2009
Joint Annual Meeting
Montreal, Québec, Canada

Conference Information and Scientific Program

July 12-16

University research shows PRO-LAK® dairy by-pass protein improves feed efficiency by an average of 8.05%.

“A move from 1.5 to 1.6 (0.1 change in feed efficiency) equals a savings of .20¢ per cow per day.”

Dr. Mike Hutjens,
University of Illinois

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DAIRY BY-PASS PROTEIN

Improves Feed Efficiency  ■  Meets “ideal” AA Profile
Proven Consistency & Results  ■  “Non-Ruminant Blend”
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Mike Maloney, Western Regional Sales    mmaloney@bakerbro.com    707-763-2853
Dr. Jesus Torrelba, Technical Sales    jtorrelba@bakerbro.com    (52)  84-44-27-1516
Welcome to Montréal and the 2009 Joint Annual Meeting! The joint annual meeting holds many opportunities for exchange of great science, professional development, networking, renewal of friendships, and enjoying the culture and special events in Montréal. Activities start with the Triennial Reproduction Symposium, the late-breaking research session, student events, and the opening session and reception on Sunday. This joint meeting includes ADSA®, CSAS, and ASAS, and covers numerous species, disciplines, and cultural activities.

The opening session will feature an introduction to the culture and agriculture of Montréal and a presentation by Cirque du Soleil with acrobats, a stilt walker, and other presentations. Information in this program book highlights festivals and special events so you can celebrate the culture of Montréal.

The program committees have once again planned outstanding symposia and presentations. Many thanks to chairs and members of the program committees for their diligent work to review abstracts and plan sessions and the overall program. We especially thank the overall program committee comprising Leo Timms (chair), Dorian Garrick (vice-chair), Greg Lardy, John Vicini, and Karen Beauchemin for their dedicated contributions to 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. More than 34 cutting-edge symposia have been planned, and 1,880 abstracts have been submitted for oral or poster presentation.

Members of our societies will be honored for excellence in teaching, research, outreach, and service. The ASAS awards program will be on Monday evening at 7:00 pm, ADSA awards will be presented on Tuesday at 7:00 pm, and the CSAS awards banquet will be on Wednesday at 6:00 pm. The ice cream social is open to all attendees, so please plan to join us after the Tuesday ADSA awards program to congratulate and visit with all ADSA, CSAS, and ASAS award recipients.

The joint annual meeting, a major event that requires continuous yearlong planning, could not happen without the dedicated work of many people. In addition to thanking the program committees, we thank our executive and associate executive directors—Peter Studney of ADSA and Meghan Wulster-Radcliffe and Paula Schultz of ASAS—as well as the excellent FASS staff, for making this event happen.

We hope you enjoy this meeting and the many opportunities for scientific and social interaction it affords. Attend the closing reception on Wednesday to visit with new friends and attendees from other countries. Members of our societies make this event happen, and if you are not a member, consider joining one or more of the societies.
Important Message

In the event that protestors interrupt the meetings, please ignore them. Their goal is to attract attention and any attention you give them will only help their cause. Convention staff have a plan in place to handle these situations, and they depend on 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

New for 2009

Two new workshops for students have been added to the meeting: 1) Writers' Workshop (Thursday, 8:00 am–5:00 pm) and 2) JAS-JDS New Reviewers' Workshop (Monday, 2:00 pm–5:00 pm).

Location

The Palais des congrès de Montréal (Montréal Convention Center) is ideally located at the center of the international district, or Quartier International de Montréal, within walking distance of the downtown business core, Chinatown, and Old Montréal, where the atmosphere is always festive with an abundance of shops, museums, and restaurants. The extensive Montréal underground walkway system links the Palais des congrès de Montréal to more than 4,000 premium hotel rooms, including the Hyatt (ADSA® headquarters), the Delta Center-Ville (ASAS headquarters), the Hotel InterContinental (CSAS headquarters), and the Fairmont Queen Elizabeth. Moreover, the Palais also features a commercial mall (at level 100) where visitors can benefit from the convenience of a host of products and services (traditional and fast-food restaurants, car rental, travel agency, photo shop, art gallery, beauty salon, and more).

Schedule of Events

The 2009 ADSA-CSAS-ASAS Joint Annual Meeting will be held July 12–16 (Sunday through Thursday). The opening session will be held on Sunday evening, July 12; scientific sessions will kick off Monday morning, July 13, and run through noon on Thursday, July 16. Please note that the schedule for this meeting is Sunday to Thursday.

