Lecture: Dairy food quality and safety: Entering the “omics” era.
M. Yeung*, California Polytechnic State University, San Luis Obispo.
**Animal Behavior and Well-Being 3**  
**Chair: Cassandra Tucker, University of California-Davis**  
**297**

2:00 PM 452  
**Survey of animal welfare and dairy management practices on 91 Organic Valley dairy farms.**  
W. K. Fulwider*, CROPP Cooperative, LaFarge, WI.

2:10 PM 452  
**ADSA Foundation Scholar Lecture: The need for applied research and decision support tools in dairy farm management and decision-making.**  
V. E. Cabrera*, University of Wisconsin, Madison.

2:15 PM 453  
**A dairy quality assurance program for New Mexico dairy producers.**  
F. A. Rivera*, G. R. Hagevoort1, M. L. Kinsel2, and M. A. Smith3; 1NMSU Ag Science Center, Clovis, NM, 2Agricultural Information Management Inc., Ellensburg, WA.

2:30 PM 454  
**Effect of prior grazing experiences on grazing behavior and performance of lactating cows.**  
F. Lopes1, N. M. Esser2, P. C. Hoffman1, W. K. Cobleintz1, and D. K. Combs1; 1Department of Dairy Science, University of Wisconsin, Madison, 2USDA-ARS, Marshfield, WI.

2:45 PM 455  
**Effects of acute and chronic stress on immune- and inflammatory-response gene expression in beef calves.**  

3:00 PM 456  
**Estimation of genetic parameters for gait in Canadian Holstein cows.**  
N. Chapinal1,2, F. Miglior1,4, A. Sewalem1,4, A. M. de Passille1, J. Rushen1, M. A. G. von Keyserlingk2, and D. M. Weary2; 1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada, 3Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada, 4Canadian Dairy Network, Guelph, ON, Canada.

3:15 PM 457  
**Automatic estimation of body condition score from digital images.**  
M. Caccamo1, G. Azzaro1, G. Gallo1, G. C. Guarnera1, J. D. Ferguson2, and G. Licitra2,4, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2iPLAB, Catania University, Catania, Italy, 3University of Pennsylvania, PA, 4DISPA, Catania University, Catania, Italy.

3:30 PM 458  
**Use of infrared thermography to identify thermoregulatory differences between heat-sensitive and heat-tolerant breeds of Bos taurus cattle.**  
R. E. Chaffin1, K. J. Hoernig1, J. S. Johnson1, J. K. Bryant1, B. Scharf1, D. K. Kishore1, P. A. Eichen1, E. S. Dierenfeld1, and D. E. Spiers1; 1University of Missouri, Columbia, 2Novus International, Inc., St. Charles, MO.

3:45 PM 459  
**Effect of climatic on body temperature of dairy cows.**  
J. C. Lees* and J. B. Gaughan, The University of Queensland, Australia.

4:00 PM 460  
**Repeatability of subjective and objective measures of exit velocity as an indicator of temperament in feedlot cattle.**  

4:15 PM 461  
**Group pasture versus stall housing effects on cortisol and DHEA concentrations in young Quarter Horses.**  

4:30 PM 462  
**Cortisol and DHEA concentrations in foals identified as high versus low behavioral responders during weaning.**  

4:45 PM 463  
**Preference for condensed tannins by sheep in response to challenge infection with Haemonchus contortus.**  
J. Juhnke1, J. Miller1, F. Provenza2, J. Hall3, and J. Villalba*, 1Utah State University, Department of Wildland Resources, Logan, 2Louisiana State University, Department of Pathobiological Sciences, Baton Rouge, 3Utah State University, Department of Animal Dairy and Veterinary Sciences, Logan.

5:00 PM 464  
**Lack of acclimation in Holstein calves exposed to repeated transport.**  
Bioethics Symposium
The Ethical Food Movement: What Does it Mean for Animal Agriculture?
Chair: Candace Croney, The Ohio State University
Sponsors: Elanco Animal Health, Monsanto Co.

2:00 PM  
Introduction  
C. Croney, The Ohio State University.

2:05 PM  
Food production using animals: The roles of media coverage and societal values in shaping opinions about ethics.  
S. Priest*, University of Nevada, Las Vegas.

2:40 PM  
The (mis)appropriation of science in framing the ethics of animal production: Environmental issues.  
J. L. Capper*, Washington State University, Pullman.

3:15 PM  
Break

3:25 PM  
What did they just say? Science, politics, and animal welfare.  
J. A. Mench*, University of California, Davis.

4:00 PM  
The (mis)appropriation of science in framing the ethics of animal production: The use of antibiotics.  
M. D. Apley*, Kansas State University, Manhattan.

4:35 PM  
Panel Discussion

Breeding and Genetics
Dairy Cattle Breeding I  
Chair: Christian Maltecca, North Carolina State University  
Sponsors: BSAS, EAAP

2:00 PM  
Assessing accuracy of heat detection in dairy herds.  
H. Seegers*, D. Billon1, E. Bossard-Apper2, C. Ponsart3, B. Grimard4, and N. Bareille1, 1Research Group Epidemiology and Risk Analysis Oniris-INRA, Nantes, France, 2Agriculture School, Angers, France, 3UNCEIA, Maisons-Alfort, France, 4Veterinary School, Maisons-Alfort, France.

2:15 PM  
Heritability and repeatability estimates for twinning rate in the Irish dairy and beef cattle.  
A. M. Doyle1, R. D. Evans2, and A. G. Fahey*3, 1University College Dublin, Belfield, Dublin 4, Ireland, 2Irish Cattle Breeding Federation, Bandon, Co. Cork, Ireland.

2:30 PM  
Genetic analysis of ovulatory disorders in Austrian Fleckvieh cows: A comparison between linear models and survival analysis.  
A. Koeck*, B. Fuerst-Waltl1, J. Sölkner2, C. Egger-Danner3, and G. Meszaros3, 1Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 2Division of Livestock Sciences, University of Natural Resources and Life Sciences, Vienna, Austria, 3ZuchtData EDV-Dienstleistungen GmbH, Vienna, Austria.

2:45 PM  
Montbeliarde-sired crossbred cows compared to pure Holstein cows for production, SCS, days open, and survival during their first three lactations.  

3:00 PM  
Joint estimation of genetic parameters for test day somatic cell count and mastitis using a random regression model in the United Kingdom.  
R. Mrode*, T. Pritchard, M. Coffey, and E. Wall, Scottish Agricultural College, Penicuik, Midlothian, UK.

3:15 PM  
Estimation of genetic parameters for health and survival in Canadian Holstein calves.  
C. E. McCorquodale*, F. Miglior2,3, A. Sewalem2,3, D. Kelton1, A. Robinson2, and K. E. Leslie1, 1Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 2Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, Ontario, Canada, 3Canadian Dairy Network, Guelph, Ontario, Canada.

3:30 PM  
Genetic parameters of lactation yield in the tropical carora breed with random regression test-day models.  
E. Tullo*, S. Biffani2, C. Maltecca3, and R. Rizzi1, 1University of Milan, Faculty of Veterinary Medicine, Department of Veterinary Science and Technology for Food Safety, Milan, Italy, 2Parco Tecnologico Padano, Lodi, Italy, 3Department of Animal Science, North Carolina State University, Raleigh.
**Breeding and Genetics**

**Quantitative Animal Breeding**

*Chair: Scott Newman, Genus Plc*

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**2:00 PM 476**  
Cooperation under directional selection with kinship-based groups.  
F. Siewerdt*, A. D. Franklin¹, J. A. Carrillo², A. K. Sasikala-Appukuttan³, A. Schierhold², T. E. Callicrate³, M. A. Campbell¹, and H. L. M. Moreira³, ¹University of Maryland, College Park, MD, ²Universidade Federal Rural da Amazônia, Belém, PA, Brazil, ³Universidade Federal de Pelotas, Pelotas, RS, Brazil.

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**2:15 PM 477**  
A recursive binomial model for piglet mortality.  
L. Varona*¹, and D. Sorensen², ¹Unidad de Genetica Cuantitativa y Mejora Animal, Universidad de Zaragoza, Zaragoza, Spain, ²Department of Genetics and Biotechnology, University of Aarhus, Tjele, Denmark.

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**2:30 PM 478**  
Genetic correlation between purebred piglet birth weight and crossbred performance.  
C. Y. Chen*¹,², I. Misztal³, T. Susruta¹, J. Holl¹, W. O. Herring², and M. Culbertson³, ¹Department of Animal and Dairy Science, University of Georgia, Athens, ²Newsham Choice Genetics, Chesterfield, MO, ³Smithfield Premium Genetics Group, Rose Hill, NC.

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**2:45 PM 479**  
Construction of individual breeding values for feed intake of Plétrain boars based on mean pen feed intake, weight and weight gain test station records.  
M. Dufrasne*¹, V. Jaspart², J. Wavreille¹, and N. Gengler¹,², ¹Animal Science Unit, University of Liege, GxABT, Gembloux, Belgium, ²Walloon Pig Breeders Association, Ciney, Belgium, ³Walloon Agricultural Research Centre, Gembloux, Belgium, ⁴National Fund for Scientific Research, Brussels, Belgium.

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**3:00 PM 480**  
Genetic correlations between purebred Limousin and F1 Limousin*Angus.  
R. Davis*¹, I. Misztal¹, M. Lukaszewicz¹,², S. Susruta¹, and J. K. Bertrand¹, ¹University of Georgia, Athens, ²Polish Academy of Sciences, Institute of Genetics and Animal Breeding, Jastrzebiec, Poland.

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**3:15 PM 481**  
The heritability of lean color and its influence on beef tenderness.  
P. Johnson*¹, D. Moser², and M. Miller³, ¹Texas Tech University, Lubbock, ²Kansas State University, Manhattan.

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**3:30 PM 482**  
Multivariate characterization of morphological traits in Nigerian sheep.  
A. Yakubu¹, M. Okpeku¹, M. Wheto¹, S. Amusan¹, B. O. Agaviezor², M. A. Adfenwa³, B. M. Ilori³, O. Ajayi³, G. O. Onasanya³, J. Ekundayo¹, T. Sanni³, C. O. N. Iokebi³, M. I. Takeet³, and I. G. Imumorin*¹, ¹Dept of Animal Science, Nasarawa State University, Lafia, Nigeria, ²Department of Livestock Production, Niger Delta University, Amassoma, Nigeria, ³Department of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria, ⁴Dept of Animal Science and Fisheries, University of Port-Harcourt, Port-Harcourt, Nigeria, ⁵Dept of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria, ⁶Dept of Veterinary Microbiology and Parasitology, University of Agriculture, Abeokuta, Nigeria, ⁷Dept of Animal Science, Cornell University, Ithaca, NY.

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**3:45 PM 483**  
Multivariate analysis of morphological differentiation in Nigerian goats.  
A. Yakubu¹, M. Okpeku¹, M. Wheto¹, S. Amusan¹, B. O. Agaviezor², M. A. Adfenwa³, B. M. Ilori³, O. Ajayi³, G. O. Onasanya³, J. Ekundayo¹, T. Sanni³, C. O. N. Iokebi³, M. I. Takeet³, and I. G. Imumorin*¹, ¹Dept of Animal Science, Nasarawa State University, Lafia, Nigeria, ²Department of Livestock Production, Niger Delta University, Amassoma, Nigeria, ³Department of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria, ⁴Dept of Animal Science and Fisheries, University of Port-Harcourt, Port-Harcourt, Nigeria, ⁵Dept of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria, ⁶Dept of Veterinary Microbiology and Parasitology, Abeokuta, Nigeria, ⁷Dept of Animal Science, Cornell University, Ithaca, NY.

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**4:00 PM 484**  
Searching for causal relationships among five traits of European quails.  
B. D. Valente*¹,², G. J. M. Rosa¹,², M. A. Silva², R. B. Teixeira², and R. A. Torres³, ¹Department of Animal Sciences, University of Wisconsin, Madison, ²Departamento de Zootecnia, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, ³Department of Biostatistics and Medical Informatics, University of Wisconsin, Madison.

**4:45 PM 485**  
Withdrawn
Companion Animals Symposium
Living Beyond 20: Discoveries in Geriatric Companion Animal Biology
Chair: Cheryl L. Morris, Omaha’s Henry Doorly Zoo
Sponsors: Hill’s Science Diet, Nestlé Purina, Proctor and Gamble

2:00 PM 486 Living beyond 20: Discoveries in geriatric companion animal management, nutrition and behavior.
C. L. Morris* , Omaha’s Henry Doorly Zoo, Omaha, NE.

2:05 PM 487 Longevity, not production: When rate of gain is not the focus.
T. A. Faber and G. C. Fahey*, University of Illinois, Urbana.

2:40 PM 488 Obesity: What is wrong with being fat?
D. P. Laffamme*, Nestle Purina PetCare Research, St. Louis, MO.

3:15 PM 489 Cognition and behavior in geriatric animals: If they had Sudoku what would it look like?
K. L. Overall*, University of Pennsylvania, Philadelphia.

3:50 PM 490 Skinny old critters: Managing diet and expectations.
C. L. Morris¹ and J. Cline**, ¹Omaha’s Henry Doorly Zoo, Omaha, NE, ²Nestle Purina Petcare Product Technology Center, St. Louis, MO.

4:25 PM 491 Bones and joints: Improving mobility in senior years.
B. Lussier*¹², ¹Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Montreal, St-Hyacinthe, Quebec, Canada, ²University Hospital Research Center, University of Montreal, Montreal, Quebec, Canada.

Dairy Foods Symposium
Innovations in Dairy Processing Unit Operations
Chair: Brandon Nelson, Daisy Brand

2:00 PM 492 Plate heat exchangers.
J. C. Bohn*, AGC Heat Transfer Inc., Bristow, VA.

2:40 PM 493 Dairy processing efficiency and safety gains from double-seat valve technology.
L. W. Clem*, Electrol Specialties Company, South Beloit, IL.

3:20 PM 494 Innovations in homogenizer and separator technology for the modern dairy plant.
W. Rowlands*, Rowlands Sales Co. Inc.

4:00 PM 495 Filtration systems.

Dairy Foods
Microbiology and Probiotics
Chair: Tony Schoenfuss, University of Minnesota

2:00 PM 496 Use of high pressure processing to control Listeria monocytogenes in packaged Queso Fresco.
P. Tomasula**, L. Leggett¹, R. Kwoczak¹, D. Van Hekken¹, M. Tunic¹, J. Renye¹, M. Toht¹, S. Mukhopadhyay¹, A. Portofett¹, and J. Luchansky¹, USDA/ARS/ERRC/Dairy and Functional Foods Research Unit, Wyndmoor, PA, 2USDA/ARS/ERRC/Residue Chemistry and Predictive Microbiology Research Unit, Wyndmoor, PA, 3USDA/ARS/ERRC/Food Safety Interventions Research Unit, Wyndmoor, PA.

2:15 PM 497 High-pressure processing of lowfat Cheddar cheese.
M. Ozturk¹², S. Govindasamy-Lucey², J. J. Jaeggi², K. Houck², M. E. Johnson², and J. A. Lucey¹, ¹University of Wisconsin, Madison, ²Wisconsin Center for Dairy Research, Madison.

2:30 PM 498 The effect of UV light treatment and processing method on the microbial reduction of pasteurized whole milk.
J. Tharani¹*, A. Laubscher, A. M. Lammert, and R. Jimenez-Flores, Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.
2:45 PM 499  Tina wooden vat biofilms used in Sicilian PDO Ragusano cheese provide a new cluster of *Streptococcus thermophilus* strains.
V. Florence1,2, C. Delorme3, C. Pediliggieri4, M.-N. Madec1,2, V. Chuat1,2,3, S. Parayre1,2, S. Carpino5, P. Campo6, P. Renault3, S. Lortal1,2, and G. Licitra4.1INRA, UMR1253, STLO, Rennes, France, 2Agrocampus Ouest, UMR1253, STLO, Rennes, France, 3INRA, Micalis, Jouy en Josas, France, 4CoRfiLaC, Ragusa, Sicily, Italy.

3:00 PM 500  Molecular identification and characterization of *Lactococcus lactis* ssp. lactis and *Lactococcus lactis* ssp. cremoris by FTIR and its utilization for Cheddar cheese production.
H. U. Rehman*, M. Nasir7, S. U. Rehman8, M. A. Jabbar9, and M. A. Ali1.1University of Veterinary & Animal Sciences, Lahore, Punjab, Pakistan, 2University of Agriculture Faisalabad, Faisalabad, Punjab, Pakistan.

3:15 PM 501  Transcriptional and physiological responses of *Bifidobacterium animalis* ssp. lactis strains to hydrogen peroxide stress.
T. S. Oberg*, R. E. Ward1, J. L. Steele2, and J. R. Broadbent1.1Utah State University, Logan, 2University of Wisconsin, Madison.

3:30 PM 502  Fresh cheese containing higher inoculation of *L. acidophilus* and its effect on the functionality and metabolism of probiotic culture.
A. Cruz, J. Faria*, W. Castro, R. Cadena, and H. Bolini, University of Campinas (UNICAMP).

3:45 PM 503  Microbiological and physico-chemical properties of probiotic whey beverages processed with different whey concentrations.
W. Castro, A. Cruz, J. Faria*, M. Bisinotto, and R. Celeghini, University of Campinas (UNICAMP).

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**Extension Education**

**Dairy and Livestock**

**Chair: Brett Barham, University of Arkansas**

389

2:00 PM 504  A dairy safety program: Considering human and animal safety.
M. A. Smith*, G. R. Hagevoort, and F. A. Rivera, NMSU Ag Science Center, Clovis.

2:15 PM 505  Assessing a comprehensive dairy cattle economic program for practicing dairy veterinarians.
G. M. Schuennemann*, D. Shoemaker, D. Breece, S. Bas, and J. D. Workman, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.

2:30 PM 506  III. Dairy calving management: Assessment of a comprehensive program for dairy personnel.
G. M. Schuennemann*, S. Bas, E. Gordon, and J. Workman, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.

2:45 PM 507  Virtual town hall meetings as a method for engaging the public and dairy industry on contentious topics: The case of tail docking.

3:00 PM 508  The Missouri Show-Me-Select Replacement Heifer Program.
D. A. Mallory*, J. M. Nash, M. F. Smith, S. E. Poock, and D. J. Patterson, University of Missouri, Columbia.

3:15 PM 509  Enhancing knowledge and technology adoption in a misunderstood discipline: The weight trait project.

3:30 PM 510  Evaluating cow efficiency at the producer level: The Northwest Minnesota Beef Improvement Program.
R. S. Walker*, S. L. Bird2, G. I. Crawford3, and A. DiCostanzo3.1LSU AgCenter, Homer, LA, 2University of Minnesota North Central Research & Outreach Center, Grand Rapids, 3University of Minnesota Extension, Hutchinson, MN, 4University of Minnesota, St. Paul.

3:45 PM 511  The benefits of using StockPlan to assist producers make management decisions before and during dry spells or drought.
M. J. McPhee*, M. B. Whelan2, B. L. Davies3, G. P. Meaker6, P. Graham5, and P. M. Carberry6.1Industry and Investment NSW, Armidale, NSW, Australia, 2Southern Cross University, Lismore, NSW, Australia, 3Industry and Investment NSW, Paterson, NSW, Australia, 4Industry and Investment NSW, Goulburn, NSW, Australia, 5Industry and Investment NSW, Yass, NSW, Australia, 6Formerly Industry and Investment, WD, NSW, Australia.

4:00 PM 512  Carcass and meat quality characteristics of exhibition swine.
S. J. Moeller*, H. N. Zerby, K. S. Betts, M. J. Bishop, S. M. Crawford, M. D. Cressman, and A. S. Gress, The Ohio State University, Columbus.
SowBridge: A breeding herd distance education program allowing on-farm delivery.
M. H. Whitney*, University of Minnesota Extension, Mankato.

Content appraisal: A tool for analyzing web content and its effectiveness.
J. Nadeau*1, N. Heidorn2, and N. Broady3, 1University of Connecticut, Storrs, 2Louisiana State University, Baton Rouge, 3University of Kentucky, Lexington.

Challenges and benefits of the participation of youth in creating youth-friendly material: Horses and Humans for a Healthy Habitat.

Growth and Development Symposium
Understanding and Mitigating the Impacts of Inflammation on Animal Growth and Development
Chairs: Sally Johnson, University of Florida, and Erin Connor, USDA-ARS, Beltsville, MD
Sponsors: Elanco Animal Health, Pfizer Animal Health

Introduction

2:00 PM  516

2:05 PM  517

2:40 PM  518

3:15 PM  519

3:50 PM  520

4:25 PM  521

4:30 PM  514

4:45 PM  515

4:40 PM  517

3:15 PM  518

3:50 PM  519

4:25 PM  520

Meat Science and Muscle Biology
Beef Quality and Muscle Biology
Chair: Steven Lonergan, Iowa State University

Warner-Bratzler and slice shear force measurements of three beef muscles in response to various aging periods following anabolic implant and zilpaterol hydrochloride supplementation of finishing beef steers.
A. J. Garmyn**, L. F. Hightower1, J. C. Brooks1, B. J. Johnson1, S. L. Parr1, R. J. Rathmann1, J. D. Starkey1, D. A. Yates2, J. M. Hodgen1, J. P. Hutcheson1, and M. F. Miller1, 1Texas Tech University, Lubbock, 2Intervet/Schering-Plough Animal Health, DeSoto, KS.

The effects of anabolic growth implant and restricted feed intake on proliferation of bovine primary skeletal muscle cells.

Identification of tough beef carcasses from epigenetic changes detectable in blood.
M. S. Updike*, C. Zhao, Y. Yu, F. Tian, and J. Song, University of Maryland, College Park.

Carcass and production characteristics of grass-fed Angus cattle through spring, summer, winter and fall.
C. Zhao, J. Song, B. Bequette, and M. S. Updike*, University of Maryland, College Park.

Withdrawn
Effect of castration and slaughter ages on animal performance and meat quality of Holstein bulls fed high-concentrate diets.
S. Marti*, C. E. Realini², A. Bach³, M. Perez-Juan⁴, and M. Devant⁵, ¹Department Ruminant Production, IRTA, Barcelona, Spain, ²Carcass Quality Subprogram, IRTA, Girona, Spain, ³ICREA, Barcelona, Spain.

Establishing a molecular fingerprint of high versus low-quality beef carcasses.

Localization and abundance of DLK1 in skeletal muscle of cattle.
E. Albrecht*, J. Kuzinski⁵, T. Gotoh², and S. Maak¹, ¹Leibniz Institute for Farm Animal Biology, Muscle Biology and Growth, Dummerstorf, Germany, ²Kyushu University, Kuju Agricultural Research Center, Kuju-cho, Oita, Japan.

Nonruminant Nutrition Symposium
Nutrient and Neuroendocrine Regulation of Gastrointestinal Function
Chair: Soraya P. Shirazi-Beechey, University of Liverpool, UK
Sponsors: EAAP, Pancosma
383-385

Involvement of gut neural and endocrine systems in pathological disorders.
J. B. Furness*, Department of Anatomy and Cell Biology, University of Melbourne, Melbourne, Australia.

Neurogastroenterology and food allergies.
J. D. Wood*, Department of Physiology & Cell Biology and Internal Medicine The Ohio State University, Columbus.

Nutrient and neuroendocrine regulation of intestinal glucose absorption.
S. P. Shirazi-Beechey*, A. W. Moran¹, D. M. Bravo², and M. Al-Rammahi¹, ¹University of Liverpool, Liverpool, United Kingdom, ²Pancosma, Geneva, Switzerland.

The role of GLP-2 in controlling intestinal function in human infants: Regulator or bystander?
D. Sigalet*, Alberta Children’s Hospital / University of Calgary, Calgary, AB, Canada.

Physiology and Endocrinology Symposium
Factors Controlling Puberty in Beef Heifers
Chair: Paul Fricke, University of Wisconsin
290

Management implications associated with the onset of puberty and persistence of estrous cycles in beef heifers.
G. C. Lamb¹, K. M. Bischoff¹, T. E. Black¹, V. R. G. Mercadante¹, G. H. L. Marquezini¹, R. F. Cooke², and N. DiLorenzo³, ¹North Florida Research and Education Center, University of Florida, Marianna, ²Eastern Oregon Agricultural Research Center, Oregon State University, Burns.

How SNP chips will advance our knowledge of factors controlling puberty and aid in selecting replacement females.
W. M. Snelling¹, R. A. Cushman¹, G. L. Bennett¹, J. W. Keele¹, L. A. Kuehn¹, T. G. McDaneld¹, R. M. Thallman¹, and M. G. Thomas³, ¹USMARC, USDA-ARS U.S. Meat Animal Research Center, Clay Center, NE, ²New Mexico State University, Las Cruces.

Nutritional aspects of developing replacement heifers.
R. N. Funston*, University of Nebraska West Central Research and Extension Center, North Platte.

Harnessing basic knowledge of factors controlling puberty to improve synchronization of estrus and fertility in heifers.
G. A. Perry*, South Dakota State University, Department of Animal and Range Sciences, Brookings.
Physiology and Endocrinology I
Chair: Kristi Kammack, University of Wyoming
393

2:00 PM 537
Estimation of heritability and non-genetic factors influencing calf temperament.
A. N. Loyd*, B. G. Riley, D. A. Neuendorff, A. W. Lewis, R. C. Vann, T. H. Welsh, and R. D. Rande,
Texas AgriLife Research, College Station, Texas AgriLife Research, Overton, MAFES, Mississippi State University, Raymond.

2:15 PM 538
Effects of transportation and lipopolysaccharide (LPS) challenge on vaginal temperature in crossbred heifer calves.
A. N. Loyd*, R. C. Vann, J. P. Banta, T. H. Welsh, J. A. Carroll, and R. D. Rande,
Texas AgriLife Research, College Station, MAFES, Mississippi State University, Raymond, Texas AgriLife Extension, Overton, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, Texas AgriLife Research, Overton.

2:30 PM 539
Chromium supplementation enhances the metabolic response of steers to lipopolysaccharide (LPS) challenge.
A. N. Loyd*, R. C. Vann, J. P. Banta, T. H. Welsh, J. A. Carroll, and R. D. Rande,
Texas AgriLife Research, College Station, MAFES, Mississippi State University, Raymond, Texas AgriLife Extension, Overton, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, Department of Animal and Food Sciences, Texas Tech University, Lubbock.

2:45 PM 540
Effects of transportation and lipopolysaccharide (LPS) challenge on body weight and feed intake of crossbred heifers.
A. N. Loyd*, R. C. Vann, J. P. Banta, T. H. Welsh, J. A. Carroll, and R. D. Rande,
Texas AgriLife Research, College Station, MAFES, Mississippi State University, Raymond, Texas AgriLife Extension, Overton, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, Texas AgriLife Research, Overton.

3:00 PM 541
Break

3:15 PM 542
Microbial diversity in bovine papillomatous digital dermatitis in Holstein dairy cows from upstate New York.
T. Santos and R. Bicalho*, Cornell University, Ithaca, NY.

3:30 PM 543
Non-steroidal anti-inflammatory drug administration and repeated muscle biopsies affect the phosphorylation of translation initiation factors.

3:45 PM 544
Infusion of interferon-τ into the uterine vein protects the corpus luteum from prostaglandin F2α induced down-regulation of cell survival genes.
A. Q. Antoniazzi* and T. R. Hansen, Animal Reproduction and Biotechnology Laboratory, Department of Biomedical Sciences, Colorado State University, Fort Collins.

4:00 PM 545
The influence of the addition of heparin binding protein and tissue inhibitors of metalloproteinases-2 to sexed bovine semen on conception rate and pregnancy rate.
Texas A&M University, College Station, Texas AgriLife Research-Overton, Texas AgriLife Research, College Station, College Station, Sexing Technologies, Navasota, TX, Universidad Autonoma de Veracruz, Tuxpan, Veracruz, Mexico, Universidad Nacional Autonoma de Mexico, Cuautitlan, Estado de Mexico, Mexico.

4:15 PM 546
Effects of acclimation to handling on performance, reproductive, and physiological responses of Bos taurus beef heifers.

4:30 PM 547
Effects of temperament on reproductive and physiological responses of beef cows.
Oregon State University–Eastern Oregon Agricultural Research Center, Burns, Oregon State University–Eastern Oregon Agricultural Research Center, Union.

Production, Management and the Environment
Beef Production I
Chair: Shane Gadberry, University of Arkansas
386-387

2:00 PM 547
Relationships between feedlot morbidity, performance, and carcass quality in Angus steers.
M. L. Hands, R. L. Corah, T. T. Marston, D. W. Moser, and C. D. Reinhardt*, Kansas State University, Manhattan, Certified Angus Beef, Manhattan, KS, University of Nebraska, Norfolk.
Impact of beef heifer development systems on ADG, reproduction, and feed efficiency.

Late gestation supplementation impacts primiparous beef heifers and progeny.

Cattle performance comparison in three feedlot facility designs in South Dakota.
B. P. Holland*, E. R. Loe, and R. H. Pritchard, Department of Animal and Range Sciences, South Dakota State University, Brookings.

Season of arrival affects feedlot performance, health, and carcass traits of Angus steers.
M. L. Hands1, T. T. Marston2, L. R. Corah1, D. W. Moser1, and C. D. Reinhardt1*, 1University of Nebraska, Norfolk, 2Certified Angus Beef, Manhattan, KS.