The Triennial Reproduction Symposium: Challenges and Opportunities Facing Livestock Reproduction in the 21st Century will be held on Sunday, July 12. Also, we will welcome back the Mixed Models Workshop this year, to be held all day Wednesday, July 15, and finishing up the morning of Thursday, July 16. The 2009 opening session will feature a live performance including acrobats and stilt walkers from Cirque du Soleil and other exciting acts that are sure to thrill! The complete schedule of events can be found on page 43 of this book.

Program Format for 2009

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

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

Registration Hours

Registration will be located on the 200 level of the Montréal Convention Center in the Viger Hall area, near the information booth. Registration hours for the 2009 ADSA-CSAS-ASAS Joint Meeting, including special symposia and other events, will be as follows:

Saturday, July 11 (preregistered only) ....................... 3:00 pm–5:00 pm
Sunday, July 12 .................................................... 7:00 am–7:00 pm
Monday, July 13 ................................................... 6:30 am–5:15 pm
Tuesday, July 14 ................................................... 7:00 am–5:15 pm
Wednesday, July 15 .............................................. 7:00 am–5:15 pm
Thursday, July 16 .................................................. 8:00 am–1:00 pm
**Important Phone Numbers**

- Registration Desk: (514) 789-3400
- Delta Centre-Ville: (514) 879-1370
- Hyatt Regency Montréal: (514) 982-1234
- Holiday Inn Select Montréal Centre-Ville: (514) 878-9888
- Hotel InterContinental Montréal: (514) 987-9900
- Fairmont–The Queen Elizabeth: (514) 861-3511
- Palais des congrès de Montréal (Montréal Convention Center): (514) 871-8122
- Montréal Convention and Visitors Bureau: (514) 873-2015

**Media Check-In**

Please check in at the Registration Desk near Viger Hall on the 200 level of the Convention Center.

**Speaker Ready Room**

The Speaker Ready Room is located in Room 515c of the Convention Center. This room will be available for speakers from 7:00 am to 5:00 pm on each day of the meeting.

**Hospitality Lounge**

The hospitality lounge will be located in Room 521a of the Convention Center. This lounge will offer attendees an area to relax, network, and catch up with old friends. The hospitality lounge is also a great meet-up place when departing the convention center as a group.

**Presentation Information**

**Oral and Invited Speakers**

Oral sessions will begin at 9:30 am on Monday and Tuesday, 10:30 am on Wednesday, and 8:30 am on Thursday. Please note that all session rooms will be equipped with a computer and LCD projector. All oral presentations and invited speaker presentations will be preloaded before the start of the session according to the schedule below.

**Onsite Upload Information**

To accommodate your needs, we will provide onsite presentation uploading in room 515ab. **No presentations will be loaded while the session is in progress or between presentations.** Deadlines for onsite uploads are as follows:

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<th>All Sunday presentations</th>
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<td>All Thursday presentations</td>
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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, Room 220 cde.

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

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

Locating the Correct Poster Board

Each poster board number corresponds to the abstract number as noted in the program. Monday posters will have an “M,” Tuesday posters a “T,” and Wednesday posters a “W” preceding the board number.

Camera, Video Camera, and Cell Phone Policy

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

ARPAS Continuing Education Units

The 2009 ADSA-CSAS-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.

Job Resource Center


Job Resource Center and E-Career Tool Now Available Online!

Whether you are an employer looking to fill a position or a potential employee looking for a job, the E-Career Tool has been developed to facilitate this communication. The E-Career Tool is free to use and very user friendly. Take advantage of the “search employee” function to identify potential candidates and see where/when they will be presenting their work at the 2009 ADSA-CSAS-ASAS Joint Annual Meeting. For the job seeker, upload your CV, cover letter, or anything else you feel will help you get the position you are seeking!

ASAS is excited to bring this new feature to Joint Annual Meeting attendees and hopes you take full advantage of this exciting tool! Visit http://adsa.asas.org/meetings/2009/ecareer.asp for more information. See you in Montréal!
Cyber Café

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

Currency Exchange

Currency exchange centers are located in the Montréal-Trudeau International Airport on the first and ground floors.

Headquarters Hotels

*Delta Centre-Ville – ASAS HQ*
777 Rue University
Montréal, QC H3C 3Z7
Canada
(514) 879-1370

*Hyatt Regency Montréal – ADSA HQ*
1255 Rue de Jeanne-Mance
Montréal, QC H5B 1E5
Canada
(514) 982-1234

*Holiday Inn Select Montréal Centre-Ville – Student HQ*
99 Avenue Viger Ouest
Montréal, QC H2Z 1E9
Canada
(514) 878-9888

*Hotel InterContinental Montréal – CSAS HQ*
360 Saint Antoine Ouest
Montréal, QC H2Y 3X4
Canada
(514) 987-9900

*Fairmont – The Queen Elizabeth*
900 Rene Levesque Blvd. West
Montréal, PQ H3B 4A5
Canada
(514) 861-3511
Directions to the Palais des congrès de Montréal (Convention Center) via the underground pedestrian network