Relationships between feedlot performance, yield grade, and quality grade in Angus steers.
M. L. Hands1, T. T. Marston2, L. R. Corah1, D. W. Moser1, and C. D. Reinhardt1*, 1University of Nebraska, Norfolk, 2Certified Angus Beef LLC, Manhattan, KS.

Relationship of feed efficiency of replacement beef heifers to subsequent feed efficiency as 3-year old suckled beef cows.
T. E. Black1*, K. M. Bischoff2, V. R. G. Mercadante1, G. H. L. Marquezini1, C. C. Chase2, S. W. Coleman2, and G. C. Lamb1, 1North Florida Research and Education Center, University of Florida, Marianna, 2USDA-ARS, SubTropical Agricultural Research Station, Brooksville, FL.

Effect of injectable trace minerals on the humoral immune response to multivalent vaccine administration in beef calves.
J. D. Arthington1* and L. J. Havenga2, 1University of Florida, Range Cattle Research and Education Center, Opa, 2Multimin USA Inc., Fort Collins, CO.

The effect of beta-agonists on feedlot performance and carcass merit in yearling steers.
R. K. Peterson1*, J. J. Wagn1, T. E. Engle1, and T. C. Bryant2, 1Colorado State University, Fort Collins, 2JBS Five Rivers Cattle Feeding, Greeley, CO.

Moderate exercise alters blood constituents, growth performance, and carcass characteristics in finishing heifers.
A. D. Stickel1, L. N. Edwards1, T. A. Houser1, J. R. Jaeger1, T. G. Rozell1, L. D. Hollis1, S. Uwituze1, C. L. Van Bibber1, K. A. Miller1, J. J. Higgins1, and J. S. Drouillard1*, 1Kansas State University, Manhattan, 2Kansas State University, Hays.

Ruminant Nutrition
Beef: Proteins and Carbohydrates
Chair: Sara Winterholler, South Dakota State University

Acidosis challenge effects on ruminal pH and temperature in beef cattle.
D. L. Christensen1*, J. L. Wahrmund, A. K. Sexten, C. L. Goad, C. R. Krehbiel, and C. J. Richards, Oklahoma State University, Stillwater.

Fatty acid profile of muscle and subcutaneous fat of Red Norte bulls fed ionophores and lipids sources.

Effects of energetic supplementation strategies on performance of growing cattle grazing tropical forage and on animal performance during the feedlot finishing phase.
L. R. D. Agostinho Neto, J. R. R. Dorea, V. N. Gouvea, A. L. Marra, and F. A. P. Santos1*, University of Sao Paulo/ESALQ, Piracicaba, São Paulo, Brazil.

Effect of rate of gain on fat deposition during grazing and final carcass characteristics in growing beef cattle.
E. D. Sharman1*, P. A. Lancaster, C. P. McMurphy, G. G. Hilton, C. R. Krehbiel, and G. W. Horn, Oklahoma Agricultural Experiment Station, Stillwater.

Nutrient mass balance and performance of feedlot cattle fed barley based diets with and without dried distillers grains plus solubles.
E. M. Hussey1*, G. E. Erickson2, R. E. Peterson3, and L. O. Burciaga-Robles2, 1University of Nebraska-Lincoln, Lincoln, 2Feedlot Health Management Services Ltd., Okotoks, AB, Canada, 3Western Feedlots Ltd., High River, AB, Canada.
3:15 PM 562 Effects of levels of energetic supplementation on forage intake and ruminal fermentation in beef cattle grazing tropical pastures. 
J. R. R. Dórea1, L. R. D. Agostinho Neto1, V. N. Gouvêa1, M. A. C. Danés1, L. G. R. Pereira1, J. A. G. Azevêdo1, and F. A. P. Santos*,1, 1University of Sao Paulo/ESALQ, Piracicaba, São Paulo, Brazil, 2Embrapa Dairy Cattle, Juiz de Fora, Minas Gerais, Brazil, 3State University of Santa Cruz, Ilhéus, Bahia, Brazil.

3:30 PM 563 The relationship between rumen acidosis resistance and expression of genes involved in regulation of intracellular pH in rumen epithelial cells in steers. 
N. Schlau*, L. L. Guan, and M. Oba, University of Alberta, Edmonton, AB Canada.

3:45 PM 564 Evaluation of diet net energy calculations on intake and gain compared to prediction equations for finishing steers. 
M. F. Wilken*, L. L. Berger, G. E. Erickson, and K. J. Hanford, University of Nebraska-Lincoln, Lincoln.

4:00 PM 565 Effect of finishing system (feedlot or pasture) on energy requirements of Zebu cattle. 
M. L. Chizzotti*, M. I. Marcondes*, S. C. Valadares Filho2, M. P. Gionbelli3, P. V. R. Paulino2, and M. F. Paulino2, 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Universidade Federal de Viçosa, Viçosa, MG, Brazil.

4:15 PM 566 A chemical evaluation of the chemical composition of four corn milling co-products with focus on fatty acids. 
C. S. Dose*, P. J. Kononoff*, T. C. Jenkins1, L. O. Tedeschi3, and K. Karges4, 1Department of Animal Science, University of Nebraska-Lincoln, Lincoln, 2Department of Animal and Veterinary Sciences, Clemson University, Clemson, SC, 3Department of Animal Science, Texas A&M University, College Station, 4Dakota Gold Research Association, Sioux Falls, SD.

4:30 PM 567 Evaluation of polyclonal antibodies in cattle adapted or not to highly fermentable carbohydrate diets. 
T. Barros1, C. Marino*1, R. Pacheco2, F. Ferreira1, F. Perna1, E. Cassiano1, M. Martins1, M. Arrigon12, and P. Rodrigues3, 1University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, 2University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil.

4:45 PM 568 Evaluation of polyclonal antibodies in cattle adapted or not to highly fermentable carbohydrate diets after an acidosis challenge. 
T. Barros1, C. Marino*1, R. Pacheco2, F. Ferreira1, F. Perna1, E. Cassiano1, M. Martins1, M. Arrigon12, and P. Rodrigues3, 1University of Sao Paulo, FMVZ-USP, Pirassununga, Sao Paulo, Brazil, 2University of Sao Paulo State, FMVZ-UNESP, Botucatu, Sao Paulo, Brazil.

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**Ruminant Nutrition**

**Dairy: Ruminal Metabolism**

**Chair:** Juan Loor, University of Illinois

293

2:00 PM 569 Optimizing barley grain feeding and processing for postmodern dairy cows. 
A. Nikkhah*, University of Zanjan, Zanjan, Iran.

2:15 PM 570 Potassium reduces the accumulation of trans-10, cis-12 conjugated linoleic acid and trans-18:1 in continuous cultures of mixed ruminal microorganisms regardless of dietary fat level. 
T. C. Jenkins*, E. Block2, and P. H. Morris1, 1Clemson University, Clemson, SC, 2Arm & Hammer Animal Nutrition, Princeton, NJ.

2:30 PM 571 Metabolic effects of feeding supplemental tallow to lactating Nili-Ravi buffalo. 

2:45 PM 572 Use of a mechanistic, dynamic model of metabolism to investigate the biological basis for variation in genetics of feed conversion efficiency in lactating dairy cattle. 
J. Onken1, G. Hobgood2, S. L. Sheilds*, and J. P. McNamara1, 1Washington State University, Pullman, 2North Carolina State University, Raleigh.

3:00 PM 573 Ruminal Mg transport and assessment of Mg intake in dairy cows: Two sides of one coin. 
H. Martens* and F. Stumpff, Dept. of Veterinary Physiology/Freie Universitaet Berlin, Berlin-Germany.

3:15 PM 574 Effects of direct-fed microbes and their combinations with yeast culture on in vitro rumen fermentation characteristics. 
S. P. Doto* and J. X. Liu, Institute of Dairy Science, College of Animal Sciences, Zhejiang University, Hangzhou, P.R. China.
Effects of grain, fructose and histidine on ruminal pH, fermentation products and histamine in an induced subacute acidosis protocol.
H. M. Golder,^1,2, P. Celi,^1, A. R. Rabiee,^1,2, C. Heuer,^3, E. Bramley,^4, D. W. Miller,^5, R. King,^5, and I. J. Lean,^1,2
^1University of Sydney, Faculty of Veterinary Science, Camden, New South Wales, Australia, ^2SBScibus, Camden, New South Wales, Australia, ^3Massey University, Epicentre, Institute of Veterinary, Animal and Biomedical Sciences, Palmerston North, New Zealand, ^4Murdoch University, School of Veterinary and Biomedical Sciences, Murdoch, Western Australia, Australia, ^5Dairy Australia, Southbank, Victoria, Australia.

Dry matter intake, ruminal pH and fermentation capacity of rumen fluid in heifers fed temperate pasture, total mixed rations or both.
A. Santana,^1, J. Ubilla,^1, M. Berrutti,^1, T. Konrath,^1, M. Aguerre,^1, A. Britos,^2, C. Cajarville,^2, and J. L. Repetto,^1

Protein and fertility in lactating dairy cattle: A meta-analysis and meta-regression.
I. J. Lean,^1,2, P. Celi,^1, J. McNamara,^3, H. Raadsma,^1, and A. Rabiee,^1
^1Faculty of Veterinary Science, The University of Sydney, Camden, New South Wales, Australia, ^2SBScibus, Camden, New South Wales, Australia, ^3Department of Animal Sciences, Washington State University, Pullman.

Effect of increasing proportions of energy concentrates on in vitro gas production estimates.
A. Britos,^1, J. L. Repetto,^1, and C. Cajarville,^1

Hypophagic effects of propionate are greater for cows with elevated hepatic acetyl CoA concentration.
S. E. Stocks and M. S. Allen, Michigan State University, East Lansing.

Effects of added direct-fed microbials on rumen microbial fermentation in continuous culture.
W. L. Braman,^1 and I. Knap, Chr. Hansen Animal Health and Nutrition, Milwaukee, WI, and Horsholm, Denmark.

Small Ruminant Production
Chair: Govind Kannan, Fort Valley State University

Evaluation of weaning hair sheep lambs at 63 or 120 d of age in an accelerated lambing system in the tropics.
R. W. Godfrey and A. M. Hogg, University of the Virgin Islands, Agricultural Experiment Station, St. Croix, VI.

Comparison of two forage systems for performance of lactating doe and kid meat goats in Kentucky.
K. Andries and E. Sherrow, Kentucky State University, Frankfort.

Effect of synchronization protocols (Ovsynch vs 2PG) and GnRH on reproductive performance in goats.
N. Ahmad, H. Riaz, and M. Abdullah, University of Veterinary and Animal Sciences, Lahore, Punjab, Pakistan.

Carcass fat and muscle measurements in terminally sired F1 lambs.
M. R. Mousel, T. D. Leeds, D. R. Notter, H. N. Zerby, S. J. Moeller, and G. S. Lewis, USDA, ARS, US Sheep Experiment Station, Dubois, ID, ^1USDA, ARS, National Center for Cool and Cold Water Aquaculture, Leetown, WV, ^2Virginia Polytechnic Institute and State University, Blacksburg, ^3The Ohio State University, Columbus.

Compositions of volatile compounds in fat tissues from male and female Hu sheep.
Y. J. Peng, J. Lin, and J. X. Liu, Institute of Dairy Science, College of Animal Sciences, Zhejiang University, Hangzhou 310029, P. R. China.

Chemical composition of milk of West African Dwarf (WAD) ewe fed Mexican sunflower leaf meal based diets during early and late lactation.
A. H. Ekeocha, University of Ibadan, Ibadan, Oyo, Nigeria.
Wednesday, July 13
POSTER PRESENTATIONS

Animal Health III
Sponsor: Elanco Animal Health

W1 Effects of low doses lipopolysaccharide infusion on plasma proteome in lactating cows using comparative proteomics.
T. J. Yuan, J. Q. Wang*, Y. X. Yang, D. P. Bu, S. S. Li, and P. Sun, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

W2 Evaluation of endotoxin (LPS) activity in bovine blood using neutrophil dependent chemiluminescence.
S. Kahl*, T. H. Elsasser1, and C. V. Obiezu-Forster2, 1USDA, Agricultural Research Service, Beltsville, MD, 2Spectral Diagnostic Inc., Toronto, ON, Canada.

W3 Evaluation of yeast nucleotides on intestinal barrier function in vitro.
A. Ganner*, M. Werner, S. Henikl, and G. Schatzmayr, BIOMIN Research Center, Tulln, Lower Austria, Austria.

W4 Oral treatment of pregnant cows with lipopolysaccharide and lipoteichoic acid modulated selected plasma metabolites and innate immunity in newborn calves.

W5 Repeated oral administration of lipopolysaccharide and lipoteichoic acid modulated post-treatment plasma metabolites and innate immunity of prepartal dairy cows.

W6 Diets enriched in barley grain treated with lactic acid and heat lowered rumen endotoxin and improved innate immunity in dairy cows.

W7 Oral administration of bacterial lipopolysaccharide and lipoteichoic acid modulated milk composition and efficiency in transition dairy cows.

W8 Oronasal exposure to lipopolysaccharide differentially affected blood metabolites in multiparous dairy cows.

W9 Oral administration of lipopolysaccharide and lipoteichoic acid modulated plasma metabolites and decreased the risk of metabolic diseases in periparturient dairy cows.

W10 Bovine acute-phase response following different doses of corticotrophin-releasing hormone (CRH) challenge.
R. F. Cooke*, J. A. Carroll2, F. N. T. Cooke1, B. I. Cappellozza1, C. Trevisanuto1, V. D. Tabacow1, J. Dailey1, and D. W. Bohnert1, 1Oregon State University–Eastern Oregon Agricultural Research Center, Burns, 2USDA–ARS Livestock Issues Research Unit, Lubbock, TX.

W11 Feasibility of high immune response technology as a health management tool to characterize immune response profiles of dairy cattle.
L. C. Wagger*, S. Cartwright, and B. A. Mallard, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada.

W12 Influence of blood sample storage temperature and latency until analyzed on various ex vivo innate immune response assays in Holstein heifers.
M. A. Ballou*1 and L. E. Hulbert1,2, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Department of Animal Science, University of California at Davis, Davis.

W13 Caprylic acid fractionation of serum followed by refractometry to predict serum IgG in preweaned calves.
C. Rodríguez1, N. Saborido1, L. Castillejos1, M. Rodríguez1, A. Lago1*, J. Campbell1, J. Quigley1, and J. Polo1, 1APC Europe, S.A., Granollers, Spain, 2Animal Nutrition and Welfare Service, Autonomous University of Barcelona, Barcelona, Spain, 3APC Inc., Ankeny, IA.

W14 Development of a rapid method to estimate IgG in bovine colostrum.
K. M. Morrill*, J. D. Quigley1, A. Lago1, and H. D. Tyler1, 1Iowa State University, Ames, 2APC Inc., Ankeny, IA.
**W15** The effect of treatment with long-acting antibiotic upon arrival at a custom heifer rearing facility on non-specific fever, otitis media, neonatal calf diarrhea complex and growth.
A. L. Stanton*, S. J. LeBlanc, L. K. Fox, J. Wormuth, D. F. Kelton, and K. E. Leslie, 1University of Guelph, Guelph, Ontario, Canada, 2Washington State University, Pullman, 3CY Heifer Farm, Elba, NY.

**W16** Immune status of calves that naturally suckle their dams in dairy farms of Costa Rica.
J. A. Elizondo-Salazar*, J. Sánchez-Salas, J. Rodríguez-Zamora, and A. J. Heinrichs, 1Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica, 2The Pennsylvania State University, University Park.

**W17** Determining the heritable component of dairy cattle foot lesions.
A. M. Oberbauer*, S. L. Berry, J. M. Belanger, and T. R. Famula, Department of Animal Science, University of California, Davis.

**W18** Effects of cold pasteurizing colostrum with formic acid on bacteria counts and calf IgG absorption.
L. A. Vickers* and D. M. Veira, 1Animal Welfare Program, University of British Columbia, Vancouver, British Columbia, Canada, 2Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada.

**W19** Allelic variations in the bovine vitamin D receptor gene: Correlations with periparturient hypocalcemia?
M. Reiche, C. Deiner, A. Mösch, and H. Martens*, Institute of Veterinary Physiology, Faculty of Veterinary Medicine, FU Berlin, Institute of Veterinary Physiology, Faculty of Veterinary Medicine, FU Berlin, Berlin, Germany.

**W20** Strategies to control the cattle tick, Rhipicephalus microplus, in dairy herds in the Brazilian Southwestern Amazon region: Technical recommendations.
L. G. Brito*, F. da Silva Barbieri, and M. C. de Sena Oliveira, 1Embrapa Rondônia, Porto Velho, RO, Brazil, 2Southeast Embrapa, São Carlos, SP, Brazil.

**W21** Ruminal binding characteristics of Mycopurge against various aflatoxins in in vitro.
M. R. Akkaya, M. A. Bal, and V. Akay*, 1Kahramanmaras Sutcu Imam University, Turkey, 2Global Nutritech Ltd., Kocaeli, Turkey.

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**W22** Factors affecting the selling price of calves sold in Texas livestock markets.
K. J. Stutts, M. M. Beverly*, S. F. Kelley, and B. M. Freel, Sam Houston State University, Huntsville, TX.

**W23** Sources of sire-specific genetic variance for birth weight and weaning weight in the Bruna dels Pirineus beef cattle breed.
M. Fina*, L. Varona, J. Piedrafita, and J. Casellas, 1G26, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Departamento de Anatomia, Embriologia y Genética Animal, Universidad de Zaragoza, Zaragoza, Spain.

**W24** Relationships between feed efficiency traits and body weight, age, backfat, rumpfat and circulating serum metabolites in pregnant beef cows.

**W25** Effect of preconditioning days, feeder cattle grade, and sire breed type on growth performance and carcass characteristics of beef cattle participating in a calf to carcass program in southwest Louisiana.
D. M. Gandy*, D. R. Goodwin, T. H. Shields, W. A. Storer, and F. M. LeMieux, McNeese State University, Lake Charles, LA.

**W26** Effect of castration status on arrival of ultra-high risk calves on feedlot performance and health during a 61-d preconditioning program.

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**Beef Species**

**Beef Cattle Production**

**W27** Effects of Bos indicus breeding on plasma pregnancy-associated glycoprotein (PAG) concentrations and fetus size in early gestation.
P. M. Morelli*, D. O. Rae, S. E. Johnson, and A. D. Ealy, 1University of Florida, Department of Animal Sciences, Gainesville, 2University of Florida, Department of Large Animal Clinical Sciences, Gainesville.
W28 Genetic parameters and genetic trends for growth and reproductive traits in a Colombian multibreed beef cattle population.  
O. D. Vergara¹ and M. A. Elzo¹, ², ¹University of Cordoba, Monteria, Colombia, ²University of Florida, Gainesville.

W29 Combining ability of nine tropically adapted and temperate breeds for growth and ultrasound traits in Colombia.  
C. A. Martinez¹, C. Manrique¹, M. A. Elzo², and A. Jimenez¹, ¹Universidad Nacional de Colombia, Bogota, Colombia, ²University of Florida, Gainesville.

W30 Genetic parameters and trends for age at first calving in Brahman cows raised in Brazil.  
J. C. DeSouza¹, M. Silveira¹, M. A. Pereira¹, P. B. Ferraz Filho¹, J. A. DeFreitas¹, R. M. DaSilva¹, C. H. M. Malhado¹,², ³, C. H. M. Cavalaria¹, M. F. Mota¹, H. J. Fernandes¹, and W. R. Lamberson¹, ¹Mato Grosso do Sul Federal University, CPQA/Animal Science, MS, Brazil, ²Student of Msc. of animal science course, UFMS, Campo Grande, Brazil, ³Brazilian Association of Zebu Breeders, Uberaba, Brazil, ⁴Mato Grosso do Sul Federal University, Tres Lagoas, Brazil, ⁵Parand Federal University, Palotina, Brazil, ⁶South Bahia State University, Jequié, Brazil, ⁷Paranaense University - UNIPAR, Umuarama, Brazil, ⁸State University of Mato Grosso do Sul, Aquidauana, MS, Brazil, ⁹University of Missouri, Columbia, ¹⁰Scholarship - CNPQ, Brazil.

W31 Allometric growth study of Guzerá cattle under a performance test on grazing regimen.  
R. C. Sousa¹, I. G. Pereira¹, P. V. R. Paulino², S. D. J. Villela¹, R. A. M. Oliveira¹, A. P. L. Tonaco¹, F. S. Coelho¹, and F. A. Carvalho Neto¹, ¹Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, MG, Brazil, ²Universidade Federal de Viçosa, Viçosa, MG, Brazil, ³Colorado State University, Fort Collins.

W32 Growth curves of Guzerá bulls on grass regimen under performance test.  
R. C. Sousa¹, I. G. Pereira¹, P. V. R. Paulino², A. V. Pires¹, F. F. Silva¹, R. A. M. Oliveira¹, A. P. L. Tonaco¹, and F. A. Carvalho Neto¹, ¹Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, MG, Brazil, ²Universidade Federal de Viçosa, Viçosa, MG, Brazil, ³Colorado State University, Fort Collins.

W33 Variance components in growth traits of Guzerá cattle breed with different models.  
I. S. Silva¹, I. U. Packer², C. M. R. Melo², L. O. C. Silva³, and R. A. A. Torres Junior³, ¹University of Brasilia - UnB, Brasilia /DF, Brazil, ²University of São Paulo - USP/ESALQ, Piracicaba/SP, Brazil, ³University of Santa Catarina - UFSC, Florianópolis/SC, Brazil, ⁴Embrapa Gado de Corte, Embrapa Gado de Corte, Campo Grande/MS, Brazil.

W34 Estimates genetic parameters for growth traits of Guzerá cattle breed by single-trait and two-trait analysis.  
I. S. Silva¹, I. U. Packer², C. M. R. Melo², L. O. C. Silva³, and R. A. A. Torres Junior³, ¹University of Brasilia - UnB, Brasilia /DF, Brazil, ²University of São Paulo - USP/ESALQ, Piracicaba/SP, Brazil, ³University of Santa Catarina - UFSC, Florianópolis/SC, Brazil, ⁴Embrapa Gado de Corte, Embrapa Gado de Corte, Campo Grande/MS, Brazil.

W35 Real-time ultrasound measurements for the selection of growing animals of Bruna dels Pirineus beef cattle breed.  
M. Fina, J. Tarres, and J. Piedrafita*, Grup de Recerca en Remugants, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra (Barcelona), Spain.

W36 Linear B-splines to model longitudinal weight records in Tabapuã cattle.  
G. R. O. Menezes¹,², R. A. Torres³, R. A. A. Torres Júnior³, L. O. C. Silva¹, A. Gondo¹, and R. F. Euclides², ¹Embrapa Beef Cattle, Campo Grande, MS, Brazil, ²Federal University of Viçosa, Viçosa, MG, Brazil.

W37 Genetic variability for calf mortality in Nellore cattle.  
L. C. Magalhães Silva¹, F. Baldi, L. G. Albuquerque, and M. J. R. Paranhos da Costa, São Paulo State University, Unesp, Jaboticabal, São Paulo, Brazil.

W38 Selection effect for growth traits in reproduction energy females of three production cycles.  
I. D. P. Solar Díaz¹,², F. R. de Araujo Neto¹, G. M. Ferreira de Camargo¹, R. Barbosa Lobo¹, and H. N. de Oliveira¹, ¹Sao Paulo State University, Jaboticabal, Sao Paulo, Brasil, ²Sao Paulo University, Ribeirao Preto, Sao Paulo, Brasil.

W39 Effect of model structure on direct and maternal (co)variance and heritability estimates for 210 d weight in Nellore cattle.  
L. Pascoa¹,², A. de los Reyes¹, M. A. Elzo¹, J. L. Ferreira¹, L. A. F. Bezerra¹, and R. B. Lobo¹, ¹Federal Institute of Brasilia, Planaltina, Distrito Federal, Brazil, ²Federal University of Goias, Goiânia, Goiás, Brazil, ³University of Florida, Gainesville, ⁴Federal University of Tocantins, Araguatina, Tocantins, Brazil, ⁵National Association of Farmers and Researchers, Ribeirão Preto, São Paulo, Brazil.

W40 Age of dam as phenotypic source of variation for body weight traits in Nellore beef cattle.  
D. A. Lino¹,², S. Tsuruta¹, I. Misztal¹, E. N. Martins¹, and L. O. C. Silva¹, ¹University of Georgia, Athens, ²State University of Maringá, Maringá, PR, Brazil, ³Embrapa Gado de Corte, Campo Grande, MS, Brazil.

W41 Additive genetic variation of residual feed intake and its components in Nellore cattle.  
M. E. Zerlotti Mercadante¹, A. C. Del Claro, S. F. Martins Bonilha, J. N. dos Santos Gonçalves Cyrrillo, and R. H. Branco, Instituto de Zootecnia, Sertãzinho, São Paulo, Brazil.

W42 Relationships among beef cattle temperament and tenderness traits using repeated performance records.  
T. T. Taxis¹,², W. R. Shafer¹, L. L. Berger¹, D. B. Faulkner¹, J. E. Beever¹, M. M. Rolf¹, D. L. Dow¹, J. F. Taylor¹, C. L. Lorenzen¹, and R. L. Weaver¹, ¹University of Missouri, Columbia, ²American Simmental Association, Bazemore, MT, ³University of Nebraska, Lincoln, ⁴University of Illinois, Urbana.

W43 Carcass and meat palatability trends in cattle ranging from 100% Angus to 100% Brahman.  
W44 Role of cytoplasmic inheritance on preweaning traits in a closed breeding nucleus Angus herd.
J. A. Carrillo* and F. Siewerdt, University of Maryland, College Park.

W45 Heritability and effect of breed and diet on complementary feed utilization traits in Simmental, Angus and crossbreed steers.
N. V. L. Serño*, J. E. Beever1, D. B. Faulkner1, M. Pérez-Enciso1, and S. L. Rodriguez-Zas3,1University of Illinois at Urbana-Champaign, Urbana, 2Universitat Autònoma de Barcelona, Barcelona, Catalonía, Spain.

W46 Comparison of body weight genetic evaluation accuracy by random regression with splines and multi-trait model in Limousins.
M. Lukaszewicz1,2, I. Misztal1, A. H. Nelson1, J. P. Sánchez1, and J. K. Bertrand1, University of Georgia, Athens, 2Institute of Genetics and Animal Breeding, Jastrzebiec, Poland.

W47 Growth curves for buffaloes (Bubalus bubalis) using random regression mixed models with different structures of residual variances.
D. M. Bolivar1,2, M. F. Cerón-Muñoz2, M. A. Elzo3,4, E. J. Ramirez2, and D. A. Agudelo3, National University of Colombia, Medellin, Colombia, 2University of Antioquia, Medellin, Colombia, 1University of Florida, Gainesville, 4Lasallian University Corporation, Caldas, Colombia.

W48 Estimates of genetic and phenotypic trends for body weight traits of Zel sheep obtained by a univariate and multivariate animal model analysis.
H. Mohammadi* and M. Moradi Shahrebabak, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

W49 Genetic and phenotypic correlations between reproduction and production traits in Zandi sheep.
H. Mohammadi* and M. Moradi Shahrebabak, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

W50 Estimation of genetic trend for some reproductive traits in Zandi sheep breed.
H. Mohammadi* and M. Moradi Shahrebabak, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

W51 Estimates of genetic and phenotypic trends for body weight traits of Zel sheep obtained by univariate and multivariate animal model analysis.
H. Mohammadi* and M. Sadeghi, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Breeding and Genetics
Genomic Selection and Whole-Genome Association

W52 Accuracy and bias of multiple-trait genomic evaluations for linear type traits in US Holsteins.
S. Tsuruta*, I. Misztal1, I. Aguilar1, and T. Lawlor1, 1University of Georgia, Athens, 2Instituto Nacional de Investigación Agropecuaria, La Piedras, Canelones, Uruguay, 3Holstein Association USA Inc., Beltsville, VT.

W53 Genomic imputation and evaluation using 342 high-density Holstein genotypes.
P. M. VanRaden1, D. J. Null1, G. R. Wiggins1, T. S. Sonsteegard1, and E. E. Connor1, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2Bovine Functional Genomics Laboratory, ARS, USDA, Beltsville, MD.

W54 Genomic evaluation of Angus-Brahman multibreed cattle for feed efficiency and postweaning growth using the illumina 3k chip.
M. A. Elzo1, C. G. Lamb2, D. D. Johnson1, M. G. Thomas1, I. Misztal1, D. O. Rae1, J. G. Wasdin1, and J. D. Driver1, University of Florida, Gainesville, 2North Florida Research and Education Center, Marianna, 3New Mexico State University, Las Cruces, 4University of Georgia, Athens.

W55 A neural network approach for association between a low-density whole genome SNP marker panel for 19 traits in beef cattle.
E. Hay*, H. Wang1, X. Liu1, B. Woodward1, S. Bauck2, and R. Rekaya1, University of Georgia, Athens, Merial Limited, Duluth, GA.

W56 Whole genome association analyses for ultrasound and carcass merit traits in beef cattle.

W57 Large-scale SNP association analyses for somatic cell score in Canadian Holstein cattle.
H. Li*, Z. Wang1, F. S. Schenk1, S. S. Moore1, and P. Stothard1, University of Alberta, Edmonton, Alberta, Canada, 2University of Guelph, Guelph, Ontario, Canada, 3L’Alliance Boviteq, Saint-Hyacinthe, Québec, Canada.

W58 Comparison of selective genotyping strategies for prediction of breeding values in a population undergoing selection.
A. A. Boligon1,2, N. Long1, L. G. Albuquerque1, K. A. Weigel1, D. Gianola1,3, and G. J. M. Rosa1, 1Department of Animal Sciences, Sao Paulo State University, Jaboticabal, SP, Brazil, 2Department of Animal Sciences, University of Wisconsin, Madison, 3Department of Dairy Science, University of Wisconsin, Madison.
Estimating genomic breeding values in crossbred animals.
E. H. Hay*, S. Smith, and R. Rekaya, University of Georgia, Athens.

Accounting for new mutations in the genomic relationship matrix.

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**Dairy Foods**

**Cheese**

Effect of the use of rennet substitute on composition and yield of Minas Padrão cheese.
J. Camisa¹, S. T. Di Cicco¹, K. Sivieri¹, P. C. B. Vianna*, and C. M. V. B. De Rensis¹, ¹UNOPAR, Londrina, PR, Brazil, ²UNESP, Araraquara, SP, Brazil.

Effects of gelation temperature and cutting time on the rheology and quality of curd made from buffalo milk: A comparison with cows’ milk.
I. Hussain*, J. Yan, A. E. Bell, and A. S. Grandison, Department of Food and Nutritional Sciences, University of Reading, Reading, Berkshire, UK.

Cheese making properties of milk protein concentrate powder as affected by storage at high temperature.
N. Rémillard and M. Britten*, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, (QC), Canada.

Influence of different cheese matrix structures on lipid digestion in a simulated gastro-intestinal environment.
S. Lamothe¹, M.-M. Corbeil¹, S. Turgeon², and M. Britten*, ¹Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, (QC), Canada, ²Dairy Research Centre STELA, Faculty of Agriculture and Food Science, Université Laval, Quebec, (QC), Canada.

Effects of high pressure processing on the chemical, functional and rheological properties of fresh Queso Fresco.

ACE-inhibitory activity of commercial Wisconsin Cheddar cheeses during ripening.

Influence of cooking temperature on the behavior of enterococci and the production of diacetyl in Coalho cheese.

Identification of the main esterase involved in lipolysis by Propionibacterium freudenreichii.
M. C. Abeijón Mukdsi³,4, H. Falentin¹,2, M.-B. Maillard¹,2, R. B. Medina¹,4, S. Parayre¹,2, S.-M. Deutsch¹,2, S. Lortal*¹,2, and A. Thierry¹,2, ¹INRA, UMR1253, Rennes, France, ²Agrocampus Ouest, Rennes, France, ³CERELA-CONICET, Tucumán, Argentina, ⁴Universidad Nacional de Tucumán, Tucumán, Argentina.

Characteristics of the chemical composition and lipolysis during ripening of Emmental cheese.

Oxidative stability of Prato cheese added with lutein.

Comparison of texture and sensory attribute between Gouda cheese and cholesterol-removed Gouda cheese during ripening.
H. J. Jung*, E. J. Ko, and H. S. Kwak, Sejong University, Seoul, South Korea.

Influence of pH on flavor of low fat Cheddar cheese.
M. M. Motawee*¹ and D. J. McMahon*, ¹National Organization for Drug Control and Research, Cairo, Egypt, ²Western Dairy Center, Utah State University, Logan.

Free fatty acid compositions of low-fat and full-fat goat milk cheeses stored under refrigeration for three months.
W. Nouira¹, Z. Guler¹, and Y. W. Park*, ¹Fort Valley State University, Fort Valley, GA, ²Mustafa Kemal University, Hatay, Turkey.

Increasing functionality of low fat mozzarella cheese using polysaccharides.
E. N. Oberg*, W. R. McManus, and D. J. McMahon, Utah State University, Logan.
Dairy Foods
Products

W75 The effects of incorporating sweet potato and peanut flours on sensory properties of probiotic yogurt in Mwanza, Tanzania. S. Hekmat* and S. Varriano, Brescia University College, London, Ontario, Canada.


W77 The physicochemical and sensory properties of milk supplemented with dispersible nanoginseng during storage. Y. J. Ahn* and H. S. Kwak, Sejong University, Seoul, Korea.

W78 Optimum condition for crosslinked β-cyclodextrin and recycling for cholesterol removal in milk and cream. Y. K. Lee* and H. S. Kwak, Sejong University, Seoul, South Korea.


W81 Development and characterization of symbiotic quark cheese. A. F. Carvalho*, M. M. Gonçalves1, G. M. Tavares1, J. Y. Suda1, N. F. Nogueira Silva1, and J. B. P. Chaves1, 1Federal University of Viçosa, Viçosa, MG, Brazil, 2Institut National de la Recherche Agronomique STLO, Rennes, Bretagne, France.

W82 Comparison of quantitative neutral volatile compounds in regular cream cheese and cholesterol-removed cream cheese. S. S. Jeon*, S. J. Lee, and H. S. Kwak, Sejong University, Seoul, Korea.

W83 Comparison of lipolytic and proteolytic changes between commercial bovine milk and caprine milk yogurts stored under refrigeration. J. Oglesby and Y. W. Park*, Fort Valley State University, Fort Valley, GA.

W84 Impact of protein content, total solids, and milk protein solids on the functionality of nonfat yogurt. K. N. Shah* and L. E. Metzger, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

W85 Sensory evaluation of various probiotic yogurts in Mwanza, Tanzania. S. Hekmat1,2, J. Hemsworth1, H. Soltani1, and G. Reid1, 1Brescia University College, London, Ontario, Canada, 2Canadian Research and Development Center for Probiotics, London, Ontario, Canada.

W86 Effect of pasture feeding and dairy cattle breed on vitamin E and β-carotene content in milk. V. M. Marino1, I. Schadt1, S. La Terra1, M. Caccamo1, G. Licitra1,2, and S. Carpino1, 1CorFiLaC, Regione Siciliana, Ragusa, Italy, 2DISPA, Catania University, Catania, Italy.

W87 The fatty acid composition and properties of summer and winter butter. O. Tsíssaryk*, Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine.

W88 Hungarian Trappist (Trapista) cheese production from Holstein and Jersey cows’ milk. L. Varga*, Department of Dairy Science, Institute of Food Science, Faculty of Agricultural and Food Sciences, University of West Hungary, Mosonmagyaróvar, Hungary.


Forages and Pastures
Improving Forage Conservation and Quality

W90 Dry matter yield and silage nutritive value of winter cereals in the southern High Plains. F. E. Contreras-Govea*, H. Gonzalez Garcia*, D. M. VanLeeuwen, and J. Idowu1, 1New Mexico State University, Plant and Environmental Sciences Department, Artesia, 2Universidad Autonoma de Ciudad Juarez, Departamento de Ciencias Veterinarias, Ciudad Juarez, Chihuahua, Mexico, 3New Mexico State University, Agricultural Biometrics Service, Las Cruces, 4New Mexico State University, Extension Plant Sciences Department, Las Cruces.

W91 The effects of substituting corn silage and alfalfa hay with Master Graze on feed intake, milk yield and milk composition. A. Salamone*, A. A. AbuGhzaleh1, C. Stuemke1, R. Atkinson1, and B. Dodd1, 1Southern Illinois University, Carbondale, 2Masterschoice, Anna, IL.
Ruminal degradability of *Albizia lebbeck* silage.

Characterization and identification of *Lactobacilli* stains from tropical grasses.
J. P. S. Rigueira¹, O. G. Pereira⁴, K. G. Ribeiro⁷, A. S. Cezário⁷, and W. F. Souza¹, ²Federal University of Viçosa, Viçosa, Minas Gerais, Brazil, ³Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Minas Gerais, Brazil.

Milk production response to feeding alfalfa silage inoculated with *Lactobacillus plantarum*.
R. E. Muck*, G. A. Broderick¹, A. P. Faciola³, and U. C. Hymes-Fecht¹, ²USDA, ARS, US Dairy Forage Research Center, Madison, WI, ³University of Wisconsin-Madison, Madison.

Biomin BioStabil Plus enhances the fermentation characteristics, aerobic stability, and intake by rams of native tropical grass silage.
C. Rosario¹, A. A. Rodriguez*, and Y. Acosta-Aragon¹, ²University of Puerto Rico, Mayaguez, PR, ³Biomin Holding GmbH2, Herzogenburg, Austria.

Fermentation characteristics and aerobic stability of tropical corn ensiled with additives containing homo-fermentative or hetero-fermentative bacterial strains.
V. Rivera¹, L. Solorzano¹, and A. Rodriguez*, ¹University of Puerto Rico, Mayaguez, PR, ²Chr. Hansen, Fitchburg, WI.

The aerobic stability and dry matter losses of high moisture corn ensiled as whole or ground grain using *Lactobacillus buchneri* alone or in association with *Lactobacillus plantarum*.
R. Coudure¹, J. G. Cazaux¹, F. Skiba¹, E. Chevaux²*, V. Demey², and J. Sindou², ²Arvalis - Institut du végétal, Montardon, France, ³Lallemand SAS, Blagnac, France.

Effect of dry matter density on fermentation and nutrient preservation in brown mid-rib (BMR) corn silage within bunker silos.
K. Griswold¹, P. Craig¹, J. Graybill¹, and R. Ward⁴*, ⁴Penn State Cooperative Extension, Dauphin, ²Cumberland Valley Analytical Services, Maugansville, MD.

Effects of the levels of silage additives on the fermentation quality and in situ digestibility of reed (*Phragmites australis* Cav.) silage harvested at different maturity stages.
B. W. Kim*, K. I. Sung, and J. S. Shin, College of Animal Life Sciences, Kangwon National University, Chunchon, Kangwon-Do, South Korea.

Ruminal parameters of sheep fed corn silage inoculated with *Lactobacillus buchneri* and *L. buchneri* associated with *L. plantarum*.
F. C. Basso*, P. A. R. Salvo, F. H. Kamada, J. P. R. Costas, W. L. da Silva, and R. A. Reis, Animal Science Department, College Agricultural and Veterinary Sciences, São Paulo State University, Jaboticabal, São Paulo, Jaboticabal.

In vitro fermentation on cactus forage (*Opuntia* spp.) inoculated with *Kluyveromices lactis* yeast.
C. Rodríguez-Muela¹, ²D. Díaz-Plascencia¹, P. Mancillas-Flores¹, O. Ruiz-Barrera¹, F. Salvador-Torres¹, G. Corral¹, S. Mena², R. Copado-Garcia¹, and L. Duran¹, ¹Universidad Autónoma de Chihuahua, Chihuahua, México, ²Universidad de Guadalajara, Jalisco, México.

Comparison of an inoculant and enzymes, separate and in combination, on the fermentation of alfalfa silage.
S. J. Z. Hansen* and A. H. Smith, Danisco, Waukesha, WI.

Effects of sodium bisulfate on alfalfa silage preservation.
M. Terré¹, D. Seale¹, C. Knueven¹, and A. Bach**, ¹Institut de Recerca i Tecnologia Agroalimentàries, Colòs de Montbui, Barcelona, Spain, ²DS AgriTech Ltd., Reading, Berkshire, UK, ³Jones-Hamilton, Co, Wolbridge, OH, ⁴Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain.

Nutritive value and fermentation parameters of ‘Tifton 85’ bermudagrass and ‘Mulato II’ brachiariagrass silage in Florida.
A. D. Aguiar*, D. Seale¹, L. Solorzano¹, ²University of Puerto Rico, Mayaguez, PR, ³Penn State Cooperative Extension, Dauphin, ⁴Penn State Cooperative Extension, Reading, Berkshire, UK.

Effect of new mixtures of silage additives in grass and maize on fermentation quality and aerobic stability.
J. Jatkauskas¹, V. Vrotniakiene¹, C. Ohlsson¹, and B. Lund**, ¹Institute of Animal Science of Lithuanian University of Health Sciences, Baisogala, Lithuania, ²Chr Hansen A/S, Hoersholm, Denmark.

Identification and characterization of spoilage yeasts from high moisture corn and corn silages.
M. C. Santos¹, J. R. D. Joerger¹, G. D. Mechör¹, and L. Kung¹, ¹University of Delaware, Newark, ²Elanco Animal Health, Greenfield, IN.

Ruminal parameters of cattle fed corn silage inoculated with microbial additive.
P. A. R. Salvo*, F. C. Basso, F. H. Kamada, J. V. Yamaguchi, V. V. Naves, and R. A. Reis, Animal Science Department, College Agricultural and Veterinary Sciences, São Paulo State University, Jaboticabal, São Paulo, Brazil.

Investigation of microbial additives on fermentation quality of alfalfa silage.
F. Kazemi, M. Dehghan-Banadak*, A. Zali, and K. Rezayazdi, Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran, Karaj, Tehran, Iran.
W109 Volatile organic compounds emissions from different silages and cattle feed. I. L. Malkina¹, R. B. Franco², A. Kumar³, P. G. Green⁴, and F. M. Mitloehner⁵, ¹Department of Animal Science, University of California-Davis, ²Crocker Nuclear Laboratory, University of California-Davis, Davis, ³Department of Civil and Environmental Engineering, University of California-Davis, Davis.

W110 Production and quality of corn silage cultivated on integrated crop-livestock-forest system in a Cerrado region of Minas Gerais, Brazil. M. C. M. Vianaª, W. Botelhoª, P. A. Vianaª, D. S. Queirozª, E. A. Silvaª, M. S. Vianaª, and C. G. Guimarães³, ¹EPAMIG - Minas Gerais Agricultural Research Corporation, Belo Horizonte, Minas Gerais, Brazil, ²Embrapa Maize and Sorghum, Sete Lagoas, Minas Gerais, Brazil, ³UFVJM University, Diamantina, Minas Gerais, Brazil, ⁴FEAD University, Belo Horizonte, Minas Gerais, Brazil.

W111 Effect of molasses, starch and enzyme enrichment of sorghum and corn silage on chemical composition and rumen degradability. M. Dehghyan-Banakady*, M. Ghiasvand, and S. Sadeghi, Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

W112 Effect of processed and unprocessed canola straw on growth performance, feeding behavior and rumen metabolites in Holstein feedlot calves. M. Ghiasvand, M. Dehghyan-Banakady*, and K. Reyazadzhi, Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

W113 Kinetics of solid-state fermentation of waste peach (Prunus persica) to be used as animal feed. Y. Castillo¹, O. Ruiz², J. C. Gomez³, E. Perú¹, H. Gonzalez¹, A. Orozco¹, C. Angulo¹, I. Ramos³, and M. R. Murphy⁴, ¹División multidisciplinaria, UACJ, Nuevo Casas Grandes, Chihuahua, Mexico, ²Facultad de Zootecnia y Ecología, UACH, Chihuahua, Chih., Mexico, ³Instituto de Ciencia Biológicas, UACJ, Ciudad Juárez, Chihuahua, Mexico, ⁴Animal Science Department, University of Illinois, Urbana.

W114 Chemical additives on sugarcane ensilage: Fermentation parameters, digestibility and intake by sheep. A. F. Pedroso¹, S. N. Esteves¹, W. Barioni¹, G. B. Souza¹, C. Carbello¹, and G. G. Chiquitini², ¹Brazilian Agricultural Research Corporation - Embrapa, São Carlos, SP, Brazil, ²Fund. Educacional de Andradina; Andradina, SP, Brazil.

W115 Effects of the form of applying virgin lime and the treatments duration on the temperature and pH of sugarcane. E. Z. Ramos*, M. D. S. Oliveira, A. C. Rego, M. P. R. Sforcini, and V. B. Ferrari, UNESP, Jaboticabal, São Paulo, Brazil.


W117 In vitro ruminal fermentation of dairy cows diets with eight yeast strains isolated from apple byproducts. D. Díaz-Plascencia¹, C. Rodríguez-Muela¹, P. Mancillas-Flores¹, F. Salvador-Torres¹, C. Arzola¹, L. Durán¹, J. Jiménez¹, and S. Mená¹, ¹Universidad Autónoma de Chihuahua, Chihuahua, México, ²Universidad de Guadalajara, Jalisco, México.

W118 Effect of exogenous fibrolytic enzymes on in vitro ruminal fermentation kinetics and energy utilization of three Mexican tree fodder species. D. López¹, R. Rojo¹, A. Z. M. Salem¹, J. Cedillo-Monroy¹, B. Albarrán¹, A. González², J. L. Martínez-Benítes³, J. Morales-Díaz¹, and J. Tinoco-Jaramillo¹, ¹Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, ²Universidad Autónoma de Tamaulipas, Cd. Victoria, Tamaulipas México.

W119 Effects of pH and temperature on fibrolytic enzyme activities of various commercial exogenous enzyme preparations. K. G. Arriola¹, J. J. Romero Gomez, and A. T. Adesogan, Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville.

W120 Fiber digestibility of cool-season grasses. T. W. Downing*, Oregon State University, Corvallis.


W122 Effect of crude protein content on intake and digestion of coastal Bermuda grass hays by horses. C. L. Spurgin, J. A. Coverdale, K. N. Wince⁴, and T. A. Wickersham, Texas A&M University, College Station.


W125 Processed and unprocessed canola straw in Holstein male calves diets changed blood parameters and carcass characteristics. M. Ghiasvand, K. Reyazadzhi, and M. Dehghyan-Banakady*, Animal Science Department, Campus of Agricultural and Natural Resources, University of Tehran, Karaj, Tehran, Iran.
Chromium acetate induces adipogenesis of bovine intramuscular adipocytes through reduced phosphorylation of adenosine monophosphate–activated protein kinase α.

Palmitoleic acid regulation of lipid metabolism in primary bovine adipocytes could involve genes associated with fatty acid oxidation.
A. K. G. Kadegowda*, T. A. Burns, S. L. Pratt, and S. K. Duckett, Clemson University, Clemson, SC.

Effect of anabolic implant and quality grade on lipogenic gene expression in subcutaneous adipose tissue.
S. K. Duckett*, S. L. Pratt, and J. W. Long, Clemson University, Clemson, SC.

Signaling pathways mediating the effects of insulin-like growth factor-I on proliferation, protein synthesis, and protein degradation in bovine satellite cells.

Effects of energy intake and age on the expression of adipogenic genes in subcutaneous and intramuscular fat in bovine Spanish Pirenaica breed.

Age post weaning but not birth weight and sex affects the small intestinal glutathione redox status of piglets.
J. Michiels*1,2, E. Claeyss1, A. Ovyn2, and S. De Smet3, 1Faculty of Biosciences and Landscape Architecture, University College Ghent, Ghent, Belgium, 2Laboratory for Animal Nutrition and Animal Product Quality, Department of Animal Production, Ghent University, Melle, Belgium.

Feed restriction alters reactivity of body fat after catabolic stimulation in growing pigs.

M. Mohammadi*, A. Towhidi, H. Moravej, and A. Zareh Shahne, Department of Animal Science, University of Tehran, Karaj, Alborz, Iran.

Effects of dietary supplementation of sodium stearoyl-2-lactylate in a low-energy density diet on growth performance, blood profiles, and relative organ weight in broilers.
S. M. Hong*, J. P. Wang, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.

Insulin-like growth factor-I (IGF-I), IGF binding proteins (IGFBP), and growth hormone receptor (GHR) mRNA concentration in fetal liver and duodenum in response to variable maternal nutrition during gestation.
M. Field*, R. Anthony, T. Engle, S. Archibeque, and H. Han, Colorado State University, Fort Collins.

Effects of variable maternal undernutrition on uterine and umbilical IGF-I, insulin, and ghrelin concentrations in near-term sheep twin pregnancies.
M. Field*, R. Anthony, T. Engle, S. Archibeque, and H. Han, Colorado State University, Fort Collins.

Transfer of omega-3 fatty acids from dams to calves in dairy cows.
M. Zachut*1,2, A. Romanenko1,2, H. Lehrer1, A. Arieli1, and U. Moallem2, 1Agriculture Research Organization, Bet Dagan, Israel, 2Faculty of Agriculture, Hebrew University, Rehovot, Israel.

Temporal changes in the proteome of the uterine histotroph in cattle.
M. P. Mullen*, A. C. O. Evans2, G. Elia3, M. Hilliard4, N. Forde5, M. H. Parr3, M. G. Diskin1, and M. A. Crowe2, 1Animal and Bioscience Research Department, Animal and Grassland Research and Innovation Centre, Teagasc, Athenry, Co. Galway, Ireland, 2School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin , Ireland, 3Conway Mass Spectrometry Resource, University College Dublin, Belfield, Dublin, Ireland.

Effect of maternal diet on the ontogenetic development of the hepatic proteome in intrauterine growth-restricted porcine offspring.
M. Peters, B. Kuhla, I. S. Lang, E. P. Rudolph, and C. C. Metges*, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

Changes in plasma amino acid concentrations in preterm and term born calves.
J. Steinhoff-Wagner*, S. Görs, J. Flor, C. C. Metges, and H. M. Hammon, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

Placental and fetal plasma amino acid uptake and release in mid and late pregnancy of gilts fed limited- and excess-protein diets associated with intrauterine growth retardation (IUGR).
Lactation Biology 2

W142 Hormonal regulation of suspected components of bovine IgG1 transcytosis mechanism in primary bovine mammary cells in vitro. A. Stark1, E. Vaschkova2, O. Wellnitz2*, R. M. Bruckmaier1, and C. R. Baumrucker1.1, Veterinary Physiology, Vetsuisse Faculty, University of Bern, Switzerland; 2Trakia University, Stara Zagora, Bulgaria; 3Penn State University, State College.

W143 Reducing metabolic stress of dairy cows during the transition period by partial milking or nursing. É. Carbonneau1*, A.-M. De Passillé1, J. Rushen1, B. G. Talbot1, and P. Lacasse1, 1Université de Sherbrooke, Sherbrooke, QC, Canada; 2AAFC-Pacific Agri-Food Research Centre, Agassiz, BC, Canada; 3AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.


W147 Effect of prolactin-release inhibition on milk production and mammary gland involution at drying-off. S. Ollier*, X. Zhao2, and P. Lacasse1, 1AAFC-Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada; 2Department of Animal Science, McGill University, Sainte-Anne-de-Bellevue, QC, Canada.

W148 Expression of novel, putative stem cell markers in prepubertal and lactating bovine mammary glands. (see Abstract 78). R. K. Choudhary1, C. M. Evock-Clover2, and A. V. Capuco1, 1Department of Animal Sciences, University of Maryland, College Park; 2Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD.

W149 Putative stem/progenitor cell markers in lactating and re-developing bovine mammary glands. E. Brijs*, K. Singh, and A. Molenaar, AgResearch Ltd., Ruakura Research Centre, Hamilton, New Zealand.


Meat Science and Muscle Biology

W151 Traceability of animal byproducts in quail (Coturnix coturnix japonica) tissues using carbon-13 and nitrogen-15 stable isotopes. C. Mori1*, E. A. Garcia1, C. Ducatti1, J. C. Denadia1, and K. Pelicia1, 1São Paulo State University, Botucatu, São Paulo, Brazil; 2São Paulo State University, Registro, São Paulo, Brazil.

W152 Meat quality of Pelibuey sheep finished with different levels of alfalfa. V. Resendiz-Cruz1, O. Hernandez-Mendo1, J. Gallegos-Sanchez1, I. Guerrero-Lagarreta2, P. A. Martinez-Hernandez2, and G. Aranda-Osorio1, 1Colegio de Postgraduados, Montecillos, Estado de Mexico, Mexico; 2Universidad Autonoma Metropolitana-Iztapalapa, Mexico D.F., Mexico; 3Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico.

W153 Meat quality of lambs fed fresh or dehydrated spineless cactus (Opuntia ficus-indica). M. I. Aguilar-Yañez1, O. Hernandez-Mendo1, G. Aranda-Osorio1*, J. E. Ramirez-Bribiesca1, I. Guerrero-Lagarreta3, and M. M. Crosby-Galvan1, 1Colegio de Postgraduados, Montecillos, Estado de Mexico, Mexico; 2Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico; 3Universidad Autonoma Metropolitana-Iztapalapa, Mexico D.F., Mexico.

W154 Qualitative characteristics of meat from lambs fed with sunflower seeds and vitamin E. F. A. Almeida1*, A. G. Silva Sobrinho1, G. M. Manzi1, N. L. L. Lima1, N. M. B. L. Zeola1, V. Endo1, and J. C. Barbosa1, Universidade Estadual Paulista - Unesp/ Campus de Jaboticabal, Jaboticabal, São Paulo, Brasil.

W155 Effects of nutritional plane and selenium supply during gestation in primiparous ewes on offspring skeletal muscle development. C. A. Schwartz1*, W. L. Keller1, T. L. Neville1, L. P. Reynolds1, D. A. Redmer1, A. M. Meyer1, C. J. Hammer1, K. A. Vonnahme1, J. S. Caton1, and K. R. Maddock-Carlin1, Department of Animal Sciences, North Dakota State University, Fargo.

W156 Maternal dietary protein affects transcriptional regulation of myostatin gene distinctively at weaning and finishing stages in skeletal muscle of Meishan pigs. X. Liu1, J. Wang1, R. Li1, X. Yang1, Q. Sun1, and R. Zhao*, Nanjing Agricultural University, Nanjing, P. R. China.
Linear mixed models built with the stepAIC function in the R environment for evaluation of TPA and WBSF.
A. Dufek*1, J. Subrt1, and J. Simeonovova1; 1Research Institute for Cattle Breeding, Ltd., Vikyrovice, Czech Republic, 2Agriresearch Rapotin Ltd., Vikyrovice, Czech Republic, 3Mendel University in Brno, Brno, Czech Republic.

Effect of kidney matrix on the detection of β-lactam and tetracycline residues by UPLC-MS/MS.
M. P. Almeida1,2, M. O. Leite*1, S. V. Cançado2, M. R. Souza2, and M. M. O. P. Cerqueira2; 1Lanagro-MG/Ministério da Agricultura, Pecuária e Abastecimento, 2Escola de Veterinário - Universidade Federal de Minas Gerais.

Extent of μ-calpain autolysis differs depending on the extent of destructered tissue in the ham.
M. Müller1, C. Biolley2, P. Silacci2, and G. Bee*3; 1Agroscope Liebefeld Posieux Research Station (ALP), Posieux, Switzerland, 2Swiss College of Agriculture, SHL, Zollikofen, Switzerland.

Early adaptation of sarcoplasmic reticulum Ca2+ pump in bovine myofiber under chronic low-frequency electrical stimulation.
T. Sakurada*1, E. Kitagawa1, M. Miyake1,2, S. Ohwada1, H. Aso1, and K. Watanabe1; 1Tohoku University, Sendai, Japan, 2The University of Tokushima, Tokushima, Japan.

Effects of temperament classification on carcass characteristics, tenderness and value in Angus-based composite steers.
J. W. Behrens*1, R. K. Miller1, D. S. Hale1, J. T. Walter1, J. C. Bailey1, A. N. Hafia1, T. Machado2, L. O. Tedeschi1, and G. E. Carstens1; 1Texas A&M University, College Station, 2Texas A&M University at Kingsville, Kingsville.

Rump measurements as related to others carcass traits.
M. N. Bonin*1, S. L. Silva1, J. B. S. Ferraz2, D. P. D. Lanna2, F. Manicardi2, R. C. Gomes1, M. H. A. Santana1, V. N. Barbosa1, F. Novais1, J. H. A. Campo2, and F. Syuifi1; 1University of Sao Paulo, College of Animal Science and Food Engineering, Pirassununga, Sao Paulo, Brazil, 2University of Sao Paulo, College of Agricultural Sciences, Piracicaba, Sao Paulo, Brazil.

Effect of finishing heifers on tall fescue, tall fescue with grain, or alfalfa on: I. carcass and LM quality.
S. K. Duckett*1, M. C. Miller1, T. A. Burns1, and M. L. Wahlberg1; 1Clemson University, Clemson, SC, 2Virginia Tech University, Blacksburg.

Effect of finishing heifers on tall fescue, tall fescue with grain, or alfalfa on: II. fatty acid composition and lipid oxidation in ground beef.
S. K. Duckett1, M. C. Miller1, T. A. Burns1, and M. L. Wahlberg1; 1Clemson University, Clemson, SC, 2Virginia Tech University, Blacksburg.

Gene expression profile of M. longissimus in Japanese Black, Holstein, and Charolais steers fed a high-energy diet.
E. Albrecht1, S. Ponsuksil11, K. Wimmers1, T. Gotoh1, and S. Maak1; 1Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany, 2Kyushu University, Kyu Agricultural Research Center, Kuju-cho, Oita, Japan.

Effect of genotype on fatty acid composition of bovine muscles fattened with maize silage and flaxseed supplemented concentrate.
G. Hollo*1, T. Somogyi1, K. Loki1, I. Anton2, and I. Hollo1; 1Kaposvár University, 2Research Institute for Animal Breeding and Nutrition.

Quality characteristics of dried meat laver made from different beef muscle types.
G. D. Kim*1, E. Y. Jung1, H. U. Seo1, J. Y. Jeong1, S. J. Hur2,3, H. S. Yang1, and S. T. Joo1; 1Division of Applied Life Science (BK21 Program), Gyeongsang National University, Jinju, Republic of Korea, 2Swine Scientific and Technology Center, Gyeongnam National University of Science and Technology, Jinju, Republic of Korea, 3College of Biomedical and Health Science, Department of Applied Biochemistry, Konkuk University, Chungju, Republic of Korea.