**Hyatt Regency to the Palais des congrès**

- Take the elevators located in the bar area and go to Niveau 2; when exiting the elevator, go slightly right.
- At Muffin Plus, bear right and look for the Hallmark store where you will take the escalator down to Niveau 1 Allée des Congrès.
- Go straight, following the signs for Complexe Guy Favreau; at the end of the corridor, bear right and take the escalator up.
- Turn left and cross the central court, following the corridor below a mezzanine with large windows.
- Take the escalator down on your left and continue through the corridor.
*Option: At this point you may go outside, cross the courtyard, and enter the Palais des congrès through Viger Hall.*
- Take the stairs up and then go right, entering the Palais des congrès, Viger Hall.

**Delta Centre-Ville to the Palais des congrès**

- From the hotel lobby, go through the Chez Antoine restaurant into the IATA building (Place Victoria).
- Take the escalators down two floors, make a 180-degree turn to your left, and walk through the food court.
- Follow the signs in the food court to the Palais des congrès, continuing straight into the Centre de Commerce Mondial.
- Take the escalator up, walk through the Centre de Commerce Mondial to the far end, and go down the stairs.
- Follow the corridor to Palais des congrès; at the end of the corridor turn right, when you see a yellow wall, continue to the escalators and go up, entering the Palais des congrès.
- Turn right and follow this corridor looking for signs for Viger Hall; the entrance will be on your left. Go to Niveau 2.

**Fairmont Queen Elizabeth to the Palais des congrès**

- Take the lobby elevators to S2–Gare Centrale and turn right at Tim Horton's.
- Walk through the train station (Gare Centrale) and follow the Hotel – Place Bonaventure signs (next to the Bentley store).
- At the end of the corridor, go through the doors and down the escalators on your right; then go left and through two sets of glass doors.
- Go straight until the end of the corridor and take the escalator up.
- Look for the Place Bonaventure info desk, which will be on your right, and follow the signs for Metro Square Victoria.
- At the end of the corridor, go down the escalators on your right, then bear right, following the signs for the Metro Square Victoria.
- Take the first set of stairs down and follow signs for Metro Square Victoria.
- Turn right and take the stairs down, then turn right at the bottom and take the next set of stairs. Continue down the corridor.
- Take the escalator (or stairs) and turn right, following signs for the Palais des congrès.
- Take the next escalator (or stairs) up and follow that corridor. Enter the glass atrium through the doors on your right.
- Turn left, walk to the other end, and take the stairs down.
- At the bottom of the stairs, take the next set of stairs down, still following signs for the Palais des congrès.
- Make a 180-degree turn, go through the doors, and continue through the corridor.
- At the end of the corridor, take a short left followed by a sharp right into a brightly lit corridor, still following the signs for the Palais des congrès.
- As you continue through the corridor, when the wall on your right is bright yellow, continue to the escalators (or stairs) and go up on your left, entering the Palais des congrès.
- Turn right, follow this corridor, and look for signs for Viger Hall; the entrance will be on your left. Go to Niveau 2.
Transportation in Montréal

Transportation from the Montréal International Airport to all downtown locations is available by taxicab for a flat fee (as of January 2009) of $38 CAD (Canadian dollars) each way or by limousine for a flat fee of $49.50 CAD each way; both fees are regardless of the number of passengers, so share cabs if possible. Cab sharing will be faster and likely less expensive than the shuttle service. Private rentals can also be booked by calling (514) 394-7377. If you prefer to drive yourself, rental cars are also available at the airport.

Welcome to Montréal

Montréal Activities and Sightseeing Options: Get ready for Montréal!

You’re about to experience a city whose passion, joie de vivre, and rich cultural heritage are legendary. Montréal-ers love to greet visitors and show off their city’s charms, so expect a very warm welcome. It’s like a taste of Europe right in North America. Enjoy . . . à la Montréal. The time and distance estimates for locations noted are calculated for travel from the convention center. Please see street and METRO maps on pages 33 and 34.

Festivals and Special Events

L’International des Feux Loto-Québec presented by TELUS
June 13 to August 15, 2009
La Ronde (member of the Six Flags family)
www.internationaldesfeuxloto-quebec.com
METRO: Île Sainte-Hélène Parc Jean-Drapeau–Yellow Line
3.9 miles, 10 minutes by car

Ten fireworks shows on the program, each lasting 30 minutes.

Salsafolie Sundays 6th Edition
June to September 2009
Salsafolie
King-Edward Pier
Quays of the Old Port of Montréal
www.salsafolie.com
METRO: Champs Mars Station–Orange line
0.7 mile, 12 minutes walking

Dance, performances, and entertainment that moves to the beat of hot salsa rhythms and Latin music.