Carcass characteristics of bullocks of different genotype finished under feedlot conditions.
O. V. Vazquez-Mendoza, G. Aranda-Ortiz1, M. Huerta-Braavo, E. J. Maldonado-Siman, and J. C. Garcia-Ortiz, Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico.

Relationship between meat quality and the expression of related genes in the muscle of two different genetic groups of cattle.
J. Giusti1, E. P. Castan1, S. R. Baldin1, M. D. B. Arrigoni1, M. Dal Pai-Silva1, and H. N. Oliveira*1; 1State University of Sao Paulo, Jaboticabal, Sao Paulo, Brazil, 2State University of Sao Paulo, Botucatu, Sao Paulo, Brazil.

Measurement of loin muscle in the carcass of Nellore breed on Brachiaria brizantha ‘Marandu’ with two levels of concentrate supplementation.
S. L. S. Cabral Filho*1, R. V. Oliveira1, J. M. S. Diogo1,2, R. A. Mandarino1, C. F. Lobo1, F. A. Oliveira1, and G. S. Firmino1; 1Universidade de Brasilia, Brasilia, Distrito Federal, Brasil, 2Fazenda Experimental Agua Limpa, Brasilia, Distrito Federal, Brasil.

Frame size and sex effects on meat quality characteristics of Nellore cattle.

Carcass traits obtained at the fifth rib level to predict retail cuts in Nellore (B. indicus) cattle.
J. L. F. Souza1, S. L. Silva, R. C. Gomes, M. N. Bonim, P. Z. Silva Neto, and P. R. Leme, Universidade de Sao Paulo/ Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, Sao Paulo, Brazil.
The influence of two levels of supplementation on the yield of hindquarter cuts of Nellore in *Brachiaria brizantha* ‘Marandu’.
R. V. Oliveira*, A. C. de Queiroz, F. D. de Resende, L. A. de Miranda Gomite, P. B. Costa, and W. da Silva Cotrim, *Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil,* Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.

Influence of two levels of supplements on the characteristics of cuts yields of carcass in Nellore cattle grazing *Brachiaria brizantha* ‘Marandu’.

Effect of different levels of whole raw soybean grain on performance and meat characteristics of feedlot finished Nellore steers.

Genetic group and slaughter weight influence on meat color of feedlot cattle.
R. Mello*, A. C. de Queiroz, F. D. de Resende, L. A. de Miranda Gomite, P. B. Costa, and W. da Silva Cotrim, *Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil,* Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.

C18:1,2,3 fatty acid isomers from intramuscular fat influenced by genetic group and slaughter weight.
R. Mello*, A. C. de Queiroz, F. D. de Resende, D. P. D. Lanna, M. H. de Faria, and E. da Costa Eifert, *Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil,* Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, Universidade de São Paulo – Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil.

Fatty acids profile of intramuscular fat from crossbreed young bulls slaughtered at different body weights.
R. Mello*, A. C. de Queiroz, F. Dutra de Resende, D. P. D. Lanna, M. H. de Faria, and E. da Costa Eifert, *Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil,* Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, Universidade de São Paulo – Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil.

Effects of modified wet corn distillers grains containing 6.7% fat on beef quality and rib fat composition.

Diet and genotype effects on the quality index of beef Nellore and F1 Nellore × Brahman produced in feedlot.

Beef quality parameters of Nellore bulls finished with cottonseed cake as fat source.

Meat tenderness of Nellore cattle classified for residual feed intake.

Nonruminant Nutrition

Health

Effects of purified zearalenone on serum reproductive hormone, immunoglobulin, antibody titer and spleen pro-inflammatory cytokines mRNA in young gilts.
S. Z. Jiang*, Z. B. Yang, W. R. Yang, S. L. Johnston, and F. Chi, Department of Animal Sciences and Technology, Shandong Agricultural University, Taian, Shandong, China, Amlan International, Chicago, IL.

Ameliorate effect of Calibrin Z enterosorbent on serum reproductive hormone, immunoglobulin, antibody titer in young pigs fed purified zearalenone.
S. Z. Jiang, Z. B. Yang, S. L. Johnston, and F. Chi, Department of Animal Sciences and Technology, Shandong Agricultural University, Taian, Shandong, China, Amlan International, Chicago, IL.
Dietary effect of short-chain organic acids on growth performance, mortality, and development of intestinal lymphoid tissues in young non-medicated rabbits.
C. Romero*, 1, P. G. Rebollar1, A. Dal Bosco2, C. Castellini2, and R. Cardinalli2, 1Universidad Politécnica de Madrid, Spain, 2Università degli Studi di Perugia, Italy.

Casein glycomacropeptide and mannan-oligosaccharides reduce the enterotoxigenic E. coli (ETEC K88) adhesion to IPEC-J2 cell line.
R. G. Hermes*, 1, E. G. Manzanilla1, S. Martin-Orue1, J. F. Perez1, and K. C. Klasing1, 1Universitat Autonoma de Barcelona, Barcelona, Catalonia, Spain, 2University of California, Davis, Davis.

The effects of a galactoglucomannan-arabinoxylan complex on eimeria acervulina infection in broiler chicks.
T. A. Faber*, 1, R. N. Dilger1, A. C. Hopkins1, N. P. Price1, and G. C. Fahey2, 1University of Illinois, Urbana, 2Temple-Inland, Diboll, TX, 1National Center for Agricultural Utilization Research, Peoria, IL.

The effects of feed-borne Fusarium mycotoxins on performance, serum chemistry, and hematology of fryer rabbits.
Y. Liu*, 1, M. A. Hewitt*, M. Brash, and T. K. Smith, University of Guelph, Guelph, Ontario, Canada.

Effects of plant extracts on peripheral blood immune cells and inflammatory mediators of weaned pigs experimentally infected with a pathogenic E. coli.
Y. Liu*, 1, M. Song1, T. M. Che1, J. A. Soares1, D. Bravo1, C. W. Maddox1, and J. E. Pettigrew2, 1University of Illinois, Urbana, 2Pancosma SA, Geneva, Switzerland.

Acute toxicity of aqueous extract of Moringa oleifera leaf in growing poultry.
J. O. Ashong* and D. L. Brown, Cornell University, Ithaca, NY.

Effects of spray-dried plasma on growth and reproductive responses of pregnant mice to lipopolysaccharide as a model for inflammation in sows.
M. Song*, 1, Y. Liu1, J. A. Soares1, J. J. Lee1, T. M. Che1, J. M. Campbell2, J. Polo1, J. C. O’Connor3, and J. E. Pettigrew1, 1University of Illinois, Urbana, 2APC Inc., Ankeny, IA, 3University of Texas Health Science Center, San Antonio.

Effects of spray-dried plasma on immune responses of pregnant mice to lipopolysaccharide as a model for inflammation in sows.
M. Song*, 1, Y. Liu1, J. J. Lee1, J. A. Soares1, T. M. Che1, J. M. Campbell1, J. Polo1, J. C. O’Connor1, and J. E. Pettigrew1, 1University of Illinois, Urbana, 2APC Inc., Ankeny, IA, 3University of Texas Health Science Center, San Antonio.

Wheat bran and casein glycomacropeptide may regulate the immune response of IPEC-J2 cells challenged with enterotoxigenic E. coli (ETEC K88).
R. G. Hermes*, 1, E. G. Manzanilla1, S. Martin-Orue1, J. F. Perez1, and K. C. Klasing1, 1Universitat Autonoma de Barcelona, Barcelona, Catalonia, Spain, 2University of California, Davis, Davis.

Nonruminant Nutrition Management

Importance of evaluating piglet daily weight gain during the first week after weaning.
G. J. M. M. Lima* and L. S. Lopes, Embrapa, Brazil.

Acquisition of garlic conditioned preference enhances the flavor hedonic power of porcine digestive peptides (PDP) in postweaned piglets.
J. Figueroa*1, D. Solà-Oriol1, S. L. Vinokurova1, E. Borda1, and J. F. Pérez1, 1Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, 2Bioibérica, Barcelona, Spain.

Nutrient composition changes in pigs and associated liver from birth to 21 days of age.
Y. L. Ma*, 1, M. D. Lindemann1, J. L. Pierce1, and G. L. Cromwell1, 1University of Kentucky, Lexington, 2Alltech Inc., Nicholasville KY.

Evaluating performance of dairy replacement calves housed in different group numbers with the same space/calf.

Comparison of moisture determination methods for feed ingredients.

The effect of diet and creep feed on feed intake by weanling pigs.
J. Shea, D. A. Gillis, and A. D. Beaulieu*, Prairie Swine Centre, Inc., Saskatoon, SK, Canada.

Effects of creep feed frequency on pre-weaning and post-weaning growth performance and behavior of piglet and sow.
J. H. Cho*, S. Zhang, and I. H. Kim, Dankook University, Cheonan, Choongnam, South Korea.
Nonruminant Nutrition
Mineral

W201 Effect of a partial replacement of limestone by a CaSO₄-zeolite mixture combined with a slight protein reduction on production indices, egg quality and excreta pH in laying hens.
C. Romero*¹, E. M. Onyango², W. Powers³, R. Angel⁴, and T. J. Applegate⁵, ¹Universidad Politécnica de Madrid, Spain, ²East Tennessee State University, ³Michigan State University, ⁴University of Maryland, ⁵Purdue University, IN.

W202 Dietary sources of selenium in nulliparous sows: The importance of vitamin B₆ status for some aspects of antioxidant status and ovulation during the peri-estrus period.
M. Roy*¹,², I. Audet¹, M.-F. Palin¹, H. Quesnel¹, F. Guay², and J. J. Matte², ¹Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ²Laval University, Québec, QC, Canada, ³Institut National de la Recherche Agronomique, St-Gilles, France.

W203 Effects of high dietary selenium supplementation on fasting plasma glucose and lipid profiles of young pigs.
E. Isaacs*, K. Roneker, and X. G. Lei, Cornell University, Ithaca, NY.

W204 Bioavailability of zinc from zinc propionate in chicks.

W205 Effects of copper concentration and source on performance, bile components, copper metabolism and gastrointestinal microbial distribution in nursery swine.
M. A. Arnold*¹,², J. S. Schutz², K. Sellins², R. J. Harrell², and T. E. Engle³, ¹Department of Animal Science, Colorado State University, Fort Collins, ²Novus International Inc., St. Charles, MO.

W206 Different levels of chelated selenium (Se) addition on the performance, and internal and external quality of Japanese quail eggs.
V. C. da Cruz*¹, L. C. Carvalho¹, G. do Valle Polycarpo², L. H. Zanetti², R. F. de Oliveiera¹, D. D. Millen¹, R. G. A. Cardoso¹, A. L. C. Brichi¹, M. L. Poiatti¹, and O. J. Sabbag², ¹São Paulo State University, Dracena Campus, Dracena, São Paulo, Brazil, ²São Paulo State University, Botucatu Campus, Botucatu, São Paulo, Brazil.

W207 Recovery of bone mineralization and strength after a marginal dietary calcium deficiency in growing pigs.
L. A. Iwicki*¹, J. L. Reichert, J. R. Booth, D. K. Schneider, and T. D. Crenshaw, University of Wisconsin, Madison.

W208 Ionomic profile changes in the intestine, liver, kidney, serum and gall bladder contents due to Cu source and concentration.
B. Aldridge*¹, R. F. Power¹, K. A. Dawson², and S. Radcliffe¹, ¹Purdue University, Department of Animal Science, West Lafayette, IN, ²Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY.

W209 Microarray analysis of commonly regulated genes in the jejunum of weanling pigs given dietary Cu proteinate or CuSO₄.
B. Aldridge*¹, R. Xiao², D. Mallonee², R. F. Power¹, K. A. Dawson², and S. Radcliffe¹, ¹Purdue University, Department of Animal Sciences, West Lafayette, IN, ²Center for Animal Nutrigenomics and Applied Animal Nutrition, Nicholasville, KY.

Nonruminant Nutrition
Mineral and Sow Nutrition

W210 A lactation curve model in sows.
A. V. Hansen*¹,², A. B. Strathe¹, E. Kebreab¹, and P. K. Theil², ¹Department of Animal Science, University of California, Davis, ²Department of Animal Health and Bioscience, Faculty of Agricultural Sciences, Aarhus University, Blichers Allé 20, 8830 Tjele, Denmark.

W211 Impact of ergot infested sorghum on the reproductive performance of sows.
G. M. Abdelrahim*², R. C. Richardson¹, and A. Gueye¹, ¹Alabama A&M University, Normal, ²Texas State University, San Marcos, ³Mt. Ida College, Newton, MA.

W212 Improved retention rates and reduced culling for lameness for sows fed a chelated trace mineral blend.
J. Zhao*¹, L. Greiner², G. Allee², M. Vazquez-Annon³, C. D. Knight⁴, and R. J. Harrell⁵, ¹Novus International Inc, St Charles, MO, ²Innovative Swine Solutions, Carthage, IL, ³University of Missouri, Columbia, MO.

W213 A blend of chelated trace minerals improved sow cumulative reproduction and farrowing rate.
J. Zhao*¹, L. Greiner², G. Allee², M. Vazquez-Annon³, C. D. Knight⁴, and R. J. Harrell⁵, ¹Novus International Inc., St Charles, MO, ²Innovative Swine Solutions, Carthage, IL, ³University of Missouri, Columbia.

W214 Improved progeny performance from sows fed a chelated trace mineral blend.
J. Zhao*¹, M. Vazquez-Annon, C. D. Knight, and R. J. Harrell, Novus International Inc, St Charles, MO.
**Physiology and Endocrinology III**

W215  
Comparison of serum progesterone concentrations from new and used CIDR in Holstein heifers.  
J. T. Whitley* and C. S. Whisnant, North Carolina State University, Raleigh.

W216  
Correlation between residual feed intake and metabolic parameters of Nellore heifers.  

W217  
Follicular and oovulatory responses following superovulation treatment with rFSH and HMG in dairy cattle.  
P. Moorthamdollah1, H. Kohram2,3, and A. Nejat-Javaremi1, 1Department of Animal Science, Faculty College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran, 2Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University, Ahvaz, Iran.

W218  
Adipocyte cell turnover in subcutaneous fat of heifers related to adipocyte cell size.  
D. Gernoth, S. Häussler*, H. Akter, and H. Sauerwein, University of Bonn, Germany.

W219  
Effect of short-term supplementation and temporary weaning on follicular liquid composition in first-calved Hereford cows.  
L. Veloz1,2, M. E. Trobo1,2, C. García Pintos1,2, C. Viñoles3, and M. Carriquiy3*, 1School of Agronomy, UdelaR, Montevideo, Uruguay, 2National Research Institute for Agriculture, Tracuarembó, Uruguay.

W220  
Estrus quantification of early lactation cow cervix physiology: An economical farm innovation.  
A. Nikkhah*, M. A. Sirjani, and A. A. Assadzadeh, University of Zanjan, Zanjan, Iran.

W221  
Effects of maternal metabolizable protein level in late gestation on circulating amino acid concentrations in the ewe and the fetus.  
L. A. Lekatz*, M. L. Van Emon2, C. S. Schauer2, K. R. Maddock Carlin1, and K. A. Vonnahme3, 1Center for Nutrition and Pregnancy, Department of Animal Science and Range Sciences, South Dakota State University, Brookings, 2Department of Animal Science, North Dakota State University, Fargo, 3Hettinger Research Extension Center, North Dakota State University, Hettinger, ND.

W222  
Functional genomics and role of integrin beta 5 in cattle fertility.  
L. Koenig1, X. Wang2, A. Kaya3, S. Bridges3, and E. Memili*1, 1Mississippi State University, Mississippi State, 2Alt Gen Inc., Watertown, WI.

W223  
Male goat vocalizations stimulate LH secretion and estrous behavior in sexually experienced but not in sexually inexperienced goats.  

W224  
Profiling bioenergetics and metabolic stress in cells derived from commercially important fish species.  
B. Beck* and A. Fuller, Stuttgart National Aquaculture Research Center, Stuttgart, AR.

W225  
Conjugated linoleic acid and rosiglitazone attenuate lipopolysaccharide-induced TNF-α production by bovine immune cells.  
M. C. Perdomo and L. Badinga*, University of Florida, Gainesville.

W226  
Influence of nitrogen and sulfur intake on bovine uterine pH.  
J. K. Grant*1, P. Steichen2, C. L. Wright2, J. S. Jennings3, and G. A. Perry1, 1Department of Animal and Range Sciences, South Dakota State University, Brookings, 2Department of Animal Science, North Dakota State University, Fargo, 3Alltech Animal Nutrition, Brookings, SD.

W227  
Influence of sperm fertility-associated antigen status on nulliparous Nelore heifer fertility at first-service timed AI.  
J. C. Dalton*1, L. Deragon2, J. L. M. Vasconcelos3, A. Ahmadzadeh4, and R. F. Cooke5, 1University of Idaho, Caldwell, 2Alta Genetics Brazil, Uberaba, MG, Brazil, 3FMVZ-UNESP, Botucatu, SP, Brazil, 4University of Idaho, Moscow, 5Agropecuária Fazenda Brazil, Barra do Garças, MT, Brazil.

W228  
Feeding rumen-protected polyunsaturated fatty acids (PUFA) to high-producing dairy cows: II. Effects on serum concentrations of progesterone and insulin.  
M. M. Reis*, R. F. Cooke*, B. I. Cappelloza5, and J. L. M. Vasconcelos5*, 1UNESP – Faculdade de Medicina Veterinária e Zootecnia, Botucatu, SP, Brazil, 2Oregon State University–Eastern Oregon Agricultural Research Center, Burns, 3Pioneiros Veterinary Clinic, Carambeí, PR, Brazil, 4Colorado Dairies, Araras, SP, Brazil.

W229  
Feeding rumen-protected polyunsaturated fatty acids (PUFA) to high-producing dairy cows: I. Effects on milk production and reproductive performance.  
M. M. Reis*, R. F. Cooke*, S. Soriano6, F. L. Aragon1, M. B. Veras1, and J. L. M. Vasconcelos5*, 1UNESP – Faculdade de Medicina Veterinária e Zootecnia, Botucatu, SP, Brazil, 2Oregon State University–Eastern Oregon Agricultural Research Center, Burns, 3Pioneiros Veterinary Clinic, Carambeí, PR, Brazil, 4Colorado Dairies, Araras, SP, Brazil.

W230  
Puberty induction in Nelore heifers receiving eCG and/or estradiol cypionate at the end of the estrus synchronization protocol.  
A. Rodrigues1, R. Peres*4, A. Lemes1, T. Martins1, F. Aono1, M. Pereira1, H. Graff1, E. Carvalho1, and J. L. M. Vasconcelos1, 1FMVZ-UNESP, Botucatu, SP, Brazil, 2ESALQ-USP, Piracicaba, SP, Brazil, 3Agropecuária Fazenda Brasil, Barra do Garças, MT, Brazil.

W231  
Repeated exposure to human chorionic gonadotropin causes development of antibodies in some lactating dairy cows.  
J. O. Giordano*, M. C. Willbank, and P. M. Fricke, Department of Dairy Science, University of Wisconsin-Madison, Madison.
Synchronization of dairy heifers with a modified 5-day CIDR-PGF₂α-GnRH timed AI protocol.
J. Howard, K. Carnahan, C. Autran, J. Branen, R. Kasimanickam, G. Sasser, and A. Ahmadzadeh. 
University of Idaho, Moscow, 2BioTracking LLC, Moscow, ID, 3Washington State University, Pullman.

Prepartum 2,4-thiazolidinedione administration increases plasma tumor necrosis factor alpha in transition dairy cows.
Cornell University, Ithaca, NY, 2Elanco Animal Health, Greenfield, IN, 3Kansas State University, Manhattan.

Effect of dietary β-glucan on growth performance, fecal microbial shedding and immunological responses after lipopolysaccharide challenge in weaned pigs.
T. X. Zhou, B. U. Yang, and I. H. Kim. Dankook University, Cheonan, Choongnam, South Korea.

Difference in the expression of components of the GHR/IGF-I axis in follicular granulosa cells and corpus luteum in cows.
Universidade Federal de Pelotas, Pelotas, RS, Brazil, 2Cornell University, Ithaca, NY.

Functional genomics of liver in purebred beef cows in two forage allowances during gestation and lactation period.
Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 2Instituto Pasteur, Montevideo, Uruguay, 3University of Wisconsin, Madison.

Conjugated linoleic acids (CLA) and lactation related changes in serum amyloid A3 (SAA3) and IL-6 mRNA abundance in different bovine tissues with a focus on different adipose depots.
Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, North Rhine-Westphalia, Germany, 2Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Federal Research Institute for Animal Health, Braunschweig, Lower Saxony, Germany.

Role of nuclear receptors in the metabolism of boar taint compounds in Leydig cells.
M. A. Gray* and E. J. Squires. 
University of Guelph, Guelph, Ontario, Canada.

Effects of heat stress on Na+/K’ATPase activity in growing pigs.
Iowa State University, Ames.

Serum shock did not synchronize clock gene expression in primary bovine hepatocyte cultures.
University of Delaware, Newark.

Effect of short-term supplementation in hepatic gene expression in cycling Hereford cows grazing native pastures.
School of Agronomy, UDELAR, Montevideo, Uruguay, 2Research Institute for Agriculture, Tacuarembó, Uruguay.

Effect of charcoal extracted bovine follicular and testicular fluids on testes and endocrine organ weights of pre-pubertal male rabbits.
A. H. Ekeocha. 
University of Ibadan, Ibadan, Oyo, Nigeria.

Caspase 3 is upregulated in murine spermatogonia and Leydig cells treated with aflatoxin B₁.
University of Wyoming, 2Purdue University, West Lafayette, IN, 3University of Idaho, Moscow.

Muscle resident adipogenic progenitors are fiber type specific, Pax3/Myf5-independent and form white adipocytes by default.
Y. Q. Liu and S. H. Kuang. 
 Purdue University, West Lafayette, IN.

Effect of urea on interferon-tau response in the bovine endometrium.
A. Ahmadzadeh, T. Davis, and K. Carnahan. 
University of Idaho, Moscow.

Short-term supplementation and temporary weaning on metabolic and endocrine parameters in anestrous and cyclic Hereford cows grazing native pasture.
School of Agronomy, UDELAR, Montevideo, Uruguay, 2National Research Institute for Agriculture, Tacuarembó, Uruguay.

Liver gene expression of GH-IGF1 axis and fatty acid metabolism genes of beef cows on grazing conditions. I: Winter-gestational period.
J. Laporta, A. L. Astessiano, V. Gutierrez, A. C. Espasandin, P. Soca, and M. Carriquiry. 
Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay.

Liver gene expression of GH-IGF1 axis and fatty acid metabolism genes of beef cows on grazing conditions. II: Peripartum and lactation period.
J. Laporta, A. L. Astessiano, V. Gutierrez, A. C. Espasandin, P. Soca, and M. Carriquiry. 
Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay.

Uterine gene expression in beef cows grazing different forage allowances of native pastures.
School of Agronomy, Udelar, Montevideo, Uruguay, 2National Research Institute for Agriculture, Tacuarembó, Uruguay, 3School of Veterinary Sciences, Udelar, Montevideo, Uruguay.

The effect of leptin on primary cultured adipocytes of pigs.
Nanjing Agricultural University, Nanjing, P. R. China.
Injection of 100µg of GnRH 31 d after AI does not reduce pregnancy loss in lactating dairy cows.
A. L. A. Scanevez*, I. G. D. Mendonça, P. R. B. Silva, J. G. N. Moraes, and R. C. Chebel, Department of Veterinary Population Medicine, University of Minnesota, St. Paul.

Production, Management and the Environment II

Replacing grain and silage with wheat distiller grains affects feeding behavior of finishing beef cattle.
W. Z. Yang*, T. A. McAllister1, J. J. McKinnon1, and K. A. Beauchemin2, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Department of Animal & Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

Inclusion of anti-phospholipase A2 antibody (aPLA2) to backgrounding diet enhanced feed efficiency in growing beef calves.

Productive performance during fattening phase of Nelore fed diets with two concentrate levels.
G. S. Firmino*, I. S. Silva1, F. A. Barbosa1, S. L. S. Cabral Filho1, J. F. B. Guedes1, G. A. Carneiro1, F. F. Gouveia1, and J. F. A. Oliveira1, 1University of Brasilia - UnB, Brasilia, DF, Brazil, 2Federal University of Minas Gerais - UFMG, Belo Horizonte, MG, Brazil.

Effect of maternal feed efficiency as growing heifers and lactating cows on feed intake and performance of their suckling offspring.
K. M. Bischoff*, T. E. Black1, V. R. G. Mercadante1, G. H. L. Marquezini1, C. C. Chase1, S. W. Coleman1, and G. C. Lamb1, 1North Florida Research and Education Center, University of Florida, Marianna, 2USDA-ARS, SubTropical Agricultural Research Station, Brooksville, FL.

Temperament evaluation of Nelore (Bos indicus) cattle in Brazilian commercial cow-calf operations.
M. Meneghetti*, R. F. Cooke, B. I. Cappellozza2, D. W. Bohnert1, and T. C. Losi1, 1Oregon State University-Eastern Oregon Agricultural Research Center, Burns, 2Pfizer Animal Health, São Paulo, SP, Brazil, 3Lageado Consultoria Agropecuária, Mineiros, GO, Brazil.

Influence of propionate salt levels on young cow reproductive performance.
J. A. Walker*, G. A. Perry, and K. C. Olson, South Dakota State University, Brookings.

Methane emission potential and nutritional composition of four Panicum sp. forage genotypes in the Brazilian Cerrado region.

Methodology for estimating intermuscular, subcutaneous, and intramuscular fat in primal cuts.
M. J. McPhee*, J. P. Siddell2, B. J. Walmsley12, W. H. Johns12, and P. L. Greenwood12, 1Cooperative Research Centre for Beef Genetic Technologies, Armidale, NSW, Australia, 2Industry and Investment NSW, Armidale, NSW, Australia.

The influence of two levels of concentrate on the performance characteristics and carcass yield in Nellore cattle in Brachiaria brizantha compared to Marandu pastures.
G. A. Carneiro*, F. A. Barbosa2, S. L. S. Cabral Filho, R. V. Oliveira2, G. S. Firmino1, C. E. Souza1, F. F. Gouveia1, and J. F. A. Oliveira1, 1University of Brasilia, Brasilia, DF, Brazil, 2Federal University of Minas Gerais, Minas gerais, MG, Brazil.

Two methods to estimate milk yield in beef cattle grazing systems.
A. C. Espasandin*, A. Casal, V. Gutierrez, M. Cadenazzi, and M. Carriquiry, School of Agronomy, UdelaR, Uruguay.

Comparison of spring and fall calving beef herds grazing endophyte-infected tall fescue.
B. T. Campbell*, W. M. Backus1, M. C. Dixon1, R. J. Carlisle2, and J. C. Waller1, 1The University of Tennessee, Knoxville, 2Research and Education Center at Ames Plantation, Grand Junction, TN.

Influence of winter and spring pasture allowance on growth and reproductive performance on beef replacement heifers.
B. L. Bailey*, K. M. Krause, and T. C. Griggs, West Virginia University, Morgantown.

Cow and calf separation to improve reproductive performance of first-calf Nellore beef cows under tropical conditions.
P. G. M. A. Martins*, C. A. A. Torres1, A. B. Mancio1, W. F. Souza1, G. C. Lamb3, and J. D. Arthington3, 1Universidade Federal de Viçosa, Departamento de Zootecnia, Viçosa, Minas Gerais, Brazil, 2University of Florida, Range Cattle Research and Education Center, Ona, 3University of Florida, North Florida Research and Education Center, Marianna.

Relationships between performance and residual feed intake in Bonsmara heifers when confinement fed or on pasture.
L. M. Wiley*, T. D. A. Forbes, A. N. Hafla12, C. M. Hensarling1, B. G. Warrington1, and G. E. Carstens1, 1Texas Agrilife Research, Uvalde, 2Texas A&M University, College Station.
Effect of birth weight, early feed intake, and average daily gain of calves before weaning on their performance after weaning and during first lactation.
C. M. Matuk*1, M. Chahine1, A. Bach2,3, B. Ozer1, M. E. de Haro Martí1, J. B. Glaze1, and T. Fife1, 1University of Idaho, Twin Falls, 2IRTA, Caldes de Montbui, Spain, 3ICREA, Barcelona, Spain, 4University of Idaho, Gooding.

Different periods offering chromium oxide (Cr2O3) as external marker to evaluate the intake of cattle treated with different diets under feedlot.
R. A. Mandarino*, F. A. Barbosa2, I. S. Silva3, C. F. Lobo1, S. L. S. Cabral Filho1, G. A. Carneiro4, and G. S. Firmino5, 1University of Brasilia, Brasilia, DF, Brazil, 2Federal University of Minas Gerais, Minas Gerais, MG, Brazil.

Total and inorganic phosphorus content of an array of feedstuffs.
J. P. Jarrett*1, M. D. Hanigan1, R. Ward1, P. Sirios3, and K. F. Knowlton, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Cumberland Valley Analytical Services, Inc., Maugansville, MD, 3Dairy One, Ithaca, NY.