Montréal Alouettes
June 23 to November 1, 2009
Montréal Alouettes
Percival Molson Stadium
McGill University
475 des Pins Avenue West
www.montrealalouettes.com
METRO: McGill Station–Green line
1.2 miles, 25 minutes walking

The Montréal Alouettes are members of the CFL and the 2002 Grey Cup Champions.
Festival International de Jazz de Montréal 30th Edition
July 1 to 12, 2009
Place des Arts
175 Sainte-Catherine Street West
www.montrealjazzfest.com
METRO: Place des Arts–Green line
0.4 mile, 7 minutes walking

Over 500 shows, including 370 free outdoor concerts, are presented in the heart of downtown Montréal.

Just For Laughs Festival Presented by Videotron
July 3 to 26, 2009
Just For Laughs Festival
Quartier latin
www.hahaha.com
METRO: Berri/Uqam–Green/Orange/Yellow lines
0.8 mile, 15 minutes walking

Montréal International Tango Festival
July 10 to 19, 2009
Several Montréal locations
www.festivaldetangodemontreal.qc.ca

Nine days of concerts, shows, dance evenings, open air activities, and master classes offered to all participants.

Sainte-Catherine Street Celebrates Sidewalk Sale
July 18 and 19, 2009
Sainte-Catherine Street West
Between Atwater Avenue and Saint-Urbain Street
www.destinationcentreville.com
METRO: Atwater to Place des Arts Stations–Green line
0.3 mile, 8 minutes walking

One of the largest sidewalk sales in Canada, in the heart of the metropolis.

Festival International Nuits d’Afrique de Montréal 23rd Edition
July 16 to 26, 2009
International Nuits d’Afrique Festival of Montréal
Place Émilie-Gamelin
Corner of Berri and Sainte-Catherine Streets
www.festivalnuitsdafrique.com
METRO: Berri/Uqam–Green/Orange/Yellow lines
0.9 mile, 4 minutes walking

The best music from Africa, the Caribbean, and Latin America. Five hundred artists from over 30 countries and activities for the whole family.

Fantasia International Film Festival
July 16 to August 3, 2009
Concordia University
1455 de Maisonneuve Blvd. West
www.fantasiafest.com
METRO: Guy Concordia–Green line
1.4 miles, 28 minutes walking or 5 minutes by car

Although its focus is on fantasy, action, and horror, Fantasia’s line-up also includes other original and eclectic works.
Festival International du Merengue et de la Musique Latine de Montréal
July 17 to 19, 2009
Île Notre-Dame
www.festivalmerenguedemontreal.com
METRO: Parc Jean-Drapeau—Yellow line
6.1 miles, 16 minutes by car

Performances by local and international groups, featuring salsa, merengue, bachata, reggae, compass, and samba.

Ongoing Events and Places Not to Miss

And Then There Was Light
Notre-Dame Basilica
110 Notre-Dame Street West
Telephone: (514) 842-2925
www.therewaslight.ca
METRO: Place-d’Armes—Orange line
0.6 mile, 12 minutes walking

Celebrate the founding of Montréal and the Notre-Dame Basilica with a spectacular sound and light show. State-of-the-art multimedia techniques highlight the Basilica’s exceptional works of art and bring to life its cultural, architectural, and spiritual heritage.

Montréal Biodôme
4777 Pierre-De Coubertin Avenue
Telephone: (514) 868-3000
www.museumsnature.ca
METRO: Viau—Green line
5.3 miles, 13 minutes by car

Since it first opened in 1992, some 14 million visitors have travelled through this “house of life,” a unique concept in the world. Here, plants and animals by the thousands, cliffs and waterways, and even the climate itself recreate with stunning realism the four finest ecosystems of the Americas.

Montréal Botanical Garden
4101 Sherbrooke Street East
Telephone: (514) 872-1400
www.museumsnature.ca
METRO: Pie-IX—Green line
4 miles, 10 minutes by car

With an outstanding collection that boasts more than 22,000 species and varieties of plants, the Montréal Botanical Garden is considered one of the world’s best gardens. Over 180 acres, it features 10 exhibition greenhouses and over 30 outdoor gardens. The Chinese and Japanese Gardens offer exotic landscapes, whereas the Tree House displays Québec’s abundant forest wealth. In the First Nations Garden, you can discover the relationship that 10 Amerindian nations and the Inui nation of Québec have always maintained with the world of plants.