Protein-energy mineral supplementation of Nellore bulls in the growing phase at Brachiaria brizantha ‘Marandu’ during the rainy season.
C. F. Lobo*, F. A. Barbosa2, R. A. Mandarino1, G. A. Carneiro4, and S. L. S. Cabral Filho1, 1University of Brasilia, Brasilia, DF, Brazil, 2Federal University of Minas Gerais, Minas Gerais, MG, Brazil.

Requirements for continuous ammonia-NH3 sampling when using relaxed eddy accumulation from concentrated animal feeding operations.
C. D. Gambino*, J. M. Ham1, E. Allwine2, P. O’Keeffe2, S. N. Pressley1, B. K. Lamb2, and K. A. Johnson1, 1Washington State University, Pullman, 2Colorado State University, Fort Collins.

Effects of weaning strategy on growth and stress in beef calves.
M. E. Howe*, L. B. Krebs, and E. G. Brown, Stephen F. Austin State University, Nacogdoches, TX.

Whole herd enteric methane emission estimates in three contrasting dairy systems.
S. Utsumi*, D. Beede1, S. Zimmerman2, and P. Zimmerman2, 1Michigan State University, East Lansing, 2C-Lock Technology Inc., Rapid City, SD.

Effect of feeding frequency and protein supplementation on methane production by Holstein cows.

Effect of Quebracho-chestnut tannin extracts at two forage levels on dairy cow lactation performance and emission of methane and ammonia.
M. J. Aguerre*, M. C. Capozzolo1, M. A. Wattiaux1, and J. M. Powell2, 1University of Wisconsin-Madison, Madison, 2U.S. Dairy Forage Research Center, Madison, WI.

Effect of fiber on greenhouse gas emissions from stored manure.
Q. Huang1, K. Perano2, M. Tenuta1, C. M. Nyachoti1, A. Strathe2, and E. Kebreab1, 1University of Manitoba, Winnipeg, MB, Canada, 2University of California, Davis, Davis.

Evaluation of SF6 emission for determination of methane in ruminants.
A. C. Ruggieri*, N. C. Meister, I. P. Carvalho de Carvalho, N. L. Santos, V. Costa e Silva, F. de Oliveira Alari, and K. T. de Resende, UNESP-Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil.

Evaluation of dietary protein level and greenhouse gas emissions from dairy manure.
C. Lee*, A. N. Hristov1, C. J. Dell2, G. W. Feyereisen1, J. Kaye1, and D. Beegle1, 1Pennsylvania State University, University Park, 2USDA-ARS-PSWMRU, University Park, PA, 3USDA-ARS-SWMRU, St. Paul, MN.

Use of an activity monitoring system as part of the Cal Poly dairy breeding protocol.
T. Nutcher* and S. Henderson, Department of Dairy Science, California Polytechnic State University, San Luis Obispo.

Seasonal and diel changes of air emissions from cross-ventilated dairy freestall barns in Midwestern United States.
F. Y. Ayadi*, E. L. Cortus1, L. D. Jacobsen2, B. P. Hetchler1, and A. J. Heber1, 1South Dakota State University, Brookings, 2University of Minnesota, St. Paul, 3Purdue University, West Lafayette, IN.
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W282 Effect of oat maturity and variety on yield and nutritive value for grazing cattle.
M. L. Drewery*, L. A. Redmon1, and T. A. Wickersham1, 1Texas A&M University, College Station, 2Texas AgLife Extension, College Station.

W283 Replacing grain and silage with wheat distiller grains: effects on feed intake, daily gain, carcass characteristics, and blood metabolites in finishing beef cattle.
W. Z. Yang*, T. A. McAllister1, J. J. McKinnon2, and K. A. Beauchemin3, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Department of Animal & Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

W284 Effects of restricted versus conventional dietary adaptation over periods of 14 and 21 days on feedlot performance and carcass characteristics of Nellore cattle.
D. D. Millen*, F. S. Parra1, J. R. Ronchesel1, M. D. B. Arrigoni1, C. L. Martins1, R. S. Barducci1, L. M. N. Sarti1, R. D. L. Pacheco1, L. C. Vieira Júnior1, M. C. S. Franzoi1, R. Espigolan1, J. M. P. Silva1, M. F. Val1, F. P. Luiz2, E. A. Chacon Filho3, 1Universidade Federal do Paraná (UFPR), Curitiba, Paraná, Brazil, 2Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil, 3Universidade Federal de Santa Maria (UFSM), Santa Maria, Rio Grande do Sul, Brazil.

W285 Effect of three diets on carcass quantitative traits in cattle Nellore and crossbreed F1 Nellore × Brahman.
I. S. Silva*, F. A. Barbosa, S. L. S. Cabral Filho, R. A. Mandarino, and P. C. A. C. Alves, Faculty of Agronomy and Veterinary Medicine, University of Brasilia-UnB, Brasilia/DF, Brazil.

W286 Effects of supplementing an exogenous proteolytic enzyme on growth performance in finishing beef steers.
J. M. Vera*, C. T. Noviandi1, A.-H. Smith2, D. R. ZoBell1, and J.-S. Eun3, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Danisco USA, Inc., Waukesha, WI.

W287 Effects of supplementing an exogenous proteolytic enzyme in beef finishing diets on ruminal fermentation in continuous cultures.
J. M. Vera1, T. Astuti1, A.-H. Smith1, D. R. ZoBell1, and J.-S. Eun1, 1Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, 2Faculty of Animal Science, Andalas University, Padang, West Sumatra, Indonesia, 3Danisco USA, Inc., Waukesha, WI.

W288 Fecal and urinary excretion of N, P and S with increasing feeding wheat distillers dried grains with solubles (DDGS) in finishing beef heifers.
Y. L. Li1,2, C. Li1,2, W. Z. Yang1, T. A. McAllister2, and K. A. Beauchemin3, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China, 3Department of Animal Science, Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China.

W289 Effect of Optaflexx when fed as a topdress on performance and carcass traits of finishing steers.

W290 Effects of crude glycerin on in vitro gas production dry matter disappearance, VFA profiles, and composition of fermentative gasses.
E. H. C. B. van Cleef1,2, S. Uwituze3, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2São Paulo State University, Jaboticabal, São Paulo, Brazil.

W291 Effects of ginger root (Zingiber officinale) on blood oxidative stability of beef cattle.
M. J. Liu*, Z. B. Yang, and W. R. Yang, Shandong Agricultural University, Shandong, Taian, China.

W292 Oro-sensory preferences for mixtures of protein and energetic ingredients in weaned calves.
C. Montoro1*, I. Ipharraguerre2, and A. Bach1,2, 1Ruminant Production, IRTA, Caldes de Montbui, Barcelona, Spain, 2Lucta S.A., Montnòrs del Vallès, Barcelona, Spain, 3ICREA, Barcelona, Spain.

W293 Evaluation of cotton ginning by-product value added feed as a supplement for grazing beef cattle.
J. D. Rivera*, L. W. Fitzgerald, M. L. Gipson, K. L. Odom, and R. G. Gipson, South MS Branch Experiment Station, Poplarville, MS.

W294 Influence of addition of tannins-extract in low concentration of dietary dry matter on feedlot-performance of bulls.

W295 Influence of addition of tannins-extract in low concentration of dietary dry matter on carcass characteristics of bull-calves.

W296 Effect of length feeding additional tannins-extract on feedlot-performance of finishing-bulls.

W297 Effect of length feeding additional tannins-extract on carcass traits of finishing-bulls.
S. C. Arechiga1*, B. J. Cervantes1, M. A. Espino3, L. R. Flores5, A. Camacho2, J. A. Romo1, and R. Barajas1, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Ganadera Los Miguels S.A. de C.V., Culiacán, Sinaloa, México.
W300 Feed performance and carcass traits of yearling bulls fed polyclonal antibody preparations, yeast or monensin.

W301 Rumen papillae alterations of feedlot yearling bulls fed polyclonal antibody preparations, yeast or monensin.

W302 Fatty acid profiles in adipose tissue of grazing and feedlot beef steers.
C. T. Noviandi, R. E. Ward, J. S. Eun, D. R. Zobél, T. Astuti, B. L. Waldron, and M. D. Peel, Department of Animal, Dairy, and Veterinary Sciences, Department of Nutrition, Dietetics, and Food Sciences, Utah State University, Logan, and C. L. Martins, São Paulo State University (UNESP), Dracena, São Paulo, Brazil, Supported by FAPESP, São Paulo, São Paulo, Brazil.

W303 Chromium propionate supplementation on feedlot performance of bulls.

W304 Creatinine to estimate the quantity of carcass muscle and crude protein in the empty body weight.
L. F. Costa e Silva, S. de C. Valadares Filho, R. F. D. Valadares, and D. Zanetti, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

W305 Effect of glycerin on intake and digestion of bermudagrass hay in beef cattle.
T. A. Wickersham, K. M. Bodensteiner, M. L. Drewery, R. O. Dittmar, and J. E. Sawyer, Texas A&M University, College Station.

W306 Effect of methanol on intake and digestion in beef cattle.
K. N. Winsco, N. M. Kenney, R. O. Dittmar, J. A. Coverdale, J. E. Sawyer, and T. A. Wickersham, Texas A&M University, College Station.

W307 Effects of purified lignin on growth performance of feedlot cattle.
Y. Wang, J. H. Lora, and T. A. McAllister, Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada, GreenValue Enterprises LLC, Media, PA.

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W308 Protein balance alters expression of key genes for protein and lysine catabolism in liver of lactating dairy cattle.
H. A. Tucker, S. L. Koser, P. H. Doane, and S. S. Donkin, Purdue University, West Lafayette, IN, Archer Daniels Midland Company, Decatur, IL.

W309 Effects of OmniGen-AF on performance and economics of a veal operation.
O. Bewley, J. D. Chapman, K. P. Zanzalari, Y. Q. Wang, and N. E. Forsberg, Prince Agri Products, Quincy, IL, OmniGen Research, Corvallis, OR.

W310 Determining methionine bioavailability in commercial dairy herds.
D. Stucker, J. R. Knapp, and N. R. St-Pierre, Venture Milling, Salisbury, MD, Fox Hollow Consulting LLC, Columbus, OH, The Ohio State University, Columbus.

W311 Effect of returned milk (Nutri-Gold) on performance of veal calves.
D. Vermeire, Nouriche Nutrition Ltd., Lake St. Louis, MO.

W312 Antioxidant activity in milk of dairy cows fed diets containing propolis-based products.
S. M. Cottica, S. C. de Aguiar, E. M. de Paula, R. B. Samensari, L. P. P. de Moura, S. L. Franco, J. V. Visentainer, G. T. dos...

Effect of a combined supplement of vitamin B12 and folic acid on vitamin B12 concentration in milk of dairy cows. M. Duplessis, D. Pellerin, and C. L. Girard, Université Laval, Département des sciences animales, Québec, QC, Canada, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

Effects of cornmeal or molasses supplemented with different protein sources on milk production and nitrogen utilization of organic dairy cows. S. Ross, A. F. Brito, H. V. Petit, and K. J. Soder, University of New Hampshire, Durham, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, USDA-Agricultural Research Service-Pasture Systems and Watershed Management Research Unit, University Park, PA.


Comparing a 40-d dry period with a single close-up diet with a 60-d dry period with far-off and close-up diets on glucose, lactate, and calcium in the blood plasma of dairy cows. H. Khazanehei, S. Li, D. O. Krause, M. L. Connor, L. Lippins, and J. C. Plaizier, University of Manitoba, Winnipeg, MB, Canada.

A meta-analysis on the effects of supplementing exogenous fibrolytic enzyme products in dairy diets on productive performance in early lactation. J. S. Eun, C. M. Williams, and A. J. Young, Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, Department of Soil and Crop Sciences, Colorado State University, Fort Collins.


Bee pollen and its polysaccharides, the new feed additives in milk replacer of preruminant calves. Y. Tu, G.-F. Zhang, N.-F. Zhang, C.-G. Jiang, and Q.-Y. Diao, Key Laboratory of Feed Biotechnology of Ministry of Agriculture/Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, P.R. China.

Effect of lipopolysaccharides on immune parameters and nitrogen metabolism in preruminant calves. N.-F. Zhang, H. Li, Y. Tu, C.-G. Jiang, and Q.-Y. Diao, Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, P.R. China.
W329 Partially replacing barley grain with wheat factory sewage in the dairy cow diets did not affect digestion and milk production.
M. Khorvash1, S. Kargar1, G. R. Ghorbani2, M. Boroumand-Jari1, A. Ghaempour1, and W. Z. Yang1-3, 1Isfahan University of Technology, Isfahan, Iran, 2Jahad-Agriculture Institute of Scientific-Applied Higher Education, Isfahan, Iran, 3Agriculture and Agri-Food Canada, Research Centre, Lethbridge, Alberta, Canada.

W330 Effects of dietary crude protein level on eating pattern and performance of Holstein calves.
G. Araujo1, M. Devant1, A. Merestu1, I. Ipharraguerre1, and A. Bach1, 2Deparment of Ruminant Production, Institut de Recerca i Tecnologia Agroalimentàries (IRTA), Barcelona, Spain, 2Lucta, S.A., Barcelona, Spain, 3Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain.

W331 Feeding distiller′s grains as an energy source to gestating and lactating heifers: Impact on calving and pre-weaning progeny performance.
P. J. Gunn1, 5, 6, J. P. Schoonmaker1, R. P. Leneman1, and G. A. Bridges1, 5Purdue University, West Lafayette, IN, 6University of Minnesota, Grand Rapids.

W332 Feeding distiller′s grains as an energy source to gestating and lactating heifers: Impact on milk production, composition, and fatty acid profile.
P. J. Gunn1, 5, J. P. Schoonmaker1, R. P. Leneman1, and G. A. Bridges1, 5Purdue University, West Lafayette, IN, 6University of Minnesota, Grand Rapids.

W333 Effect of extruded flax products on dairy cow milk and steer tissue fatty acid composition.
D. A. Christensen*, P. Yu, J. J. McKinnon, and A. Foth, University of Saskatchewan, Saskatoon, SK, Canada.

W334 Grain source and alfalfa hay particle size effects on fecal fermentability and particle size in midlactation Holsteins.
A. Nikkhah1, 2, S. M. Nasrollahi1, M. Khorvash1, and G. R. Ghorbani2, 1University of Zanjan, Zanjan, Iran, 2Isfahan University of Technology, Isfahan, Iran.

W335 Textured versus ground starter effects on Holstein calves chewing behavior.
A. Nikkhah1*, S. M. Nasrollahi1, B. Raad1, S. Khorsandi1, M. Forootan1, and S. P. Emami Panaah1, 1University of Zanjan, Zanjan, Iran, 2Foeka Agriculture and Dairy Corporation, Isfahan, Iran.

W336 Changes in long-chain polyunsaturated fatty acid status of dairy cows during the periparturient period based on erythrocyte-membrane fatty acids.
C. L. Preseau1, H. M. Dann1, and A. L. Lock1, 1Michigan State University, East Lansing, 2William H. Miner Agricultural Research Institute, Chazy, NY.

W337 A 40-d dry period with a single close-up diet and a 60-d dry period with far-off and close-up diets differ in their effects on lipolysis and liver triacylglycerol.

W338 Reduced protein for late-lactation dairy cows.
A. B. D. Pereira1, 2, L. K. Zeringue1, C. Leonardi2, M. E. McCormick2, and V. R. Moreira2, 1Louisiana State University Agricultural Center, Baton Rouge, 2Louisiana State University - Health Sciences Center, New Orleans.

W339 Comparison of in vivo and in vitro NDF digestibility data in dairy cows.
S. Colombini*, G. Galassi, L. Rapetti, and G. M. Crovetto, University of Milan, Department of Animal Science, Milano, Italy.

W340 Effect of two different non-forage fiber sources on performance and feeding behavior of Holstein calves.
L. I. Castells1, 2*, A. Bach1, 2, G. A. Pirisino1, and M. Terré1, 2Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 3ICREA, Barcelona, Spain.

W341 Morphology of the rumen of dairy cows fed high or low grain content diets before parturition.

W342 Effects of monensin on metabolic parameters, feeding behavior, and productivity of transition dairy cows. (see Abstract 73).
C. R. Mullins1, L. K. Mamedova1, M. J. Brouk1, C. E. Moore2, H. B. Green1, K. L. Perfield1, J. F. Smith1, J. P. Harner1, and B. J. Bradford1, 1Kansas State University, Manhattan, 2Elanco Animal Health, Greenfield, IN.

W343 Energy efficiency and performance of lactating dairy cows fed ethanol and acetic acid.

W344 Effect of an essential oil compound based oil on ruminal disappearance of proteins, fiber and starch and fermentation parameters in dairy cow.
D. Éclache, P. Ettienne, and V. Noiriot*, Phodé Laboratorios, Terrassac, France.

W345 Milk fatty acid profile from dairy cows fed tropical forage-based TMR containing increasing levels of sunflower oil.
M. A. S. Gama1, 2, C. G. S. Ribeiro1, F. F. C. Lopes1, M. M. Almeida1, E. F. Motta1, M. T. Ribeiro1, and J. M. Grinari1, 1Brazilian Agricultural Research Corporation, Juiz de Fora, Minas Gerais, Brazil, 2The University of Juiz de Fora, Juiz de Fora, Minas Gerais, Brazil, 3Swedish University of Agricultural Sciences, Uppsala, Sweden, 4The University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.
Effects of grinding or steam rolling of starter grains on nutrient digestibility of Holstein suckling calves.
N. Jalali-Farahani, M. Dehghan-Banadaky*, K. Rezayzadi, and M. Ganjkhanlou, Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Investigation of grinding or steam rolling of starter grains on growth performance of Holstein suckling calves.
N. Jalali-Farahani, M. Dehghan-Banadaky*, K. Rezayzadi, and M. Ganjkhanlou, Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

Investigation of chewing activity in cows fed diet with different ratios of alfalfa hay and corn silage.
A. Akbai, A. Zali, M. Ganjkhanlou, and M. Dehghan-Banadaky*, Animal Science Department, Campus of Agriculture and Natural Resources, University of Tehran, Karaj, Tehran, Iran.

A non activated charcoal reduced diarrhea of calves subject to Escherichia coli compared to a conventional treatment after 9 days of treatment.

A new method for individually supplementing to dairy cows in a free stall.
E. M. Ramsing*, C. M. Shriver-Munsch, J. R. Males, W. K. Sanchez, I. 'Yoon, and G. Bobe, 1Department of Animal Science, Oregon State University, Corvallis, 2Diamond V Mills, Cedar Rapids, IA.

Effect of dietary escape microbial protein (DEMP) and degradable protein level on fermentation, digestion, and N flow in rumen-simulating fermenters.

Effect of level of dietary escape microbial protein (DEMP) on fermentation, digestion, and N flow in rumen-simulating fermenters.

Effects of abomasal infusion of fish oil, sterculia foetida oil and conjugated linoleic acids on milk yield and composition, and rumen-simulating fermenters.
M.-P. Dallaire*, L. Ma, B. A. Corl, R. Gervais, Y. Lebeuf, F. J. Richard, and P. Y. Chouinard, 1Département des sciences animales, Université Laval, Québec, Québec, Canada, 2Lanupro, Ghent University, Melle, Belgium, 3Unité de Recherches Zootechniques, INRA, Petit Bourg, Guadeloupe, France, 4Unité de Recherche sur les Herbivores, INRA, Theix, St-Genès-Champanelle, France.

Effect of corn silage inoculation with Sil-All and dietary protein on fermentation, digestion, and N flow in rumen-simulating fermenters.

Enhancing antioxidant properties of milk using a programmed, nutritional approach.

Mineral metabolism in pregnant dairy goats.

Effect of various dosages of Saccharomyces cerevisiae fermentation product on milk production of multiparous dairy cows.
E. M. Ramsing*, C. M. Shriver-Munsch, J. R. Males, W. K. Sanchez, I. Yoon, and G. Bobe, 1Department of Animal Science, Oregon State University, Corvallis, 2Diamond V, Cedar Rapids, IA.

Prediction of enteric methane output from milk fatty acid composition, intake and rumen fermentation parameters.
R. Mohammed*, S. M. McGinn, and K. A. Beauchemin, AAFC, Lethbridge Research Centre, Lethbridge, AB, Canada.

Effect of dietary starch content in early lactation on the lactational performance of dairy cows.

A fibrolytic enzyme additive for lactating dairy cow diets: ruminal fermentation, pH, bacterial populations and enteric methane emissions.
Y.-H. Chung*, L. Holtshausen, T. W. Alexander, M. Oba, and K. A. Beauchemin, 1Agriculture and Agri-Food Canada, Research Centre, Lethbridge, AB, Canada, 2Department of Animal Science, University of Vermont, Burlington, 3Department of Agricultural, Food and Nutritional Sciences, University of Alberta, Edmonton, AB, Canada.
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W363
Nutritional and seasonal factors causes milk fat concentration variability in dairy cows.
A. S. Atzori*, P. Carta, G. Gaspa, and A. Cannas, 1Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari 07100, Italy, 2Associazione Regionale Allevatori della Sardegna, Nuraxineddu, OR, Italy.

W364
Replacing soybean meal with Upland cottonseed, Pima cottonseed or extruded Pima cottonseed cake on production of lactating dairy cows.

W365
The effects of feeding high-fiber byproduct feedstuff on productivity of dairy cows in early lactation.
Y. Q. Sun* and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

W366
Determination of the metabolizable methionine contributions of three different sources of lipid coated methionine.
E. Devillard1, F. Rouffineau, and B. Sloan*, 2Adisseo France, Commentry, France, 3Adisseo North and Central America, Alpharetta, GA.

W367
In vitro degradation of melamine in rumen liquor.
T. Calitz and C. W. Cruywagen*, Stellenbosch University, Stellenbosch, South Africa.

W368
Characterization of lipase-producing bacteria in the presence of varying energy substrates in vitro.
H. D. Edwards*, R. C. Anderson, R. K. Miller, T. M. Taylor, M. D. Hardin, S. B. Smith, N. A. Krueger, and D. J. Nisbet, 1Texas A&M University, College Station, 2United States Department of Agriculture/Agricultural Research Service, Southern Plains Agricultural Research Center, College Station, TX, 3IEH Laboratories & Consulting Group, Lake Forest Park, WA.

W369
Exogenous fibrolytic enzymes: Unlocking nutrients from fiber for ruminant production.
W. F. J. van de Vyver* and C. W. Cruywagen, Stellenbosch University, Stellenbosch, Western Cape, South Africa.

W370
Comparison rumen degradability of Sediliztia rosmarinus, Halocnemum strobilaceum and Kochia scoparia with wheat straw and alfalfa hay.
M. Mahmoodi-Abyane*, R. Valizadeh, A. A. Naserian, and A. Koocheki, Ferdowsi University of Mashhad.

W371
Comparison rumen degradability of Phragmites australis, Nitraria schoberi and Atriplex canescens species with wheat straw and alfalfa hay.
M. Mahmoodi-Abyane*, R. Valizadeh, A. A. Naserian, and A. Koocheki, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

W372
The comparison of chemical composition of Pragmatea australis ensiled forage by various feed additives.
R. Valizadeh, M. Mahmoodi-Abyane, and A. Salahi, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

W373
The comparison of qualitative characteristics of Pragmatea australis ensiled forage by various feed additives.
R. Valizadeh, M. Mahmoodi-Abyane*, and A. Salahi, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

W374
A comparison of methods to analyze physical effectiveness fiber.
R. S. Goulart*, L. G. Nussio, A. V. Pirez, J. L. P. Daniel, R. C. do Amaral, and V. P. Santos, University of Sao Paulo/ESALQ, Piracicaba, Sao Paulo, Brazil.

W375
Rumen degradability of sugarcane (Saccharum spp.) treated with different hydrolysis agents used in Brazilian farms.
S. L. S. Cabral Filho*, D. C. Pinto1, and R. A. Mandarino1, 1Universidade de Brasilia, Brasilia, Distrito Federal, Brasil, 2Fazenda Experimental Agua Limpa, Brasilia, Distrito Federal, Brasil.

W376
Effect of dietary fish oil level on selected strains of rumen bacteria in continuous culture fermenters.
A. Ishlak*, A. A. AbuGhazaleh, P. Gudla, and D. Hastings, Southern Illinois University, Carbondale.

W377
Effects of rumen-protected niacin on lipid metabolism, oxidative stress and production of transition dairy cows during summer in Wisconsin.
K. Yuan*, R. Shaver1, S. Bertics1, M. Espineira1, and R. Grummer2, 1Department of Dairy Science, University of Wisconsin-Madison, Madison, 2Balchem Corporation, New Hampton, NY.

W378
Using rumen microbes for consolidated bioprocessing to convert plant fiber to ethanol or other biofuels.
R. A. Kohn* and S.-W. Kim, University of Maryland, College Park.

W379
Fiber-digesting rumen bacteria that predominantly produce propionate or butyrate.
S.-W. Kim* and R. A. Kohn, University of Maryland, College Park.

W380
The combination of garlic oil and cinnamaldehyde modify rumen fermentation profile reducing methane production.
P. W. Cardozo*, M. Blanch, M. D. Carro2, and J. M. Ranilla3, 1Novus International Inc., St. Charles, MO, 2Deptartamento de
W381  Ruminal kinetics of the diets with increasing levels of crude propane-1,2,3-triol.
R. Mello*, C. M. M. Bittar*, L. A. M. A. da Costa¹, R. C. de Araújo², and A. L. Abdalla³, ¹Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, ²Universidade de São Paulo - Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil, ³Universidade Federal de Roraima, Boa Vista, Roraima, Brazil.

W382  Effect of various semi-arid medicinal plant essential oils on in vitro ruminal methane emission and feed fermentation efficiency.
H. Jahani-Azizabadi⁴*, M. Danesh Mesgaran⁴, A. R. Vakili⁴, and K. Rezayazdi⁵, ⁴Dept. of Animal Science, Excellence Center for Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, ⁵Dept. of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Tehran, Iran.

W383  Rumen parameters and digestibility of diets with different levels of crude propane-1,2,3-triol.
R. Mello*, C. M. M. Bittar*, L. A. M. A. da Costa¹, P. B. Costa¹, J. K. Kirinus¹, and J. L. Nörnberg¹, ¹Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, ²Universidade de São Paulo - Escola Superior de Agricultura ‘Luiz de Queiroz’, Piracicaba, São Paulo, Brazil, ³Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, ⁴Universidade Estadual do Oeste do Paraná, Marechal Cândido Rondon, Paraná, Brazil.

W384  Dose response effects of a garlic oil chemical compound propyl-propyl thiosulfate (PTSO) on rumen microbial fermentation in a dual flow continuous culture system.
A. Foskolos*, A. F. De Souza¹, M. Rodriguez-Prado¹, A. Ferret¹, D. Bravo¹, and S. Calsamiglia¹, ¹Animal Nutrition, Management and Welfare Research Group, Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Pancosma, Geneva, Switzerland.

W385  Estimation of protein fractions of tropical grasses by near infrared reflectance spectroscopy.
R. G. Basurto¹, G. Buendia-Rodríguez¹, E. R. Ramirez¹, M. A. Barron¹, J. J. G. Bustamante¹, R. E. Santos¹, J. M. Maldonado¹, and S. S. Gonzalez-Muñoz*, ¹CENID Fisiología Animal-INIFAP, Queretaro, Mexico, ²CE Huimanguillo-INIFAP, Tabasco, Mexico, ³CE Santiago Ixcuintla-INIFAP, Nayarit, Mexico, ⁴CE Iguala-INIFAP, Guerrero, Mexico, ⁵CE Rosario Izapa-INIFAP, Chiapas, Mexico, ⁶Colegio de Postgraduados, Montecillo, Estado de Mexico, Mexico.

W386  Commodity blood meal variation: digestible RUP and amino acids.
R. Brown*, D. Stucker², J. R. Knapp², and N. R. St-Pierre³, ¹Venture Milling, Salisbury, MD, ²Fox Hollow Consulting, LLC, Columbus, OH, ³The Ohio State University, Columbus.

W387  Tannin content and rate of ruminal protein degradation of legume hays.
S. Colombini*, G. A. Broderick¹, J. H. Grabber¹, and W. K. Coblenz², ¹University of Milan, Milan, Italy, ²U.S. Dairy Forage Research Center, Madison, WI, ³U.S. Dairy Forage Research Center, Marshfield, WI.

W388  Evaluation of acid-insoluble ash and indigestible neutral-detergent fiber as total tract digestibility markers.

W389  Nutritional value of Smallanthussonchifolius and Moringa oleifera tropic forage as alternative in ruminant feeding.
L. C. Bernal Bechara*, Universidad de La Salle, Bogotá, Colombia.

W390  Postprandial hypoglycemia after feeding of alcohol-fermented apple pomace silage.

W391  Inclusion of substrates of Pleurotus ostreatus on kinetics of in vitro fermentation of Brachiari hay.
S. L. S. Cabral Filho*, R. S. Oliveira¹, R. A. Mandarino¹, and C. A. Lobo¹, ¹Universidade de Brasilia, Brasilia, Distrito Federal, Brasil, ²Fazenda Experimental Agua Limpa, Brasilia, Distrito Federal, Brasil.

W392  Evaluation of protein fractions of tropical grasses by near infrared reflectance spectroscopy.
R. G. Basurto¹, G. Buendia-Rodríguez¹, S. S. González-Muñoz*, R. E. Ramirez¹, M. A. Barrón¹, G. J. J. Bustamante¹, R. E. Santos¹, J. M. Maldonado¹, and C. J. A. Bonilla¹, ¹CENID Fisiología y Mejoramiento Animal, Brasilia, Distrito Federal, Brasil, ²CE Huimanguillo–CIRG, Huimanguillo, Tabasco, ³CE Santiago Ixcuintla–CIRPAS, Nayarit, ⁴CE Iguala–CIRPAS, Iguala, Guerrero, ⁵CE Rosario Izapa–CIRPAS, Tapachula. INIFAP–México, ⁶Colegio de Postgraduados, Montecillo, Estado de México, Mexico.

W393  The effect of storage structure on haylage and corn silage fermentation.
C. Rasmussen*, D. Petri, S. Jens, and A. H. Smith, Danisco USA, Waukesha, WI.

W394  The effect of direct fed lactic acid bacteria combined with monensin.
R. C. de Souza*, R. B. Reis¹, J. Holliday², E. Rabelo², and R. A. Filho³, ¹Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brasil, ²Chr. Hansen - Animal Health and Nutrition, Hørsholm, Denmark, ³Chr. Hansen - Animal, Valinhos, São Paulo, Brasil, ⁴Rehagro Team Consultation, Belo Horizonte, Minas Gerais, Brasil.

W395  Morphological response of the ruminal and omasal mucosae to the variation in the energy of the diet.

W396  Determination of solubility of alternate magnesium sources and their impact on pH with an optimized in vitro rumen fermentation protocol.
S. J. Taylor*, J. Apajalahti², E. Pennala², C. Murphy¹, and T. Rinttilä², ¹Celtic Sea Minerals Ltd., Cork, Ireland, ²Alimetrics Ltd., Espoo, Finland.
Ruminant Nutrition

Small Ruminant

W397

Influence of Salix babylonica and Leucaena leucocephala extracts on ruminal fermentation activities in growing lambs.


W398

Effect of live yeast Saccharomyces cerevisiae (strain Sc 47) on ruminal growth of growing Mehraban lambs.

N. Baleghi*, A. Taghizadeh†, A. FarahAvar‡, and H. Khailvandi-Behroozyar*, 1Islamic Azad University, Maragheh Branch, 2University of Tabriz, 3University of Tehran, 4Urmia University.

W399

Intake and digestibility by wethers fed a fresh ryegrass-based diet intraruminally infused with Acacia mearnsii tannins.

F. Hentz*, C. J. Härter‡, G. V. Kozlowski†, S. C. Avila†, and D. S. Castagnino*, 1Universidade Federal de Santa Maria, Santa Maria, RS, Brazil, 2Universidade Estadual Paulista, Jaboticabal, SP, Brazil.

W400

Effect of sorghum grain supplementation on glucose metabolism 2: Ovine.

M. Aguerre*, C. Cajarville‡, A. L. Astrassiano†, M. Carriquiry1, and J. L. Repetto1, 1Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay, 2Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay.

W401

Inter-individual variability in in vitro methane production by ruminal microorganisms from sheep fed different diets.

M. J. Ranilla*, A. Gaesser*, T. K. Hutchens‡, A. Camacho†, M. L. Tejido*, J. J. Lomeli†, and A. Estrada-Angulo‡, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México, 3Red Internacional de Nutrición y Alimentación en Rumiantes, Durango, Durango, México.

W402

Influence of sugar cane molasses levels on apparent digestibility of diets for finishing lambs.

L. R. Flores*, J. J. Lomeli†, I. A. Vazquez‡, J. Quintero‡, J. E. Borbolla‡, J. E. Guerra‡, and R. Barajas1, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México, 2Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México, 3Red Internacional de Nutrición y Alimentación en Rumiantes, Durango, Durango, México.

W403

Effect of live yeast Saccharomyces cerevisiae (strain Sc 47) on ruminal growth of growing Mehraban lambs.

N. Baleghi*, A. Taghizadeh†, A. FarahAvar‡, and H. Khailvandi-Behroozyar*, 1Islamic Azad University, Maragheh Branch, 2University of Tabriz, 3University of Tehran, 4Urmia University.

W404

Carcass evaluations of sheep supplemented with breeder waste (ensiled and dried) grazing under the rainy season in tropics.

F. P. Portilho*, L. S. S. Cabral Filho, H. Louvandini, A. M. Menezes, and B. S. L. Dallago, 1University of Brasilia, Brasilia, DF, Brazil, 2Agrodefesa, Rio Verde, GO, Brazil.

W405

Feed efficiency and carcass traits in crossbred Katahdin lambs supplemented with hydroponic green wheat.


W406

Effect of diet and finishing weight on performance and carcass traits of meat goat kids.

A. Gaesser‡, G. Rentfrow*, T. K. Hutchens‡, J. Schoonmaker†, K. Andries‡, J. E. Tower†, M. E. Einstein†, and M. K. Neary†, 1Purdue University, West Lafayette IN, 2University of Kentucky, Lexington, 3Kentucky State University, Frankfort.

W407

Feedlot productive performance and carcass traits by hybrid lambs.

M. T. Espinoza‡, M. A. Cerrillo-Soto†, A. Estrada-Angulo†, J. F. Obregon†, J. J. Portillo†, and F. G. Rios*, 1FMVZ-UAS, Culiacán, Sinaloa, Mexico, 2Universidad Autónoma de Chihuahua, Facultad de Zootecnia y Ecología, Chihuahua, Chih., México.

W408

Evaluation of carcass characteristics of feedlot lambs receiving repeated doses of zeranol.


W409

Performance and carcass characteristics of lambs fed with diets including protected fat and vitamin E.

Feeding system and breed affect goat kid growth and carcass composition.
M.-E. Brassard*, L. Tessier†, R. Gervais†, E. Pouliot†, C. Gariepy*, G. F. Tremblay†, R. Berthiaume†, P. Y. Chouinard†, and D. Cinq-Mars†,
Département des sciences animales, Université Laval, Québec, QC, Canada. 1AAFC, Food Research and Development Centre, Saint-Hyacinthe, QC, Canada, 2AAFC, Soils and Crops Research and Development Centre, Québec, QC, Canada, 3AAFC, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.

Molecular survey of Trypanosoma vivax infection in Nigerian goats.
T. Sanni‡, A. Yakubu*, M. A. Adenewa*, B. O. Agaviezer*, C. O. N. Ikeobi‡, M. Wheto‡, M. Okpeku‡, M. I. Takeet‡, M. De Donato‡, and I. G. Imumoin‡*, 1Dept of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria, 2Dept of Animal Science, Nasarawa State University, Lafia, Nigeria, 3Dept of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria, 4Dept of Animal Science and Fisheries, University of Port Harcourt, Port-Harcourt, Nigeria, 5Dept of Livestock Production, Niger Delta University, Amassoma, Nigeria, 6Dept of Veterinary Microbiology and Parasitology, University of Agriculture, Abeokuta, Nigeria, 7Dept of Animal Science, Cornell University, Ithaca, NY.

Gene expression changes in goat testes during development and in sperm during the breeding and nonbreeding seasons.
A. N. Faucette‡*, P. K. Riggs‡, D. W. Forrest†, L. Nuti‡, G. R. Newton‡, and N. H. Ing‡, 1Prairie View A&M University, Cooperative Agriculture Research Center, Prairie View, TX, 2Texas AgriLife Research, College Station.

Feeding management affect the occurrence of self-suckling in dairy goats.

Feeding performance of lambs fed fresh or dehydrated spineless cactus (Opuntia ficus-indica).
M. I. Aguilar-Yañez‡, O. Hernandez-Mendo*, G. Aranda-Osorio‡, J. E. Ramirez-Bribiesca, S. S. Gonzalez-Muñoz, and M. M. Crosby-Galván, 1Colegio de Postgraduados, Montecillos, Estado de Mexico, Mexico, 2Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico.

Finishing performance of Pelibuey sheep fed with different levels of alfalfa.
V. Resendiz-Cruz*, O. Hernandez-Mendo‡, J. Gallegos-Sanchez*, P. A. Martinez-Hernandez‡, G. Aranda-Osorio‡*, C. Sanchez-Del Real‡, and S. S. Gonzalez-Muñoz‡, 1Colegio de Postgraduados, Montecillos, Estado de Mexico, Mexico, 2Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico.

Evaluation of feedlot male lamb performance receiving repeated doses of Zeranol.

Effect of using different performance traits to estimate residual feed intake.

Increased nutritional level positively influences the onset of the breeding season and the reproductive performance of native male goats in northern Mexico.

Response of sexually inactive French Alpine bucks to the stimulus of estrous goats.

Contact with estrogenized female goats influences the end of sexual activity of young bucks but not adult bucks in northern Mexico.

NCSynch: A protocol for ovulation synchronization and timed artificial insemination in goats.

Comparison of two ovulation synchronization methods for timed artificial insemination in goats.
N. C. Whitley*, C. E. Farin, W. B. Knox, L. Townsend, J. R. Horton, K. Moulton, and S. Nusse, 1North Carolina A&T State University, Greensboro, 2North Carolina State University, Raleigh, 3NCDVA, UMRS, Laurel Springs, NC, 4Redlands Community College, El Reno, OK.
W424  Effect of flushing and (or) exposure to estrogenized does upon reproductive performance of anovulatory range goats exposed to male effect.
M. A. De Santiago-Miramontes*, J. R. Luna-Orozco¹, F. G. Véliz-Deras¹, R. Rodríguez-Martínez¹, P. A. Robles-Trillo¹, C. A. Meza-Herrera¹, and M. Mellado¹, ¹Universidad Autonoma Agraria Antonio Narro, ¹Centro de Bachillerato Tecnologico Agropecuario N° 1, ¹Universidad Autonoma Chapingo, Unidad Regional Universitaria de Zonas Aridas.

W425  Exposure of does in estrus to bucks subsequently induces estrus in anestrus females.
S. Marcelino-León*, J. R. Luna-Orozco¹, F. G. Véliz-Deras¹, L. Gaytán-Alemán¹, C. A. Meza-Herrera¹, R. Rodríguez-Martínez¹, M. Mellado¹, and M. A. De Santiago-Miramontes¹, ¹Universidad Autonoma Agraria Antonio Narro, ¹Centro de Bachillerato Tecnologico Agropecuario N° 1, ¹Universidad Autonoma Chapingo, Unidad Regional Universitaria de Zonas Aridas.

W426  Influence of sexually inactive bucks subjected to either long photoperiod or testosterone upon the induction of estrus in anovulatory goats.
J. M. Guillén-Muñoz*, J. R. Luna-Orozco¹, L. M. Tejeda-Ugarte¹, M. A. De Santiago-Miramontes¹, M. Mellado¹, F. G. Véliz¹, R. Rodríguez-Martínez¹, and C. A. Meza-Herrera¹, ¹Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México, ¹Centro de Bachillerato Tecnológico Agropecuario No 1, Torreón, Coahuila, México, ¹Universidad Autónoma Chapingo, Unidad Regional de Zonas Áridas, Bermejillo, Dgo., México.

W427  Nutritional supplementation before or after the breeding season does not improve the productive and reproductive response of goats managed under a marginal production system in Northern Mexico.
C. G. Orta-Castillón¹, C. A. Meza-Herrera¹, G. Arellano-Rodríguez¹, P. A. Robles-Trillo¹, M. A. De Santiago-Miramontes¹, R. Rodríguez-Martínez¹, M. Mellado¹, and F. G. Véliz*¹, ¹Universidad Autónoma Agraria Antonio Narro, Torreón, Coahuila, México, ²Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, México, ³Universidad Autónoma Agraria Antonio Narro, Saltillo, Coahuila, México.
SYMPOSIA AND ORAL SESSIONS

Animal Health
Swine and Other Species
Chair: Tanya Gressley, University of Delaware
288-289

10:30 AM 587  Comparison of porcine cathelicidin expression between Jinhua and Landrace pigs.
Y. Gao*, S. An, Y. Xie, Y. Liu, F. Han, C. Luan, and Y. Wang, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang Province, China.

10:45 AM 588  The effect of prenatal stress and dominance order on immune function in response to a DTH and LPS challenge in pigs.
B. L. Davis*, M. A. Sutherland¹,², and M. A. Ballou¹, ¹Texas Tech University, Lubbock, ²Ruakura Research Centre, AgResearch, Hamilton, New Zealand.

11:00 AM 589  Effects of *Lactobacillus fermentum* I5007 on the redox state of healthy and oxidative-stressed piglets.
C. J. Cai*, A. N. Wang, L. C. Chu, S. Y. Qiao, and D. F. Li, China Agricultural University, Beijing, China.

11:15 AM 590  In vitro antibacterial activity, cytotoxicity and mechanisms of cathelicidin peptides against enteric pathogens in weaning piglets.
Y. Liu*, S. An, C. Luan, and Y. Wang, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang Province, China.

11:30 AM 591  Microbial transmission and assembly of the gut microbiota in neonatal pigs on day 7 and 14 postfarrowing.
E. E. Hinkle*, I. Martinez, J. Walters, P. S. Miller, and T. E. Burkey, University of Nebraska-Lincoln, Lincoln.

11:45 AM 592  Viability of *Parascaris equorum* eggs intermittently exposed to the interior of a windrow composting system.
J. C. Gould*, E. T. Lyons, L. M. Lawrence, and M. G. Rossano, University of Kentucky, Lexington.

12:00 PM 593  Effect of a yeast nucleotide product on performance and health status of broilers.
A. Ganner*, S. Schaumberger, J. Uhlik, and G. Schatzmayr, BIOMIN Research Center, 3430 Tulln, Lower Austria, Austria.


Animal Health Symposium
Lipid Metabolism
Chair: Pedram Rezamand, University of Idaho
Sponsors: Elanco Animal Health, Pfizer Animal Health
298-299

10:30 AM  Introduction

10:40 AM  Lipid metabolism and inflammation in monogastric animals.
K. Ajwun, Purdue University, West Lafayette, IN.

11:15 AM  Lipids, antioxidants and longevity.
R. Hontecillas-Magarzo, Virginia Bioinformatics Center.

11:50 AM  Lipids and inflammation related to lactation.
M. A. McGuire, University of Idaho, Moscow.
Breeding and Genetics Symposium
Is There Space for Genomic Selection in Small Populations?
Chairs: Christian Maltecca, North Carolina State University, and Catherine Ernst, Michigan State University
Sponsors: EAAP, Genus Plc, Pfizer Animal Health

10:30 AM 595  Is genomic selection a one size fits all?
I. Misztal*, University of Georgia, Athens.

11:00 AM 596  Is there value in maintaining small populations? Example of the Dual-Purpose Belgian Blue breed.
N. Gengler*1,2, H. Soyeurt1,2, C. Bastin1, B. Buske1, S. Vanderick1, and F. Colinet1, 1ULg - GxABT, Gembloux, Belgium, 2FNRS, Brussels, Belgium.

11:30 AM 597  Overview of genomic selection in dairy cattle populations.
P. M. VanRaden* and J. R. O’Connell, 1Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2University of Maryland School of Medicine, Baltimore.

11:50 AM 598  Overview of genomic selection in small populations of beef cattle.

12:10 PM 599  Delivering livestock genetic improvement in a genomics era: Evolving roles and responsibilities.
W. Herring* and K. Andersen, Pfizer Animal Genetics, Kalamazoo, MI.

Dairy Foods
Impact of Salt Reduction on Cheese
Chair: Donald McMahon, Utah State University

10:30 AM 601  Influence of salt-in-moisture of full fat and low fat Cheddar cheese on microflora and flavor.
D. J. McMahon*, C. J. Oberg, L. V. Moyes, R. E. Miracle, and M. A. Drake, Western Dairy Center, Utah State University, Logan, 1Department of Microbiology, Weber State University, Ogden, UT, 2Southeast Dairy Foods Research Center, North Carolina State University, Raleigh.

10:45 AM 602  Manufacture and sensory analysis of reduced and low sodium Cheddar cheeses.
B. Ganesan*, K. Brown, D. Irish, C. Brothersen, and D. J. McMahon, Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University, Logan.

11:00 AM 603  Growth and metabolism of Lactobacillus casei in a ripening Cheddar cheese model varying salt, lactate, and lactose concentrations.
J.-H. Oh*, M. F. Budinich, M. A. Drake, R. E. Miracle, J. R. Broadbent, and J. L. Steele, 1Department of Food Science, University of Wisconsin-Madison, Madison, 2Department of Nutrition, Dietetics, and Food Sciences, Utah State University, Logan, 3Department of Food Science, North Carolina State University, Raleigh.

11:15 AM 604  Manufacture and sensory analysis of reduced and low sodium pasta filata style Mozzarella cheeses.
B. Ganesan*, K. Brown, D. Irish, C. Brothersen, and D. J. McMahon, Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University, Logan.

11:30 AM 605  Informatic prediction of alterations to Cheddar cheese flavor reactions and pathways due to sodium substitution.
B. Ganesan* and K. Brown, Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University, Logan.

11:45 AM 606  The effect of NaCl substitution with KCl on Nabulsi cheese: Chemical composition, total viable count, microstructure and texture profile.
N. P. Shah* and MM Ayyash, School of Biomedical and Health Sciences, Victoria University, Melbourne, Victoria, Australia.

12:00 PM 607  The effect of NaCl substitution with KCl on low moisture mozzarella cheese: Chemical composition, organic acid profile, soluble calcium content, functional properties, proteolysis, lactic acid bacterial population, and ACE-inhibitory peptides.
N. P. Shah* and M. M. Ayyash, School of Biomedical and Health Sciences, Victoria University, Melbourne, Victoria, Australia.
### Dairy Foods
**Yogurt and Ice Cream**
**Chair:** Young Park, Fort Valley State University

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>10:30 AM</td>
<td>608</td>
<td>The impact of pectin types on the rheological and physical properties of yogurt.</td>
<td>S. S. Mohamed*1,2 and J. A. Lucey1, 1University of Wisconsin, Madison, 2University of Kafrelsheikh, Egypt.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>610</td>
<td>Yogurts made from milk where heating was performed at different pH values.</td>
<td>T. Ozcan1,2 and J. Lucey*, 1University of Wisconsin-Madison, Madison, 2Uludag University, Bursa, Turkey.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>611</td>
<td>Dextran addition to model acid gels to explore the mechanism by which EPS influence yogurt texture.</td>
<td>U. Pachekrepol* and J. A. Lucey, University of Wisconsin - Madison, Madison.</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>612</td>
<td>Effect of the addition of glucose/glucose oxidase and packagings with different permeability oxygen rates on some characteristics of probiotic yogurts.</td>
<td>A. Cruz1, J. Assis*, D. Granato1, S. Bogusz Junior1, and H. Godoy1, 1University of Campinas (UNICAMP), 2University of São Paulo (USP).</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>613</td>
<td>Effect of increased concentration of glucose oxidase in probiotic stirred yogurt on functionality, proteolytic pattern, and metabolic products.</td>
<td>A. Cruz, W. Castro, and J. Assis*, University of Campinas (UNICAMP).</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>614</td>
<td>Impact of adding galactooligosaccharides on the physical and optical characteristics and sensory acceptance of vanilla ice cream.</td>
<td>A. Cruz, J. Faria*, W. Castro, R. Cadena, and H. Bolini, University of Campinas (UNICAMP).</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>615</td>
<td>Physical properties and functionality of probiotic vanilla ice creams manufactured with different overruns levels.</td>
<td>A. Cruz, J. Faria*, W. Castro, R. Cadena, and H. Bolini, University of Campinas (UNICAMP).</td>
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<td><strong>Withdrawn</strong></td>
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### Extension Education Symposium
**Enhancing Educational Approaches for Future Changes in Biosecurity and Antibiotic Use in Animal Agriculture**
**Chair:** Tamilee Nennich, Purdue University

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>11:00 AM</td>
<td>618</td>
<td>Biosecurity at the farm level: The role of extension in preventing animal disease introduction.</td>
<td>R. Daly*, South Dakota State University, Brookings.</td>
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<tr>
<td>11:30 AM</td>
<td></td>
<td>Changes in Antibiotic Use in Europe.</td>
<td>A. Mathew.</td>
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<tr>
<td>12:00 PM</td>
<td></td>
<td>The Future of Antibiotic Use in the United States.</td>
<td>S. Clark.</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>619</td>
<td>Extension and outreach programs that address contemporary issues in food animal production.</td>
<td>P. D. Ebner*, Purdue University Department of Animal Sciences, West Lafayette, IN.</td>
</tr>
</tbody>
</table>
Horse Species
Equine Advancements
Chair: J. S. McCann, Virginia Tech

10:30 AM  620  Novel approach to measuring internal scrotal temperature in stallions utilizing a thermal sensory device.

10:45 AM  621  Electrolyte and pH response to submaximal training in Quarter and Miniature Horses.
R. M. Legere* and J. S. Pendergraft, Sul Ross State University, Alpine, TX.

11:00 AM  622  Effects of intra-articular lipopolysaccharide injection on circulating leukocyte population in yearling horses.

11:15 AM  623  Role of cellular sodium transport in nonglandular equine gastric ulcer disease.
F. Andrews*, A. Peretich1, R. Reese1, L. Abbott1, and M. Dhar1, 1Louisiana State University, Baton Rouge, 2University of Tennessee, Knoxville.

11:30 AM  624  Effect of concentrate form on gastric ulcer syndrome in horses.
L. R. Huth*, D. H. Sigler, C. A. Cavinder, and N. D. Cohen, Texas A&M University, College Station.

11:45 AM  625  Development of a nutritional model to predict digestible energy requirements for broodmares based on body condition changes.
V. V. Cordero*, C. A. Cavinder, L. O. Tedeschi, and D. H. Sigler, Texas A&M University, College Station.

12:00 PM  626  Equine grazing preferences of twelve cool season grasses.

12:15 PM  627  A comparison of two conventional horse feeders with the Pre-Vent feeder.
M. Carter*, T. Friend, J. Coverdale, S. Garey, A. Adams, and C. Terrill, Texas A&M University, College Station.

12:30 PM  628  Evaluation of a granulated paper waste product as a suitable bedding material for horses.
A. G. Youngblood*, B. J. Rude1, J. D. Davis1, D. L. Christiansen1, C. Mochal1, P. M. Ward1, and P. L. Ryan1, 1Mississippi State University, Starkville, 2Rutgers University, New Brunswick, NJ.

International Animal Agriculture
Chair: Harvey Blackburn, USDA-ARS

10:30 AM  629  Evaluating varying dietary energy levels for optimum growth and early puberty in Sahiwal heifers under sub tropical environment.
M. Abdullah*1, M. Fiaz21, M. Nasir1, M. E. Babar4, J. A. Bhatti1, T. N. Pasha1, and M. A. Jabbar1, 1University of Veterinary & Animal Sciences, Lahore, Punjab, Pakistan, 2Livestock Experiment Station, Jahangirabad, Khanewal, Pakistan.

10:45 AM  630  Performance of Sahiwal calves raised on whole milk, blend or milk replacer with or without calf starter supplementation.
M. Abdullah*1, J. A. Bhatti1, Z. Iqbal1, and K. Hayat1, 1University of Veterinary and Animal Sciences, Lahore, Pakistan, 2Livestock Experiment Station, Jahangirabad, Khanewal, Pakistan.

11:00 AM  631  Withdrawn

11:00 AM  632  Financial and energy analysis spanning the first decade of the pioneer organic beef enterprise in the Mexican tropics.
P. Fajersson*1 and P. Parada, 1EcoAgroPec, Hueytamalco, Puebla, Mexico, 2Carnes La Rumorosa, Poza Rica, Veracruz, Mexico.

11:15 AM  633  Expansion of meat rabbit projects in disaster-stricken Haiti.
S. D. Lukefahr*, M. Kaplan-Pasternak2, J. I. McNitt3, and Benito Migny Jasmin4, 1Texas A&M University, Kingsville, 2Nicasio, CA, 3Southern University Agricultural Research and Extension Center, Baton Rouge, LA, 4Cap Haitian, Haiti.
Meat Science and Muscle Biology Symposium
Biochemical Mechanisms influencing Postmortem Proteolysis and the Identification of Protein Markers for Predicting Tenderness
Chair: Brian Bowker, USDA-ARS, Beltsville, MD
Sponsor: EAAP
297

10:30 AM 634 The role of the muscle cell microenvironment on postmortem proteolysis.
E. Huff-Lonergan* and S. Lonergan, Iowa State University.

11:05 AM 635 Orchestration of postmortem proteolysis following apoptosis onset.
B. Yasmine2, B. Samira2, G. Mohamed2, and O. Ahmed*1, 1INRA de Clermont-Theix, St Genes Champanelle, France, 2University of Constantine, Constantine, Algeria.

11:40 AM 636 Understanding postmortem proteolysis and identification of protein markers for tenderness using proteomics approaches.
E. Veiseth-Kent* and K. Hollung, Nofima Mat AS, Ås, Norway.

Nonruminant Nutrition
DDGS
Chair: Mike Rincker, DPI Global
386-387

10:30 AM 637 Growth and physiological responses of growing pigs to co-fermented wheat and corn distillers dried grains with solubles.
D. Ayoade*, E. Kiarie, B. Slominski, and CM Nyachoti, University of Manitoba, Winnipeg, Manitoba, Canada.

10:45 AM 638 High-protein distillers dried grains can replace soybean meal in the diets for growing-finishing pigs.
L. Ma*1 and G. Allee2, 1Chia Tai Investment Co., Ltd., Beijing, China, 2University of Missouri, Columbia.

11:00 AM 639 Effects of including tallow, palm kernel oil, corn germ, or glycerol to diets containing distillers dried grains with solubles on pork fat quality of growing-finishing pigs.

11:15 AM 640 The impact of feeding corn distillers dried grains with solubles to sows on plasma and milk vitamin E and selenium levels.
S. A. Crowder* and M. E. Johnston, JBS United Inc., Sheridan, IN.

11:30 AM 641 Evaluation of various corn distillers dried grains with solubles (DDGS) feeding strategies in nursery pigs.
N. L. Horn*, C. R. Little, and J. D. Spencer, JBS United Inc., Sheridan, IN.

11:45 AM 642 Effects of distillers dried grains with solubles in the diet of gestating sows on nutrient excretion.

Nonruminant Nutrition Symposium
Nutrition’s Role in Environmental Management and Meeting Government Regulations
Chair: W. Randy Walker, DPI Global
Sponsor: EAAP
383-385

10:30 AM 643 An update on current environmental regulations and standards for livestock facilities.
D. Porter*, Environmental Protection Agency, Region 7, Kansas City, KS.

11:00 AM 644 Environmental management regulations in Europe.
N. Penlington*, BPEX, Warwickshire, UK.

11:30 AM 645 Nutritional practices that affect the environment-excretion of nitrogen, phosphorus, and sulfur; and emissions of odors and greenhouse gases from swine production facilities.
B. J. Kerr*, USDA-ARS-NLAE, Ames, IA.
Practical application of manure management plans of a swine production system to row crop production agriculture.
B. S. Borg*, Murphy Brown LLC, Ames, IA.

Physiology and Endocrinology II
Chair: Jason Ross, Iowa State University

Can prenatal social stress impact sex characteristics in piglets?
L. A. Mack*, S. D. Eicher1, A. K. Johnson1, D. C. Lay1, B. T. Richert1, and E. A. Pajor4, 1Purdue University, W. Lafayette, IN, 2LBRU, USDA-ARS, W. Lafayette, IN, 3Iowa State University, Ames, 4University of Calgary, Calgary, AB, Canada.

Heat stress increases small intestinal permeability and circulating endotoxin in growing pigs.

The effect of naloxone on reproductive behavior and plasma prolactin levels in third lactation sows.
V. O. Fuentes Hernandez*, R. Orozco Hernandez, and A. Bernal Canseco, Centro Universitario de los Altos, Universidad de Guadalajara, Tepatitlan Jalisco, Mexico.

Differential expressed proteins in porcine follicular fluid during folliculogenesis.
J. M. Feugang*, K. Pendarvis1, S. T. Willard1, and P. L. Ryan1, 1Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State, 2Life Science Biotechnology Institute, Mississippi State University, Mississippi State, 3Department of Biochemistry and Molecular Biology, Mississippi State University, Mississippi State, 4Department of Pathobiology and Population Medicine, Mississippi State University, Mississippi State.

Effects of glucuronic acid supplementation on the in vitro maturation and fertilization of pig oocytes.
A. R. Clark* and B. D. Whitaker, The University of Findlay, Findlay, OH.

Vitrification versus freezing for cryopreserving bovine embryos.
S. G. Kruse* and G. E. Seidel, Colorado State University, Fort Collins.

Production, Management and the Environment Production
Chair: John Comerford, Penn State University

Adapation of a kinetic chromogen LAL test system to investigate the incidence of endotoxins on pig farms.
S. Schaumberger*, C. Ratzinger, L. Krüger, and G. Schatzmayr, BIOMIN Research Center, Tulln, Austria.

Effect of day of mixing gestating sows on measures of reproduction and animal well-being.
M. Hopgood*, L. Greiner1, J. Connor1, J. Salak-Johnson1, and R. Knox1, 1University of Illinois, Urbana, 2Carthage Veterinary Service, Carthage, IL.