Montréal Science Centre
King-Edward Pier
Quays of the Old Port of Montréal
Telephone: (514) 496-4629
www.MontrealScienceCentre.com
METRO: Place d’Armes—Orange line
0.7 mile, 12 minutes walking

The Montréal Science Centre invites you to discover its new exploration halls, cultural and educational activities with a scientific and technological flavor, multimedia challenges, and unusual games, along with special interactive areas, an interactive movie game, and an IMAX TELUS theatre.
The Montréal Museum of Fine Arts
1379-1380 Sherbrooke Street West
Telephone: (514) 285-2000
http://www.mmfa.qc.ca
METRO: Guy Concordia–Green line
1.4 miles, 29 minutes walking

The attractive and encyclopedic permanent collection of the Montréal Museum of Fine Arts brings together works from all continents and all periods. From its new rooms devoted to Napoleon and the First Empire to glass sculptures, arts of Africa and beautiful pre-Colombian art objects, the Museum’s collection illustrates various aspects of artistic creativity.

Musée d’art contemporain de Montréal
185 Sainte-Catherine West
Telephone: (514) 847-6226
www.macm.org
METRO: Place des Arts–Green line
0.3 mile, 7 minutes walking

Canada’s premier museum devoted exclusively to contemporary art, the Musée d’art contemporain de Montréal is a superb place to discover the wealth of Québec creativity and leading international trends. Discover art created by contemporary artists using painting, drawing, engraving, sculpture, photography, installation, film, and video.

McCord Museum
690 Sherbrooke Street West
Telephone: (514) 398-7100
www.mccord-museum.qc.ca
METRO: McGill–Green line
1.4 miles, 29 minutes walking

The McCord Museum offers meeting planners four special rooms, all with that little something extra. Among them is the sumptuous grand arched hallway, designed by renowned architect Percy E. Nobbs—a perfect setting for refined get-togethers, meetings, and cocktail gatherings. The theatre is equipped with the latest technologies—for optimum multimedia and audio-visual presentations.

Château Ramezay Museum
280 Notre-Dame Street East
Telephone: (514) 861-3708
www.chateauramezay.qc.ca
METRO: Champ-de-Mars–Orange line
0.6 mile, 11 minutes walking

Scene of bustling social activity since the 18th century, the warm ambiance of these historic surroundings makes it an ideal venue for your corporate events.

Marché Bonsecours
350 Saint-Paul Street East
Telephone: (514) 872-7730
www.marchebonsecours.qc.ca
METRO: Place d’Armes–Orange line
0.7 mile, 13 minutes walking

The Marché Bonsecours was inaugurated in 1847. A symbol of Montréal’s heyday, this imposing building was the city’s main agricultural marketplace for over a century. It also housed a concert hall and even served as a city hall. Its symmetrical composition and Greek Revival portico (the cast-iron columns were brought from England), tin-plated dome, and simple and varied details make it a perfect illustration of the neoclassical style in favor at the time. Recent renovations have turned it once again into a bustling marketplace that also features sidewalk cafés, shops, and exhibitions.
Shopping Centers

Complexe Desjardins
150 Sainte-Catherine Street West
Telephone: (514) 845-4636
www.complexedesjardins.com
METRO: Place-des-Arts–Green line
0.4 mile, 8 minutes walking

One hundred ten stores, services, and restaurants, as well as a grocery store, surround an immense public square where many events are held year-round. Located in the heart of downtown, cultural events, and the underground city, Complexe Desjardins also gives direct access to the Hyatt Regency Montréal hotel.

Schedule: Monday to Wednesday, 9:30 am–6:00 pm; Thursday and Friday, 9:30 am–9:00 pm; Saturday, 9:30 am–5:00 pm; Sunday, 12:00 pm–5:00 pm.

The Montréal Eaton Centre
705 Sainte-Catherine Street West
Telephone: (514) 288-3708
www.montrealeatoncentre.com
METRO: McGill–Green line
0.8 mile, 15 minutes walking

The Montréal Eaton Centre is home to over 175 stores, restaurants, and services, as well as a convenient indoor parking facility. Located in the heart of downtown Montréal on the corner of Sainte-Catherine Street and McGill College Avenue, this shopping mall offers many packages to tourists. Information on the packages is available at www.shopping3.ca.

Schedule: Monday to Friday, 10:00 am–9:00 pm; Saturday, 10:00 am–5:00 pm; Sunday, 11:00 am–5:00 pm.

Complexe Les Ailes
677 Sainte-Catherine Street West
Telephone: (514) 288-3759
www.complexelesailes.com
METRO: McGill–Green line
0.7 mile, 13 minutes walking

The Complexe Les Ailes in downtown Montréal offers a premier line-up of top retailers such as Tommy Hilfiger, Lacoste, New Balance, SAQ signature, and Swarovski, along with a post office, a currency exchange office, and a drugstore. Along with the Montréal Eaton Centre and Place Montréal Trust, under the name of Shopping, Complexe Les Ailes offers tourists a gift with any purchase of $150 or more.