A pig growth model for assessment of environmental footprint from swine operations: Effect of dietary energy and lysine supply.
A. B. Strathe*, A. Danfaer1, H. Jorgensen1, and E. Kebreab1, 1Department of Animal Science, University of California, Davis, 2Department of Animal Health and Bioscience, Faculty of Agricultural Sciences, Aarhus University, Blichers Allé 20, 8830 Tjele, Denmark.

Evaluating the biological and economic differences between light- and heavy-birth weight piglets.
D. A. Widmar*, N. J. Olynk, A. P. Schinckel, B. T. Richert, and K. A. Foster, Purdue University, West Lafayette, IN.

Withdrawn
Withdrawn
11:30 AM 661 Doe reproductive rates among Boer F1 and four purebred genotypes including Myotonic in the southeastern United States.
A. Nguluma*, R. Browning2, A. Pellerin1, J. Groves1, and M. Leite-Browning3, 1Tennessee State University, Nashville, 2Alabama A&M University, Huntsville.

11:45 AM 662 Survival rates within a breeding population of Boer, Kiko, and Spanish does managed in the southeastern United States.
A. Pellerin*, R. Browning1, M. Leite-Browning2, and M. Byars1, 1Tennessee State University, Nashville, 2Alabama A&M University, Huntsville.

Ruminant Nutrition
Dairy: Fats, Proteins, and Carbohydrates
Chair: Stephanie Ward, Mississippi State University
293

10:30 AM 663 The effect of increasing the nutrient and amino acid concentration of whole milk diets on dairy heifer individual feed intake, growth, development and lactation performance.
J. K. Margerison*, IFNHH Massey University, Private Bag 11 222, Palmerston North, New Zealand.

10:45 AM 664 Integration of cyclic GMP-dependent protein kinase (PKG) and phosphatidylinositol 3-kinase (PI3K) on rumen protozoal chemotaxis to glucose and soluble peptides.
H. L. Diaz* and J. L. Firkins, The Ohio State University, Department of Animal Science, Columbus.

11:00 AM 665 Evaluation of specificity of hydrolysis methods for separation of water-soluble carbohydrates.
M. B. Hall*, US Dairy Forage Research Center, USDA-ARS, Madison, WI.

11:15 AM 666 Effect of dietary protein level and rumen-protected amino acid supplementation on dietary amino acid apparent digestibility and recovery in milk in lactating dairy cows.
C. Lee*, A. N. Hristov1, T. Cassidy1, K. Heyler1, H. Lapiere2, G. A. Varga1, and C. Parys3, 1Pennsylvania State University, University Park, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Evonik Degussa GmbH, Hanau, Germany.

11:30 AM 667 Microbiome analysis of the rumen, cecum, and feces of dairy cows with subacute ruminal acidosis.
E. Khafipour1, S. Li*, J. C. Plaizier1, S. E. Dowd2, and D. O. Krause1, 1University of Manitoba, Winnipeg, MB, Canada, 2Medical Biofilm Research Institute, Lubbock, TX.

11:45 AM 668 The effect of diet on milk fatty-acid profiles in Holstein dairy cattle on commercial dairy farms.
R. W. Swidan*, Y. Chouinard2, R. Lacroix1,3, D. Lefebvre3, and K. M. Wade1, 1McGill University, Montreal, QC, Canada, 2Laval University, Quebec City, QC, Canada, 3Valacta, Ste. Anne de Bellevue, QC, Canada.

12:00 PM 669 Effects of close-up dietary energy strategy and prepartal dietary monensin on production and metabolism in Holstein cows.
J. A. Vasquez*, K. L. Perfield2, H. B. Green1, and J. K. Drackley1, 1University of Illinois, Urbana, 2Elanco Animal Health, Greenfield, IN.

12:15 PM 670 Effects of close-up dietary energy strategy and prepartal dietary monensin on rumen dynamics and fermentation in Holstein cows.

12:30 PM 791 Feeding a C16:0-enriched fat supplement increased the yield of milk fat and improved feed efficiency.

Ruminant Nutrition Symposium
Modulation of Metabolism Through Nutrition and Management
Chair: Masahito Oba, University of Alberta
291-292

10:30 AM 671 Optimizing production of the offspring: Nourishing and managing the dam and the calf early in life.
A. Bach*, 1Department of Ruminant Production, IRTA, Barcelona, Spain, 2ICREA, Barcelona, Spain.
11:00 AM 672 Optimizing production of the dairy cow: Nutrition and management during late pregnancy.  
J. K. Drackley*, University of Illinois, Urbana.

11:40 AM 673 Optimizing production of the dairy cow: Nutrition and management during early lactation.  
J. P. McNamara*, Washington State University, Pullman.

12:30 PM 674 Optimizing production during heat stress: Nutrition and Management.  
L. H. Baumgard**1 and R. P. Rhoads1, 1Iowa State University, Ames, 1University of Arizona, Tucson.

Ruminant Nutrition
Small Ruminants  
Chair: Darrell Rankins, Auburn University

10:30 AM 675 Toxicokinetic and carry-over of ochratoxin A in lactating goats.  
R. Blank*, M. Looff2, M. Mobashar3, A. Westphal4, and K.-H. Südekum5, 1University of Kiel, Germany, 2University of Bonn, Germany.

10:45 AM 676 Effects of replacing rolled barley grain with wheat dried distillers’ grains with solubles in Merino sheep rations.  
A. S. O’Hara*, A. V. Chaves1, E. Jonas2, A. Tanner3, D. Palmer4, and R. D. Bush5, 1Faculty of Veterinary Science, The University of Sydney, Sydney, NSW, Australia, 2Faculty of Agriculture, Food and Natural Resources, The University of Sydney, Sydney, NSW, Australia.

11:00 AM 677 Effects of dried distillers grains with solubles on feedlot lamb performance and carcass characteristics.  

11:15 AM 678 Estimation of milk yield of West African Dwarf (WAD) ewe fed Mexican sunflower leaf meal (MSLM) based diets.  

11:30 AM 679 Iron carbonate supplementation of lambs administered high-sulfur water.  
A. M. Jons*, K. L. Kessler1, K. J. Austin1, C. Wright2, and K. M. Cammack1, 1University of Wyoming, Laramie, 2South Dakota State University, Brookings.

11:45 AM 680 Effect of supplementing ewes during late gestation with metabolizable protein on wether lamb feedlot performance, carcass characteristics, and nitrogen balance.  
M. L. Van Emon*, K. A. Vonnahme1, L. A. Lekatz1, K. R. Maddock Carlin2, M. M. Thompson2, and C. S. Schauer1, 1Department of Animal Sciences, North Dakota State University, Fargo, 2Hettinger Research Extension Center, North Dakota State University, Hettinger.

12:00 PM 681 Effect of increasing dietary inclusion of dried distillers grains with solubles on nutrient digestion and retention in growing lambs.  
T. L. Felix* and S. C. Loerch, The Ohio State University, Wooster.

12:15 PM 682 Performance of growing West African Dwarf ewe fed Mexican sunflower leaf meal based diets.  
A. H. Ekeocha*, University of Ibadan, Ibadan, Oyo, Nigeria.

12:30 PM 683 Use of Megaphaera elsdenii NCIMB 41125 during introduction of sheep on corn crop residues and un-harvested corn lands.  
P. H. Henning* and F. M. Hagg, MS Biotech, Centurion, South Africa.

Small Ruminant  
Health and Genetics
Chair: Rebecca Cockrum, University of Wyoming

10:30 AM 684 White blood cell populations in goat kids and lambs during the first four days of life, with special reference to CD4 and CD8.  
A. Arguello*, L. E. Hernandez-Castellano1, A. Morales delaNuez1, I. Moreno-Indias2, J. Capote2, and N. Castro1, 1Universidad de Las Palmas de Gran Canaria, Arucas, Las Palmas, Spain, 2Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.
Immune status of goat kids fed cow’s milk with an exogenous source of DHA.

Effects of feeding sericea lespedeza as a natural anthelmintic for Haemonchus contortus in lactating does.
J. L. Vest*, M. A. Brown, J. D. Kohler, M. D. Hudson, S. R. Nusz, J. M. Burke, J. E. Miller, and E. L. Walker, †Missouri State University, Springfield, ‡Louisiana State University, Baton Rouge, †Dale Bumpers Small Farms Research Center, USDA-ARS, Booneville, AR, §Grazinglands Research Laboratory, USDA-ARS, El Reno, OK, ‡Redlands Community College, El Reno, OK.

Polymorphisms in the melanocortin-1 receptor (MC1R) gene in Nigerian indigenous goats.

Molecular identification of Trypanosoma vivax infection and physiological indices in Nigerian sheep.
G. O. Onasanya, M. A. Adefenwa, B. O. Agaviezor, C. O. N. Ikeobi, M. Wheto, M. Okpeku, A. Yakubu, O. O. I. Takeet, M. De Donato, and I. G. Imumorin, †Dept of Animal Breeding and Genetics, University of Agriculture, Abeokuta, Nigeria, †Dept of Cell Biology and Genetics, University of Lagos, Lagos, Nigeria, †Dept of Animal Science and Fisheries, University of Port Harcourt, Port Harcourt, Nigeria, †Dept of Livestock Production, Niger Delta University, Amassoma, Nigeria, †Dept of Animal Science, Nasarawa State University, Lafia, Nigeria, †Dept of Veterinary Microbiology and Parasitology, University of Agriculture, Abeokuta, Nigeria, †Dept of Animal Science, Cornell University, Ithaca, NY.

Polymorphism in the ovine TNXB gene and association with morphological traits and physiological status in Nigerian Indigenous sheep.

Lean lamb production during the process of grading up to hair sheep genetics.

OTHER EVENTS

Mixed Models
390
10:30 AM - 5:00 PM

The Mixed Models workshop provides a comprehensive exposition of proper statistical data analysis and power determinations of commonly used experimental designs in the animal sciences; our approach is example-driven and primarily based on the various mixed model analysis procedures available in SAS software.
### SYMPOSIA AND ORAL SESSIONS

Alpharma Beef Cattle Nutrition Symposium  
**Enhancing Beef Production Efficiency with New Knowledge and Technologies:**  
**Building the Bridges for Future Collaboration**  
Chair: Darrin L. Boss, Montana State University  
Sponsors: Alpharma Animal Health, ASAS Foundation

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<th>Time</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>691</td>
<td>Implications of nutritional management for beef cow/calf systems.</td>
<td>R. N. Funston*, University of Nebraska, West Central Research and Extension Center, North Platte.</td>
</tr>
<tr>
<td>2:35 PM</td>
<td>692</td>
<td>Altering the ruminal microbiome and its potential impact on animal nutrition and performance.</td>
<td>S. L. Lodge-Ivey*, New Mexico State University, Las Cruces.</td>
</tr>
<tr>
<td>3:10 PM</td>
<td>693</td>
<td>Nutrition and the genome.</td>
<td>H. L. Neibergs*, Washington State University, Pullman.</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>694</td>
<td>Impacts of health status and disease prevention with nutrition and performance of beef cattle.</td>
<td>B. P. Holland*¹ and L. O. Buriaga-Robles², ¹Department of Animal and Range Sciences, South Dakota State University, Brookings, ²Feedlot Health Management Services Ltd., Okotoks, Alberta, Canada.</td>
</tr>
<tr>
<td>4:20 PM</td>
<td>695</td>
<td>Interactions with beef cattle nutrition and metabolism: Developing an integrated across discipline approach to research; building the bridges for future collaboration, summary.</td>
<td>D. L. Boss*, Montana State University, Bozeman.</td>
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### Animal Health  
**Dairy I**  
Chair: Pedram Rezamand, University of Idaho

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<th>Time</th>
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<tr>
<td>2:00 PM</td>
<td>696</td>
<td>Effect of a micronutrient supplement on the functional capacity of neutrophils harvested from the blood of dairy cows during the periparturient period.</td>
<td>X. S. Revelo*, A. L. Kenny, N. M. Barkley, and M. R. Waldron, University of Missouri, Columbia.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>697</td>
<td>Multiple Mycoplasma spp. detected in bulk tank milk samples using real-time PCR and conventional culture, and agreement between test methods.</td>
<td>D. J. Wilson*, ¹A. Justice-Allen¹, J. D. Trujillo¹, and G. Goodell¹, ¹Utah State University, Logan, ²Arizona Game and Fish Department, Phoenix, ³Iowa State University, Ames, ⁴The Dairy Authority, Greeley, CO.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>698</td>
<td>Multiple tests based estimates of Mycobacterium avium ssp. paratuberculosis prevalence in domestic ruminant population suspected for Johne's disease.</td>
<td>S. V. Singh*¹, P. K. Singh¹, A.V. Singh¹, B. Singh¹, A. Kumar¹, A. Srivastav¹, S. Gupta¹, H. Singh¹, A. Mittal¹, S. Yadav¹, and J. S. Sohal¹, ¹Central Institute for Research on Goats, Mathura, Uttar Pradesh, India, ²College of Veterinary Sciences, Mathura, Uttar Pradesh, India.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>699</td>
<td>Evaluation of a BVD milk ELISA test detecting anti-p80 antibody and comparison with ear notch testing for PI cattle.</td>
<td>D. J. Wilson*, K. A. Rood¹, and G. Goodell¹, ¹Utah State University, Logan, ²The Dairy Authority, Greeley, CO.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>702</td>
<td>Effects of OmniGen-AF on enhancing immunity in dairy heifers vaccinated with a Staphylococcus aureus bacterin.</td>
<td>V. J. Eubanks*¹, N. E. Forsberg¹, Y. Q. Wang¹, K. Zanzalari¹, J. Chapman¹, D. J. Hurley¹, F. M. Kautz¹, L. O. Ely¹, and S. C. Nickerson¹, ¹University of Georgia, Athens, ²Oregon State University, Corvallis, ³Prince Agri Products Inc., Quincy, IL.</td>
</tr>
</tbody>
</table>
3:45 PM  703  Genetic parameters of adaptive immune response traits in Canadian Holsteins and implications for health.  
K. Thompson-Crispi*, A. Sewalem2,3, F. Migliori2,3, and B. Mallard1, 1Dept. Pathobiology, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada, 2Guelph Food Research Center, Agriculture and Agri-Food Canada, Guelph, Ontario, Canada, 3Canadian Dairy Network, Guelph, Ontario, Canada.

4:00 PM  704  The relationship between measured optical density of uterine lavage samples and clinical endometritis.  
V. S. Machado*, M. L. S. Bicalho, and R. C. Bicalho, Cornell University, Ithaca, NY.

4:15 PM  705  Survey of individual cow records to identify factors associated with lameness in dairy cattle in New Zealand.  
C. M. Lira-Diaz1, J. K. Margerison*, and N. Lopez-Villalobos, 1Massey University, IFNHH, Palmerston North, New Zealand, 2Massey University, IVABS, Palmerston North, New Zealand.

4:30 PM  706  Claw horn disease and claw horn anatomy: A meta-analysis in UK and New Zealand first-lactation dairy cattle.  
L. A. Lethbridge and J. K. Margerison*, IFNHH Massey University, Palmerston North, New Zealand.

Breeding and Genetics  
Dairy Cattle Breeding II  
Chair: John B. Cole, Animal Improvement Programs Laboratory, ARS-USDA, Beltsville, MD  
286-287

2:00 PM  707  Methods for the assessment of milk coagulation properties: a genetic analysis.  
A. Cecchinato*, M. Penasa, M. De Marchi, C. Cipolat Gotet, I. Bazzoli, N. Cologna, and G. Bittante, Department of Animal Science, University of Padova, Viale dell’Università 16, 35020 Legnaro, Padova, Italy.

2:15 PM  708  Genetic relationships between fertility and content of major fatty acids in milk for first-parity Walloon Holstein cows.  
C. Bastin*, N. Gengler1,2, and H. Soyeurt1,2, 1University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

2:30 PM  709  Relationships between mortality and 305-d milk yield of Holstein cows in three regions in US.  
K. Tokuhisa*, S. Tsuruta, and I. Misztal, University of Georgia, Athens.

2:45 PM  710  Genetic parameters of body condition score and other type traits in Canadian Holsteins.  
S. Loker*, C. Bastin, F. Migliori, A. Sewalem1,4, L. R. Schaeffer1, J. Jamrozik1, and V. Osborne2, 1CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, CANADA, 2University of Liège, Gembloux Agro-Bio Tech, Gembloux, Belgium, 4Guelph Food Research Centre, Agriculture and Agri-Food Canada, Guelph, ON, Canada, 3Centre for Nutrition Modelling, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

3:00 PM  711  Relationship between body condition score, locomotion and dairy strength with functional longevity in Canadian Holsteins.  
A. Sewalem*, F. Migliori, and G. Kistemaker, 1Agriculture and Agri-Food Canada, Guelph, Ontario, Canada, 2Canadian Dairy Network, Guelph, Ontario, Canada.

3:15 PM  712  Modeling of residual feed intake for primiparous dairy cow using orthogonal polynomial random regression.  

3:30 PM  713  Genetic association of days open with feed intake and efficiency.  
J. E. Vallimont1, C. D. Dechow*, J. M. Daubert1, M. W. Dekleva1, and J. W. Blum2, 1Pennsylvania State University, University Park, 2University of Bern, Bern, Switzerland.

Breeding and Genetics  
Molecular Genetics  
Chair: Catherine W. Ernst, Michigan State University  
290

2:00 PM  714  A comparison of six protocols for isolation of high quality and quantity ovine genomic DNA suitable for microarray analysis.  
A. Psifidi1, C. I. Dovas2, G. Bramis1, G. Arsenos1, and G. Banos*, 1Department of Animal Production, Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, GR 54124, Thessaloniki, Greece, 2Laboratory of Microbiology and Infectious Diseases, Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, GR 54124, Thessaloniki, Greece.
2:15 PM 715  
**Association between the ghrelin gene with milk production traits in Murrah buffaloes (Bubalus bubalis).**  

2:30 PM 716  
**Relationship between horn fly infestation and polymorphisms in cytochrome P450 and prolactin promoter genes in beef cows.**  

2:45 PM 717  
**Gene expression analysis and fatty acid profiling in concentrate and pasture based beef finishing systems.**  

3:00 PM 718  
**Expression analysis of key genes of bovine fat metabolism indicated correlated trans regulatory mechanisms in a bovine resource population segregating for two major genes affecting growth and lipid deposition.**  
Ch. Kuehn*, C. Kalbe, R. Brunner, T. Goldammer, and R. Weikard, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany.

3:15 PM 719  
**Sound and efficient designs and models for RNA-seq experiments with application in animal genomics.**  
J. P. Steibel* and P. Reeb, *Michigan State University, East Lansing.*

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**Dairy Foods**  
**Cheese**  
**Chair: Randy Brandsma, Schreiber Foods**  
295

2:00 PM 720  
**Microbial and sensory evaluation of fresh Mozzarella cheese.**  
B. Ganesan*, D. Irish, C. Brotherson, and D. J. McMahon, Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University, Logan.

2:15 PM 721  
**CheddarCyc: A database of Cheddar cheese flavor reactions and pathways.**  
B. Ganesan* and K. Brown, Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University, Logan.

2:30 PM 722  
**New approaches to understand cheese ripening.**  

2:45 PM 723  
**In situ proteolytic activity of Lactobacillus helveticus and stretchability of Swiss-type cheese.**  

3:00 PM 724  
**Influence of Hofmeister salts on the textural and rheological properties of nonfat process cheese.**  
J. A. Stankey* and J. A. Lucey, University of Wisconsin, Department of Food Science, Madison.

3:15 PM 725  
**Impact of reforming on low-fat cheese texture as influenced by pH.**  
C. Akbulut* and J. A. Lucey, Department of Food Science, University of Wisconsin, Madison.

3:30 PM 726  
**Recovery of ω-3 fatty acids in Cheddar cheese curd and long-term stability of ω-3 fatty acids in whey powder.**  
B. Ganesan*, C. Brotherson, and D. J. McMahon, Western Dairy Center, Department of Nutrition, Dietetics and Food Sciences, Utah State University, Logan.

3:45 PM 727  
**Rheology, microstructure and quality of curd made from buffalo milk: A comparison with ultrafiltered cows’ milk.**  
I. Hussain*, A.S. Grandison, and A.E. Bell, Department of Food and Nutritional Sciences, University of Reading, Reading, Berkshire, UK.
2:00 PM 728 **Effect of milk processing on the MFGM proteins and phospholipids.**
X. Elias-Argote* and R. Jiménez-Flores, California Polytechnic State University, San Luís Obispo.

2:15 PM 729 **Focus on milk fat globule membrane proteins from goat milk.**

2:30 PM 730 **Identification of major milk fat globule membrane proteins from pony mare’s milk highlights the molecular diversity of lactadherin across species.**
C. Cebo*1, E. Rebours1, C. Henry1, S. Makhzami1, P. Cosette1, and P. Martin1, 1INRA, UMR1313 Unité Génétique Animale et Biologie Intégrative, Jouy-en-Josas, France, 2INRA, Plateforme PAPSSO (Plateforme d’Analyse Protéomique Paris Sud Ouest), Jouy-en-Josas, France, 3UMR6270 CNRS, Université de Rouen, Plateforme Protéomique de l’IFRMP23, Mont-Saint-Aignan Cedex, France.

2:45 PM 731 **Effect of methane emission reducing diet on coagulation properties of bovine milk.**
A. Aprianita*, O. N. Donkor*, P. J. Moate2, M. J. Auldist2, J. S. Greenwood2, W. J. Wales2, and T. Vasiljevic3, 1School of Biomedical and Health Sciences, Faculty of Health, Engineering and Science, Victoria University, Melbourne, Victoria, Australia, 2Department of Primary Industries, Ellinbank, Victoria, Australia.

3:00 PM 732 **Development of a method to determine the susceptibility of raw milk to oxidation.**
J. K. Amamcharla* and L. E. Metzger, Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings.

3:15 PM 733 **Measurement of a milk gelation time constant using laser-scanning fluorescence confocal microscopy and image processing techniques.**
R. Hennessy*1 and R. Jimenez-Flores3, 1Cal Poly Biomedical Engineering, San Luis Obispo, 2Cal Poly, DPTC, San Luis Obispo.

3:30 PM 734 **Mid-infrared predictions of lactoferrin content in bovine milk.**
H. Soyeurt1,2, C. Bastin1, F. Colinet1, V. Arnould1, D. Berry1, E. Wall1, N. Gengler1,2, P. Dardenne1, and S. McParland1, 1University of Liège, Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Namur, Belgium, 2National Fund for Scientific Research, Brussels, Brussels, Belgium, 3CONVIS Herdbuch, Ettelbruck, Luxembourg, 4Animal and Grassland Research and Innovation Centre, Teagasc, Fennery, Cork, Ireland, 5Animal and Grassland Research and Innovation Centre, Teagasc, Penicuik, Midlothian, UK, 6Agricultural Walloon Research Centre, Quality Department, Gembloux, Namur, Gembloux.

3:45 PM 735 **First assessment of diffusion coefficients in model cheese by fluorescence recovery after photobleaching (FRAP) analysis.**
J. Floiry*1,2, M. N. Madec2, M. H. F. Famelart2, S. Jeanson2, and S. Lortal3, 1Agrocampus Ouest, UMR1253, Rennes, France, 2INRA, UMR1253, Rennes, France.

**Growth and Development**
**Animal Performance and Cellular Differentiation**
**Chairs: John Blanton, The Samuel Roberts Noble Foundation, and Nicholas Gabler, Iowa State University**

2:00 PM 736 **Repeated transport influences feed intake, but not feed efficiency in Holstein calves.**

2:15 PM 737 **Effects of serum protein-based arrival formula and serum protein supplement (Gammulin) on plasma metabolites in transported dairy calves.**
A. Pineda1, J. J. Drackley1, J. M. Campbell1, and M. A. Ballou1, 1University of Illinois, Urbana, 2APC Inc., Ankeny, IA, 3Texas Tech University, Lubbock.
Meat Science and Muscle Biology
Lamb and Pork Quality and Muscle Biology and Meat Products
Chair: Kasey Carlin, North Dakota State University

2:00 PM 2746 Carcass and meat attributes of Red Sokoto buck goats as influenced by post-slaughter processing methods.
A. B. Omojola*, 1, S. E. Apata1, and O. O. Olusola1, 1University of Ibadan, Ibadan, Oyo State, Nigeria, 2Glabisi Onabanjo University, Ago Iwoye, Ogun State, Nigeria, 3University of Ibadan, Ibadan, Oyo State, Nigeria.

2:15 PM 2747 Yield of West African dwarf buck goats slaughtered at different weights.
A. B. Omojola*, S. Attah1, and O. O. Olusola1, 1University Of Ibadan, Ibadan, Nigeria, 2University of Agriculture, Markurdi, Nigeria, 3University of Ibadan, Ibadan, Nigeria.

2:30 PM 2748 Fatty acid composition of muscles from Sarda suckling lamb reared indoor and outdoor.

2:45 PM 2749 Nutritive and organoleptic characteristics of kilishi as affected by meat type and ingredient formulation.
O. O. Olusola*, A. B. Omojola, and A. O. Okubanjo, University of Ibadan, Ibadan, Oyo, Nigeria.

3:00 PM 2750 Over-nutrition during pregnancy increases collagen content in the skeletal muscle of mature male offspring.

3:15 PM 2751 Intrauterine crowding impairs formation as well as growth of secondary myofibers.
C. E. Pardo1, 2, A. Koller-Bähler1, M. Kreuzer2, and G. Bee*, 1Agriscope Liebefel Posieux, Posieux, Switzerland, 2Department of Agricultural and Food Science, Zurich, Switzerland.
Microarray analysis of the differentially expressed genes in adipose tissues between Jinhua pigs and Landrace pigs.
T. Wu*, Z. Yuan, Y. Wang, and T. Shan, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang province, China.

SIFT-MS identifies unique volatile masses in 24 h post-mortem loins from Berkshire- and Landrace-influenced swine.

Nonruminant Nutrition
Feed Ingredients/Feed Additives
Chair: Brian Kerr, USDA-ARS-NLAE, Ames, IA
386-387

A partial replacement of soybean meal by whole or defatted algal meal in diet for weanling pigs does not affect their plasma biochemical indicators.
E. Isaacs*, K. Roneker1, M. Huntley1, and X. G. Lei1, 1Cornell University, Ithaca, NY, 2Cellana, Kailua-Kona, HI.

Effects of soybean meal of different origins and micronization of high protein soybean meal on nutrient digestibility and productive performance of weanling pigs.

Effects of adding cracked corn to a pelleted supplement for nursery and finishing pigs.
C. B. Paulk*, A. C. Fahrenholz1, J. M. Wilson1, L. J. McKinney1, J. D. Hancock1, K. C. Benhke1, J. C. Ebert2, and J. J. Ohlde2, 1Kansas State University, Manhattan, 2Key Feeds, Clay Center, KS.

Inulin, alfalfa and citrus pulp in diets for piglets: Effects on digestibility and metabolism of N.
S. Brambillasca*, E. Menezes1, P. Zunino2, and C. Cajarville1, 1Departamento de Nutrición Animal, Facultad de Veterinaria, UdelaR, Montevideo, Montevideo, Uruguay, 2Departamento de Microbiología, Instituto de Investigaciones Biológicas Clemente Estable, MEC, Montevideo, Uruguay.

Comparative efficacy of meal and extracts of Aspilia africana leaf in laying quails.
O. O. K. Oko*, University of Calabar, Calabar, Cross River State, Nigeria.

Effect of mycotoxin inhibitor (sim wall) on mold colonized feed in broiler chicken.
S. Akore1, D. Eruvbetine1, E. B. Okezie2, M. A. Oyekunle1, and A. M. Bamgbose1, 1University of Agriculture, Abeokuta, Ogun State, Nigeria, 2International Institute of Tropical Agriculture, Ibadan, Oyo State, Nigeria.

Impact of tylosin phosphate and ractopamine hydrochloride alone or in combination on growth performance, feed efficiency and water intake in finishing pigs.
C. M. Pilcher*, R. Arentson1, and J. F. Patience1, 1Iowa State University, Ames, 2Elanco Animal Health, Greenfield, IN.

Dietary nucleotides as an alternative to antibiotic growth promoters (AGP) for nursery pigs.

In vitro fermentative characteristics of citrus pulp, apple pomace and inulin combined in increasing levels with a pre-digested dog food.
Nonruminant Nutrition Symposium
Nutrition and Gut Microbiome
Chair: James E. Pettigrew, University of Illinois
Sponsors: EAAP, Pancosma

383-385

2:00 PM 764 Whole-body systems approaches for gut microbiota-targeted, preventive healthcare.
L. Zhao*, Shanghai Jiao Tong University, Shanghai, China.

2:30 PM 765 Dietary modulation of the gut microbiota by prebiotics and probiotics.
G. R. Gibson*, University of Reading, Reading, UK.

3:00 PM 766 Effect of dietary change on equine and swine gut microbiota.
K. Daly*, A. Darby, N. Hall, C. Proudman, D. Bravo, and S. P. Shirazy-Beechey, 1Department of Molecular and Cellular Physiology, University of Liverpool, Liverpool, UK, 2Department of Functional and Comparative Genomics, University of Liverpool, Liverpool, UK, 3Equine Division, Department of Veterinary Clinical Sciences, University of Liverpool, Liverpool, UK, 4Pancosma, Geneva, Switzerland.

3:30 PM Break

3:45 PM 767 Dietary manipulation of canine and feline microbiota.
K. S. Swanson*, Department of Animal Sciences and Division of Nutritional Sciences, University of Illinois, Urbana.

4:15 PM 768 Rumen microbiota, assessed by evolving techniques.
R. J. Wallace*, Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, UK.

4:45 PM Questions

Physiology and Endocrinology
Nutritional Physiology
Chair: Kevin Harvatine, Penn State University

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2:00 PM 769 Effect of short-term supplementation and temporary weaning in hepatic gene expression in Hereford cows grazing native pasture.

2:15 PM 770 Feeding distillers grains as an energy source to gestating and lactating heifers: Impact on ovarian function and reproductive efficiency.
P. J. Gunn*, J. P. Schoonmaker, R. P. Lemenager, and G. A. Bridges, 1Purdue University, West Lafayette, IN, 2University of Minnesota, Grand Rapids.

2:30 PM 771 Comparison of Brahman females evaluated for residual feed intake (RFI) as heifers and reevaluated for RFI as gestating cows.

2:45 PM 772 Effect of temperament on response to cannulation and glucose challenge in Brahman heifers.
B. L. Bradbury*, L. C. Caldwell, A. W. Lewis, D. A. Neuendorff, R. C. Vann, T. H. Welsh, and R. D. Randeil, 1Texas AgriLife Research, Overton, 2Texas AgriLife Research, College Station, 3MAFES-Brown Loam Experiment Station, Raymond, MS.

3:00 PM 773 The role of parathyroid hormone and calcitonin in the prevention of hypocalcemia under induced metabolic acidosis in cattle.
E. M. Rodríguez*, A. Bach, and A. Arís, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain.

3:15 PM 774 Molecular control of puberty as affected by nutrition and leptin infusion in zebu heifers.

3:30 PM Break
Energy balance alters leptin but not adiponectin mRNA in Holstein cows.
D. A. Koltes* and D. M. Spurlock, Iowa State University, Ames.

Effect of a high-energy diet after weaning on luteinizing hormone secretion in Holstein bulls.
The Ohio State University, Columbus, Select Sires Inc., Plain City, OH.

Effects of volatile fatty acid infusions on angiopoietin-like protein 4 concentration in plasma and ruminal papillae of cattle.
S. H. Li, B. J. Bradford, and L. K. Mamedova, Kansas State University, Manhattan.

Incorporation of essential and non-essential fatty acid into distinct lipid classes in cultured bovine and porcine small intestine and muscle explants.
C. Caldari-Torres* and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.

Hepatokine, growth hormone, and PPARα-regulated gene network expression in liver of peripartal cows fed two levels of dietary energy prepartum.
The University of Illinois, Urbana, University of Missouri, Columbia, Kansas State University, Manhattan.

Production, Management and the Environment
Dairy Facilities
Chair: Stephanie Hill, Mississippi State University

Herd turnover and mortality in low profile cross-ventilated and naturally ventilated dairy barns in the Upper Midwest.

Mortality and herd turnover rates in dairy herds utilizing recycled manure solids for bedding freestalls.

Effectiveness of fly traps and baits at three primary fly sites on Florida dairy farms.

Chemical and bacteriological characteristics of digested, composted, and separated raw manure solids prior to use as freestall bedding.

Chemical and bacteriological characteristics of digested, composted, and separated raw manure solids used as freestall bedding.
A. W. Husfeldt*, M. I. Endres, S. M. Godden, and J. Fetrow, University of Minnesota, St. Paul.

Temperature and humidity in cross-ventilated and naturally ventilated dairy barns in the upper Midwest.

A one-year comparison of house fly and stable fly populations at three different types of dairy facilities in the Texas Panhandle.
Texas AgriLife Extension and Research, Stephenville, Texas Agrilife Extension, Canyon, Texas AgriLife Extension and Research, Dallas.

Ruminant Nutrition
Dairy: Minerals, Vitamins, and Other Stuff
Chair: Jose Santos, University of Florida

Effect of sodium chloride intake on urea concentration in milk from dairy cows.
J. W. Spek*, J. Dijkstra, J. J. G. C. van den Borne, and A. Bannink,
Wageningen University, Wageningen, the Netherlands, Wageningen UR Livestock Research, Lelystad, the Netherlands.
  J. H. Harrison*, R. James¹, C. Stallings², E. Whitefield¹, M. Hanigan¹, and K. Knowlton¹; ¹Washington State University, Puyallup; ²Virginia Tech, Blacksburg.

2:30 PM 789 Evaluation of ruminally protected niacin on thermal regulation and productivity of high-producing dairy cows during summer heat stress.
  S. R. Wrinkle*, P. H. Robinson¹, and J. E. Garrett¹; ¹Department of Animal Science, University of California, Davis, ²Quali Tech Inc., Chaska, MN.

2:45 PM 790 Effects of feeding a rumen protected lysine (AjiPro-L) from calving to the fourth week of lactation on production of high-producing dairy cows.
  J. E. Nocek*, T. Takagi², and I. Shinzato¹; ¹Spruce Haven Farm and Research Center, Auburn, NY, ²Ajinomoto Co., Inc., Tokyo, Japan.

3:00 PM 792 Characterizing the effect of Amaferm on forage NDF digestibility.
  J. E. Nocek*¹ and H. Jensen²; ¹Spruce Haven Farm and Res. Ctr, Auburn, NY; ²Biozyme Inc., St Joseph, MO.

3:15 PM 793 Methionine availability to dairy cows when added to mechanically extracted soybean meal with soy gums.
  D. W. Brake*, E. C. Titgemeyer¹, B. J. Bradford¹, J. F. Smith¹, and C. A. Macgregor¹; ¹Kansas State University, Manhattan, KS, ²Grain States Soya Inc., West Point, NE.

3:30 PM 794 Effects of chromium propionate fed through the periparturient period and starch source fed postpartum on productive performance and dry matter intake of Holstein cows.
  R. J. Rockwell* and M. S. Allen, Michigan State University, East Lansing.

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Small Ruminant Symposium
Advancements in Genetic Selection of Small Ruminants for Performance and Parasite Resistance
Chair: Kenneth Andries, Kentucky State University
Sponsors: AAPA, AMPA 297

2:00 PM 795 Advancements in genetic selection of small ruminants for performance and parasite resistance: Introduction and purpose.
  K. Andries*, Kentucky State University, Frankfort.

2:15 PM 796 Genetic evaluation: Lessons learned in the beef industry.
  J. K. Bertrand*, University of Georgia, Athens.

2:55 PM 797 National Sheep Improvement Program’s current impact and future potential.
  D. F. Waldron*, Texas AgriLife Research, San Angelo.

3:35 PM 798 Advancements in genomics: Application and potential for small ruminant research.
  P. K. Riggs*, Texas A&M University, College Station.

4:15 PM 799 Sheep and goat genetic resources: Recent findings and potential for future development.

4:55 PM Roundtable Discussion

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Teaching/Undergraduate and Graduate Education Symposium
Adapting Our Teaching to Meet Current and Emerging Societal Needs
Chair: Wesley Greene, Ohio State University, Wooster 388

2:00 PM 800 Effecting change in teaching and learning in the agricultural sciences.
  R. Kirby Barrick*, University of Florida.
Perspectives on using values-based communications as a tool for preparing animal science students to address consumer trust issues challenging the animal industry.

J. L. Garrett*, JG Consulting Services LLC, Dowling, MI.

Course and activities based learning teams: A method of enhancing the first-year university experience.

M. D. Kenealy*, Iowa State University.

Innovative and effective practices for student development—What are the difference makers?

D. Mulvaney*, Auburn University, Auburn, AL.

Best practices in designing undergraduate research experiences in animal science curricula.

C. Rosenkrans*, University of Arkansas, Fayetteville.

Casting a Line—Creating a national Scholarship of Teaching and Learning (SoTL) for animal sciences: Adapting to the gaps through SoTL and networking.

M. A. Wattiaux*, University of Wisconsin-Madison, Madison.

Casting a Line—Multi-institutional collaborations to enhance animal science education.

D. L. Boggs*, Kansas State University, Manhattan.

Factors that are important in determining US milk prices.

D. S. Brown*, Food and Agricultural Policy Research Institute, University of Missouri, Columbia.

Issues facing US dairy exports: Regulatory coherence and trade barriers.


Producing for a global export market.

M. Piper*, Fonterra (USA) Inc., Rosemont, IL.
Thursday, July 14

OTHER EVENTS

ASAS Poster and Oral Presentation Workshop
288-289
8:00 AM - 5:00 PM

Write Winning Grants, conducted by Grant Writer’s Seminars and Workshops, LLC, sponsored by ASAS
386-387
8:00 AM - 3:00 PM

SYMPOSIA AND ORAL SESSIONS

Animal Health
Dairy II
Chair: Todd Bilby, Texas AgriLife Research and Extension
295

8:30 AM 810 I. Dairy calving management: Dystocia and timing for intervention.
G. M. Schuenemann*, I. Nieto, S. Bas, K. N. Galvao, and J. Workman, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.

8:45 AM 811 II. Dairy calving management: Effect of perineal hygiene scores on metritis.
G. M. Schuenemann*, I. Nieto, S. Bas, K. N. Galvao, and J. Workman, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.

9:00 AM 812 Dam heat load affects neonatal calves’ bacterial levels and innate immunity.
D. Pan*, C. N. Lee, M. H. Rostagno, and S. D. Eicher, Purdue University, W Lafayette, IN, 2USDA-ARS, W Lafayette, IN, 3University of Hawaii, Honolulu.

9:15 AM 813 Antisecretory factor counteracts calf diarrhea and increases daily weight gain.
B. E. O. Johansson, E. Johansson, and S. Lange, 1Bacteriological Laboratory, Sahlgrenska University Hospital, Gothenburg, Västra Götaland, Sweden, 2Institute of Biomedicine, Department of Infectious Diseases, Section of Clinical Bacteriology, University of Gothenburg, Gothenburg, Västra Götaland, Sweden.

9:30 AM 814 Innate immune function of Holstein calves after commingling.
L. E. Hulbert, C. J. Cobb, L. R. Schwertner, and M. A. Ballou, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Department of Animal Sciences, University of California-Davis, Davis.

9:45 AM 815 Risk factors and impact of postpartum anovulation in dairy cows.
J. Dubuc*, T. F. Duffield, K. E. Leslie, J. S. Walton, and S. J. LeBlanc, 1Faculté de médecine vétérinaire, Université de Montréal, St-Hyacinthe, Québec, Canada, 2Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 3Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.

10:00 AM 816 Inflammation and infection of the reproductive tract in dairy cows.
T. Osawa, R. C. Neves, and S. J. LeBlanc, 1University of Guelph, Guelph, ON, Canada, 2Iwate University, Morioka, Japan.

10:15 AM 817 Physiological and behavioral characteristics related to vitality of newborn dairy calves and the efficiency of absorption of immunoglobulins.
C. Murray, D. Viera, A. Nadalin, V. Bielmann, and K. Leslie, 1Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 2Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada.

10:30 AM 818 The effect of omega-3 supplementation on the immune response of Holstein calves.

10:45 AM 819 Impact of intrauterine dextrose therapy on conception of lactating dairy cows with clinical endometritis.
T. A. Brick, S. Bas, J. B. Daniels, C. Pinto, D. M. Rings, and G. M. Schuenemann, The Ohio State University, Columbus.

11:00 AM 820 Effect of propylene glycol in fresh cows diagnosed with subclinical ketosis on milk yield and resolution of ketosis.
J. A. A. McArt, D. V. Nydam, P. A. Ospina, and G. R. Oetzel, 1Cornell University, Department of Population Medicine and Diagnostic Science, Ithaca, NY, 2Cornell University, Department of Animal Science, Ithaca, NY, 3School of Veterinary Medicine, University of Wisconsin, Madison.
Association between serum metabolite concentrations in the transition period and milk production in dairy cows.
N. Chapinal*1,2, M. E. Carson1, S. L. Leblanc1, K. E. Leslie3, S. Godden4, M. Capel4, J. E. P. Santos4, M. W. Overton5, and T. F. Duffield1. 1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Animal Welfare Program, University of British Columbia, Vancouver, BC, Canada, 3Department of Veterinary Population Medicine, University of Minnesota, St. Paul, 4Perry Veterinary Clinic, Perry, NY, 5Department of Animal Science, University of Florida, Gainesville, 6Department of Population Health, University of Georgia, Athens.

Dairy Foods
Milk Protein & Enzymes
Chair: Rafael Jimenez-Flores, Cal Poly, San Luis Obispo
298-299

Whey protein nanoparticles prepared by desolvation: Encapsulation capacity and interfacial activity.
I. Gülseren* and M. Corredig, University of Guelph, Dept. of Food Science, Guelph, Ontario, Canada.

Comparative proteomic analysis of whey proteins between healthy and subclinical mastitic cows.
J. Bian, Q.-Z. Li*, and X.-J. Gao, Key Laboratory of Dairy Science of Ministry of Education, Northeast Agricultural University, P.R. China.

Controlling whey proteins spontaneous self assembly.
T. Croguennec*, D. Salvatore1, T. Nicolai1, V. Forge2, and S. Bouhallab1, 1UMR 1253, INRA- Agrocampus Ouest, Science et Technologie du Lait et de l'Oeuf, F-35000 Rennes, France, 2Laboratoire de Chimie et Biologie des Métaux, CEA-Grenoble, F-38057 Grenoble, France, 3UMR CNRS-Université du Maine, Polymères, Colloides, Interfaces, F-72085, Le Mans, France.

Study of the combined acidification and rennet gelation behaviour of casein micelles using single Streptococcus thermophilus strains, with high or very low exopolysaccharide production.
Z. Miao*, E. Kristo, and M. Corredig, University of Guelph, Guelph, Ontario, Canada.

In situ structural investigations of the milk fat globule membrane revealing heterogeneities and sphingomyelin-rich domains.
C. Lopez*, INRA-STLO, Rennes, France.

Fractionation of glycomacropeptide and beta lactoglobulin using positively charged ultrafiltration membranes in staged configurations.
S. Gemili* and M. R. Etzel, University of Wisconsin-Madison, Madison.

Antimicrobial role of serum amyloid A3 in goat milk.
A. Domènech*, J. G. Raynes3, A. Arís3, A. Bach1,3, and A. Serrano1, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2Immunology Unit, Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom, 3ICREA, Barcelona, Spain.

Horse Species Symposium
Disaster Preparedness—Insights to Aid the Equine and Livestock Industries
Chair: Julia McCann, Virginia Tech
297

Introduction

Disaster readiness: Real life in Louisiana.
R. S. McConnico, Department of Veterinary Clinical Sciences, School of Veterinary Medicine, Louisiana State University.

Reducing the impact of a disaster through planning.
R. M. Dwyer, Maxwell H. Gluck Equine Research Center, University of Kentucky.

Agricultural extension’s role in large animal emergency management assessment and recovery plans.
D. H. Sigler, Texas A&M University, College Station.

Discussion of case scenarios and question/answer session
Lactation Biology 2
Chair: Darryl Hadsell, Baylor College of Medicine

8:30 AM 829 Effects of short- and long-chain fatty acids on expression of lipogenic genes in bovine mammary epithelial cells.
A. A. A. Jacobs*, J. S. Liesman, M. J. VandeHaar, J. Dijkstra, A. M. van Vuuren, and J. van Baal, Wageningen University, Wageningen, the Netherlands, Michigan State University, East Lansing.

8:45 AM 830 Effect of timing of feed intake on circadian pattern of milk synthesis.

9:00 AM 831 Long term effect of feeding rumen protected fish oil or microalgae on mammary gene expression in Holstein cows managed under pasture or confinement systems.
P. Vahmani*, K. Glover, L. A. MacLaren, J. Green-Johnson, and A. Fredeen, Dalhousie University, Halifax, NS, Canada, University of Ontario Institute of Technology, Oshawa, ON, Canada.

9:15 AM 832 Reduced milking frequency increases the concentration of host-defense proteins in milk.

9:30 AM 833 Effect of milking frequency early post-partum on energy metabolism in grazing dairy cows.

9:45 AM 834 Regulation of STAT and IGF signaling during reversible and irreversible involution of the bovine mammary gland.

10:00 AM 836 Effect of heat stress during the dry period on insulin sensitivity of multiparous dairy cows.

10:15 AM 837 Dry period seasonal effects on the subsequent lactation.

Meat Science and Muscle Biology Symposium
Extracellular Matrix in Skeletal Muscle Development and Meat Quality
Chair: Min Du, University of Wyoming

8:30 AM 838 Stem cell niche and postnatal muscle growth.
S. Kuang*, Purdue University, West Lafayette, IN.

9:05 AM 839 Extracellular matrix regulation of skeletal muscle formation and growth.
S. Velleman*, The Ohio State University/OARDC, Wooster.

9:40 AM 840 The influence of extracellular matrix on intramuscular and extramuscular adipogenesis.
G. J. Hausman*, USDA ARS, Athens, GA.

10:15 AM 841 Connective tissue turnover and meat quality.
P. P. Purslow*, Department of Food Science, University of Guelph, Guelph, ON, Canada.

Nonruminant Nutrition
Energy and Dietary Fat
Chair: Mariela Lachmann, Land O’Lakes Purina Feed LLC

8:30 AM 842 Determining the energy digestibility of mold damaged corn selected for low mycotoxin content in finishing pigs.

8:45 AM 843 Effects of dietary energy density on performance and lean deposition of growing-finishing pigs raised in a commercial environment.
L. C. Chu*, C. J. Cai, G. J. Zhang, S. Y. Qiao, and D. F. Li, China Agricultural University, Beijing, China.
Effect of feeding soy and sunflower based reconstituted fat or monoestearate as fat sources in piglet diets.

Impact of fat source on nutrient digestibility and performance in nursery pigs.
S. M. Mendoza* and E. van Heugten, North Carolina State University, Raleigh.

Effect of altering the dietary omega-6 to omega-3 fatty acid profile of sow diets on the immune responses of their offspring when challenged with E. coli lipopolysaccharide.
L. Eastwood*, A. D. Beaulieu†, and P. Letterme‡, †Prairie Swine Centre Inc, Saskatoon, SK, Canada, ‡Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, ‡Cargill - R & D Centre Europe, Havenstraat, Vilvoorde, Belgium.

Impact of dietary fat on milk composition, milk output and apparent digestibility is fat source dependent in lactating sows.
D. S. Rosero*, E. van Heugten†, J. Odle‡, V. Fellner‡, and R. D. Boyd‡, †Department of Animal Sciences, North Carolina State University, Raleigh, ‡Hanor Company Inc., Franklin, KY.

Production, Management and the Environment
Environmental Quality
Chair: Julie Wittman, Elanco Animal Health
286-287

Ammonia emissions from a commercial feedyard measured using passive samplers and a box model.
N. A. Cole*, R. W. Todd†, D. B. Parker‡, M. Rhoades‡, and A. Mason†, 1USDA-ARS, Conservation & Production Research Lab, Bushland, TX, 2USDA-ARS-MARC, Clay Center, NE, 3West Texas A&M University, Canyon.

Effects of feeding birdsfoot-trefoil on greenhouse gases emissions from fresh and land incorporated dairy manure.
Q. Wang*, R. Franco, Y. Zhao, Y. Pan, and F. Mitloehner, University of California, Davis, Davis.

Prediction of individual methane emission by dairy cattle from milk mid-infrared spectra.
A. Vanlierde*, C. Delfosse†, F. Dehareng‡, E. Froidmont‡, H. Soyeurt1, 2, 3, 1University of Liège Gembloux Agro-Bio Tech, Animal Science Unit, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

Effects of biotechnology on greenhouse gases, volatile organic compounds, and ammonia from feedlot cattle.
K. R. Stackhouse*, M. S. Calvo, S. E. Place, T. L. Armitage, Y. Pan, Y. Zhao, and F. M. Mitloehner, University of California, Davis.

Life cycle assessment of greenhouse gas emissions from beef production systems in California.
K. R. Stackhouse*, C. A. Rotz‡, and F. M. Mitloehner†, †University of California, Davis, 1USDA/Agriculture Research Service, Pasture Systems and Watershed Management Research Unit, University Park, PA.

Effects of calf hutch flooring on air quality and exposure.
M. S. Calvo*, M. van der Voort†, J. A. McGarvey‡, J. P. Reynolds‡, T. L. Armitage†, E. A. M. Bokkers‡, and F. M. Mitloehner, †Department of Animal Science, University of California, Davis, 2Department of Animal Sciences, Wageningen University, Wageningen, the Netherlands, 1USDA Agriculture Research Service, Plant Mycotoxin Reasearch Unit, Albany, CA, 3Veterinary Medicine Teaching & Research Center, University of California, Davis, Tulare.

Feeding saponins to reduce air emissions from steers.
W. Li* and W. J. Powers, Department of Animal Science, Michigan State University, East Lansing.

Supplementary concentrate type affects nitrogen balance in early lactation dairy cows offered grazed pasture.
S. J. Whelan*, K. M. Pierce, J. J. Callan, B. Flynn, and F. J. Mulligan, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

Development of a user-friendly online system to quantitatively measure metabolic gas fluxes from ruminants.
P. Zimmerman*, S. Zimmerman†, S. Utsumi‡, and D. Beede‡, †C-Lock Inc, Rapid City, SD, 2Michigan State University, East Lansing.

Effects of oxygenated drinking water on gaseous emissions, rumen microorganisms and milk production in dairy cattle.
C. J. Neumeier*, J. A. McGarvey‡, Y. Pan†, Y. Zhao‡, and F. M. Mitloehner, †Department of Animal Science, University of California-Davis, Davis, 2United States Department of Agriculture, Agricultural Research Service, Albany, CA.
Ruminant Nutrition
Beef: Supplements
Chair: Holly Boland, Mississippi State University

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8:30 AM 858 Effects of residual feed intake classification and breed type on carcass characteristics, tenderness and value in feedlot heifers.
J. W. Behrens*, R. K. Miller1, J. C. Bailey1, J. T. Walter1, A. N. Hafla2, E. D. Mendes1, D. S. Hale1, T. Machado2, L. O. Tedeschi1, and G. E. Carstens1, 1Texas A&M University, College Station, 2Texas A&M University at Kingsville, Kingsville.

8:45 AM 859 Effects of residual feed intake classification and breed type on feed efficiency and feeding behavior traits in heifers fed a high-grain diet.

9:00 AM 860 Analysis of the ruminant microbial ecosystem in cattle divergent for residual feed intake using next generation sequencing technology.
C. A. Carberry*, D. A. Kenny1, C. J. Creevey1, and S. M. Waters1, 1Animal and Bioscience Department, Animal and Grassland Research and Innovation Centre, Teagasc, Grange, Dunsany, Co. Meath, Ireland, 2School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

9:15 AM 861 Association of myostatin with weight and carcass traits in crossbred heifers adjusted to different endpoints.

9:30 AM 862 Effects of varying forage levels in diets containing whole flint corn and benefits of steam flaking the corn on finishing Nellore bulls performance, carcass characteristics, and liver abscesses.
R. S. Marques1, J. R. R. Dórea1, A. M. Pedrosa1, A. W. Bispo1, C. G. Martins1, W. F. Angolini1, and F. A. P. Santos1*, 1University of Sao Paulo, Piracicaba, SP, Brazil, 2Embrapa Cattle Southeast, Sao Carlos SP, Brazil.

9:45 AM 863 Evaluation of two complete-feed receiving diets.
C. J. Schneider*, B. L. Nuttelman1, K. M. Rolfe1, W. A. Griffin1, T. J. Klopfenstein1, R. A. Stock1, and G. E. Erickson1, 1University of Nebraska, Lincoln, 2Cargill Inc, Blair, NE.

10:00 AM 864 Rumen degradable protein supply effects microbial efficiency in continuous culture and growth in crossbred Angus steers.
M. A. Brooks*, R. M. Harvey2, N. F. Johnson2, and M. S. Kerley2, 1North Carolina State University, Raleigh, 2University of Missouri - Columbia, Columbia.

10:15 AM 865 Beef cow performance when fed cotton co-product and distillers grain blocks as a hay replacement.
G. M. Hill*, A. N. Franklin, G. W. Stone, and B. G. Mullinix, University of Georgia, Athens.

10:30 AM 866 Effects of energy supplementation frequency and forage quality on performance of replacement beef heifers.
P. Moriel1*, R. F. Cooke1, F. N. T. Cooke1, E. Alves1, L. Custodio1, D. W. Bohnert1, J. M. B. Vendramini1, and J. D. Arthington2, 1Oregon State University—Eastern Oregon Agricultural Research Center, Burns, 2University of Florida—Range Cattle Research and Education Center, Ona.

10:45 AM 867 Impact of rumen digesta inoculation on feeding value of urea-molasses treated wheat straw.

11:00 AM 868 Effect of sorghum grain supplementation on glucose metabolism 1: Bovine.
M. Aguerre*, M. Carriquiry1, A. L. Astessiano2, C. Cajarville3, and J. L. Repetto1, 1Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay, 2Departamento de Producción Animal y Pasturas, Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 3Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay.

11:15 AM 869 Response to increased sorghum grain supplementation levels: comparison between cattle and sheep.
M. Aguerre*, C. Cajarville, and J. L. Repetto1, 1Departamento de Bovinos, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay, 2Departamento de Nutrición Animal, Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay.
### Ruminant Nutrition Symposium

#### Mycotoxins – Prevalence, Impact, and Control Strategies in Ruminant Diets

**Chair: Allan Chestnut, Provimi North America**

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<td>Impact of mycotoxins on the immune system.</td>
<td>T. K. Smith*, University of Guelph, Guelph, ON, Canada.</td>
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9:50 AM  Break

10:00 AM  885  Prevalence of mycotoxins in feedstuffs.  
D. Taysom*, Dairyland Laboratories Inc., Arcadia, WI.

10:30 AM  886  Evaluation of feed additives for reducing mycotoxins.  
I. P. Oswald*, INRA, ToxAlim Research Center, 31027 Toulouse Cedex 03, France.

Teaching/Undergraduate and Graduate Education  
Chair: Wesley Greene, Ohio State University, Wooster

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8:30 AM  887  Perceptions of livestock practices by students entering introductory animal science courses.  
G. A. Holub*1, C. T. Boak2, and S. W. Ramsey3, 1Texas A&M University, College Station, 2Texas AgriLife Extension, College Station.

8:45 AM  888  Demographics and eating habits of students entering introductory animal science courses.  
G. A. Holub*1, C. T. Boak2, and S. W. Ramsey3, 1Texas A&M University, College Station, 2Texas AgriLife Extension, College Station.

9:00 AM  889  Incorporating an issues survey assignment into an introductory animal science course.  
J. A. Sterle*, Texas A&M University, College Station.

9:15 AM  890  Improving learning through integration of an upper division class with an introductory class in companion animals.  
J. P. McNamara*, Washington State University, Pullman.

9:30 AM  891  Internships and international collaboration in beef cattle reproductive management.  
K. G. Pohler*1, D. A. Mallory1, D. J. Patterson1, M. F. Smith1, J. L. M. Vasconcelos2, R. F. G. Peres3, and E. R. Vilela4, 1University of Missouri, Columbia, 2FMVZ - UNESP, Botucatu, SP, Brazil, 3Agropecuária Fazenda Brasil, Barra do Garças, MT, Brazil, 4Lageado Agricultural Consulting LTD, Mineiros, GO, Brazil.

9:45 AM  892  Predictors of performance in an Animal Nutrition classroom.  
M. A. Soberon*, D. J. R. Cherney, and R. C. Kiely, Cornell University, Ithaca, NY.

10:00 AM  893  Attitudes and knowledge of high school students about the department of animal industry of the University of Puerto Rico at Mayagüez.  
G. Ortiz-Colón*, J. M. Huerta-Jiménez, E. Jiménez-Cabán, and M. Pagán-Morales, University of Puerto Rico at Mayagüez, Mayagüez, PR.

10:15 AM  894  Mentoring underrepresented students through agricultural related research projects.  
J. S. Pendergraft*, R. M. Legere1, and A. Rodríguez2, 1Sul Ross State University, Alpine, TX, 2University of Puerto Rico, Mayagüez, PR.

10:30 AM  895  Graduate student course curriculum in animal science departments.  
R. F. Leuer*4, and H. M. White4, 1University of Minnesota, St. Paul, 2Indiana University, Indianapolis.

10:45 AM  896  Increasing awareness of the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) website.  
J. Bertrand*1 and M. Rieger2, 1University of Georgia, Athens, 2University of Florida, Gainesville.

OTHER EVENTS

Mixed Models  
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8:30 AM - 11:30 AM

The Mixed Models workshop provides a comprehensive exposition of proper statistical data analysis and power determinations of commonly used experimental designs in the animal sciences; our approach is example-driven and primarily based on the various mixed model analysis procedures available in SAS software.
**Author Index**

Numbers following names refer to abstract numbers; a number alone indicates an oral presentation, an M prior to the number indicates a Monday poster, a T indicates a Tuesday poster, and a W indicates a Wednesday poster.

The author index is created directly and automatically from the submitted abstracts. If an author’s name is typed differently on multiple abstracts, the entries in this index will reflect those discrepancies. Efforts have been made to make this index consistent; however, error from author entry contributes to inaccuracies.

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July 15–19

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Indianapolis, Indiana
July 8–12

2014
Kansas City, Missouri
July 20–24