Schedule: Monday and Tuesday, 10:00 am–6:00 pm; Wednesday to Friday, 10:00 am–9:00 pm; Saturday, 10:00 am–5:00 pm; Sunday, 11:00 am–5:00 pm.
Special Events

Student Dairy Tour
Saturday, July 11
11:30 am–3:30 pm
Bus departs from the Holiday Inn Select
Tours of nearby dairy farms are planned for Saturday afternoon. Learn about dairying in the region and see different methods of operation. Tour departs from the student headquarters hotel, the Holiday Inn Select.

Student St. Lawrence River Cruise
Saturday, July 11
4:30 pm–5:30 pm
Board the Bateau-Mouche for a scenic cruise along the beautiful St. Lawrence River. Enjoy refreshments, learn about the city of Montréal, and get acquainted with your student colleagues.

Student Informal Mixer: Pub St. Paul
Saturday, July 11
7:00 pm
Meet in the lobby of the Holiday Inn to walk as a group
Meet up with old and new acquaintances at the student informal mixer at Pub St. Paul. Within easy walking distance of the student hotel, the Pub St. Paul will be a great meeting place for food, fun, and refreshments. Then, at 10:00 pm, we will make our way back to the waterfront and find a seat in the grass to enjoy a breathtaking fireworks display during the Montréal International Fireworks Competition.

SAD Undergraduate Midday Mixer & Pizza Party
Sunday, July 12
12:00 pm–1:00 pm
Convention Center, Room 522
Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends. Lunch includes pizza, salad, and drinks. Registration is limited to undergraduate students and advisors.

SAD-Dairy Quiz Bowl Final Round
Sunday, July 12
5:30 pm–6:00 pm
Convention Center, Room 511ad
On Sunday, university teams from across North America will compete in the ADSA Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The Student Affiliate Division (SAD) invites you to join them for the excitement of the final round of competition as the top two schools go head-to-head for the title of 2009 Dairy Quiz Bowl Winning Team.

Opening Session
Sunday, July 12
7:00 pm–8:00 pm
Convention Center, Room 517ab
Come help us kick off the 2009 Joint Annual Meeting at the opening session. We are celebrating the culture of Montréal, home to Cirque du Soleil, with an amazing performance by acrobats and stilt walkers and other exciting presentations!

Opening Reception
Sunday, July 12
8:00 pm–10:00 pm
Convention Center, Room 517cd
Wind down the evening by joining us after the opening session for desserts, drinks, and some long-awaited socializing time with colleagues and friends.
ASAS Graduate Student Forum
Monday, July 13
12:30 pm–1:30 pm
Convention Center, Room 511be
The ASAS Graduate Student Directors invite all ASAS graduate student members to an open forum on Monday, July 13. This forum has been established for three purposes: 1) to allow for representatives from graduate student organizations to interact and exchange ideas to bring back to their respective universities; 2) to provide an opportunity for graduate students to voice their opinions and concerns on what the society can do to improve services to graduate students; and 3) to inform students about the activities and services ASAS has to offer graduate students and early career professionals. All graduate students are welcome to attend.

Exhibitor Reception
Monday, July 13
4:00 pm–6:00 pm
Convention Center, Exhibit Hall 220 cde
Relax after a high-energy first day of meeting with drinks and snacks in the exhibit hall. While there, take some time to peruse the exhibits to learn more about the latest products and services in our industries.

ADSA Town Hall Meeting
Monday, July 13
5:00 pm–6:00 pm
Convention Center, Room 512ae
The ADSA Board of Directors invites attendees to a town hall meeting on Monday, July 13, from 5:00 to 6:00 pm in the Convention Center. All registrants interested in ADSA are welcome.

ASAS Awards Program
Monday, July 13
7:00 pm–8:30 pm
Delta Centre-Ville, Regence AB
All meeting participants, families, and friends are welcome to attend the 2009 ASAS awards program. Please join us at this special event to recognize and congratulate the 2009 ASAS award winners at the Delta Centre-Ville on Monday, July 13.

Graduate Student Mixer
Monday, July 13
9:00 pm
Les 3 Brasseurs
105 St. Paul St. E
Old Montreal (near the Old Port)
The Graduate Student Mixer, a regular JAM event, will be held 9:00 pm on Monday night at Les 3 Brasseurs (http://www.les3brasseurs.ca/eng/st_paul.php), which is located in Old Montreal near the Old Port. If graduate students register prior to the meeting, they will receive free beverage tickets, but registration is not necessary to attend the event. The mixer is a great opportunity to catch up with old friends and make new ones while exploring a bit of Montreal! Preregistration is highly recommended.

Student Informal Mixer: Montréal on Foot
Monday, July 13
7:00 pm
Meet in the lobby of the Holiday Inn to walk as a group
Students will explore the city of Montréal on foot. Known as the city for walkers, Montréal is a unique and fascinating city offering exciting entertainment and cultural diversity—a place where people from all around the globe come together to enjoy a Canadian city with a European flair. After a long day of competitions, this will be a great chance for students to mingle, relax, and just enjoy what promises to be a fun evening on the town in scenic Montréal.
ASAS Graduate Student Lunch-and-Learn: Landing a Job in Academia
Tuesday, July 14
12:30 pm–2:00 pm
Convention Center, Room 522
The ASAS Lunch-and-Learn is open to ASAS Graduate Students interested in a career in academics. This will be an open forum featuring current faculty members ready to answer questions and provide insight into the application, interview, and negotiation processes.

SAD Career Roundtable
Tuesday, July 14
9:30 am–11:00 am
Convention Center, Room 520ad
Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan time to visit industry reps in the exhibit hall for information about internships and job opportunities.

Spouse Event
Tuesday, July 14
11:30 am–1:00 pm
Enjoy a lovely cruise on the St. Lawrence River while hearing some of the history of Montréal and eating a delicious three-course lunch. The boat departs from Quai Jacques-Cartier in the Old Port of Montréal. The port is about a 15-minute walk from the convention center. Walking maps will be provided, or you are welcome to take a cab to the port. Please plan additional time to get to the port, as boarding begins at 11:15 am and the boat will depart at 11:30 am sharp! Preregistration for this event is required.

SAD Awards Luncheon
Tuesday, July 14
11:45 am–2:00 pm
Convention Center, Room 520cf
Plan to attend this year’s SAD awards luncheon. The afternoon will be capped with the presentation of student awards and announcement of new SAD officers. Both students and professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.

The ASAS Open Forum: Échangez vos idées à Montréal
Tuesday, July 14
5:00 pm–6:00 pm
Convention Center, Room 512ae
Attendees are invited to the ASAS Open Forum on Tuesday, July 14, from 5:00 to 6:00 pm in the Convention Center. You will have the opportunity to join discussions on current ASAS issues.

ADSA Awards Program
Tuesday, July 14
7:00 pm–8:00 pm
Convention Center, Room 517a
All meeting participants, families, and friends are welcome to attend the 2009 ADSA awards program. Please join us at this special event to recognize and congratulate the 2009 award winners.

2009 ADSA-CSAS-ASAS Ice Cream Social
Tuesday, July 14
8:15 pm–9:30 pm
Convention Center, Room 710
Ice cream—we’re going to eat ice cream! All meeting participants, families, friends, and award donors are invited to join us for the time-honored ice cream social.

Closing Reception
Wednesday, July 15
4:30 pm–6:00 pm
Convention Center, Room 522
All meeting participants, families, and friends are welcome to attend the closing reception on Wednesday evening. Again this year, attendees will have the opportunity to indicate their home affiliation on a world map; check the exhibit hall for the poster board before the reception.
2009 ADSA Award Donors

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

2009 ASAS Award Donors

ABS Global Inc.
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
L. E. Casida Award Fund
Land O’Lakes, Purina Mills LLC
Merial Limited
Monsanto Company
Morrison Award Fund
Omega Protein Corporation
Pfizer Animal Health
The Iams Company

2009 CSAS Award Donors

Alltech Inc.
Canadian Cattlemen Association
Canadian Pork Council
Chicken Farmers of Canada
Dairy Farmers of Canada
Elanco Animal Health
Novus International
Nutreco
Pfizer Animal Health
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adsa.asas.org/meetings/2009

### Important Message

In the event that protestors interrupt the meetings, please ignore them. Their goal is to attract attention and any attention you give them will only help their cause. Convention staff have a plan in place to handle these situations, and they depend on 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

New for 2009

Two new workshops for students have been added to the meeting: 1) Writers’ Workshop (Thursday, 8:00 am–5:00 pm) and 2) JAS-JDS New Reviewers’ Workshop (Monday, 2:00 pm–5:00 pm).

Location

The Palais des congrès de Montréal (Montréal Convention Center) is ideally located at the center of the international district, or Quartier International de Montréal, within walking distance of the downtown business core, Chinatown, and Old Montréal, where the atmosphere is always festive with an abundance of shops, museums, and restaurants. The extensive Montréal underground walkway system links the Palais des congrès de Montréal to more than 4,000 premium hotel rooms, including the Hyatt (ADSA® headquarters), the Delta Center-Ville (ASAS headquarters), the Hotel InterContinental (CSAS headquarters), and the Fairmont Queen Elizabeth. Moreover, the Palais also features a commercial mall (at level 100) where visitors can benefit from the convenience of a host of products and services (traditional and fast-food restaurants, car rental, travel agency, photo shop, art gallery, beauty salon, and more).

Schedule of Events

The 2009 ADSA-CSAS-ASAS Joint Annual Meeting will be held July 12–16 (Sunday through Thursday). The opening session will be held on Sunday evening, July 12; scientific sessions will kick off Monday morning, July 13, and run through noon on Thursday, July 16. Please note that the schedule for this meeting is Sunday to Thursday.

The Triennial Reproduction Symposium: Challenges and Opportunities Facing Livestock Reproduction in the 21st Century will be held on Sunday, July 12. Also, we will welcome back the Mixed Models Workshop this year, to be held all day Wednesday, July 15, and finishing up the morning of Thursday, July 16. The 2009 opening session will feature a live performance including acrobats and stilt walkers from Cirque du Soleil and other exciting acts that are sure to thrill! The complete schedule of events can be found on page 43 of this book.

Program Format for 2009

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 am–9:30 am</td>
<td>Poster sessions</td>
</tr>
<tr>
<td>9:30 am–12:30 pm</td>
<td>Scientific sessions</td>
</tr>
<tr>
<td>12:30 pm–2:00 pm</td>
<td>Lunch break</td>
</tr>
<tr>
<td>2:00 pm–5:00 pm</td>
<td>Scientific sessions</td>
</tr>
</tbody>
</table>

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

Registration Hours

Registration will be located on the 200 level of the Montréal Convention Center in the Viger Hall area, near the information booth. Registration hours for the 2009 ADSA-CSAS-ASAS Joint Meeting, including special symposia and other events, will be as follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday, July 11</td>
<td>3:00 pm–5:00 pm</td>
</tr>
<tr>
<td>Sunday, July 12</td>
<td>7:00 am–7:00 pm</td>
</tr>
<tr>
<td>Monday, July 13</td>
<td>6:30 am–5:15 pm</td>
</tr>
<tr>
<td>Tuesday, July 14</td>
<td>7:00 am–5:15 pm</td>
</tr>
<tr>
<td>Wednesday, July 15</td>
<td>7:00 am–5:15 pm</td>
</tr>
<tr>
<td>Thursday, July 16</td>
<td>8:00 am–1:00 pm</td>
</tr>
</tbody>
</table>
Important Phone Numbers

Registration Desk .......................... (514) 789-3400
Delta Centre-Ville ......................... (514) 879-1370
Hyatt Regency Montréal .......................... (514) 982-1234
Holiday Inn Select Montréal Centre-Ville ......................... (514) 878-9888
Hotel InterContinental Montréal ................. (514) 987-9900
Fairmont–The Queen Elizabeth ......................... (514) 861-3511
Palais des congrès de Montréal (Montréal Convention Center) ......................... (514) 871-8122
Montréal Convention and Visitors Bureau ......................... (514) 873-2015

Media Check-In

Please check in at the Registration Desk near Viger Hall on the 200 level of the Convention Center.

Speaker Ready Room

The Speaker Ready Room is located in Room 515c of the Convention Center. This room will be available for speakers from 7:00 am to 5:00 pm on each day of the meeting.

Hospitality Lounge

The hospitality lounge will be located in Room 521a of the Convention Center. This lounge will offer attendees an area to relax, network, and catch up with old friends. The hospitality lounge is also a great meet-up place when departing the convention center as a group.

Presentation Information

Oral and Invited Speakers

Oral sessions will begin at 9:30 am on Monday and Tuesday, 10:30 am on Wednesday, and 8:30 am on Thursday. Please note that all session rooms will be equipped with a computer and LCD projector. All oral presentations and invited speaker presentations will be preloaded before the start of the session according to the schedule below.

Onsite Upload Information

To accommodate your needs, we will provide onsite presentation uploading in room 515ab. No presentations will be loaded while the session is in progress or between presentations. Deadlines for onsite uploads are as follows:

<table>
<thead>
<tr>
<th>All Sunday presentations</th>
<th>submitted by</th>
<th>Saturday at 3:00 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Monday presentations</td>
<td>submitted by</td>
<td>Sunday at 3:00 pm</td>
</tr>
<tr>
<td>All Tuesday presentations</td>
<td>submitted by</td>
<td>Monday at 3:00 pm</td>
</tr>
<tr>
<td>All Wednesday presentations</td>
<td>submitted by</td>
<td>Tuesday at 3:00 pm</td>
</tr>
<tr>
<td>All Thursday presentations</td>
<td>submitted by</td>
<td>Wednesday at 3:00 pm</td>
</tr>
</tbody>
</table>

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, Room 220 cde.

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

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

Locating the Correct Poster Board

Each poster board number corresponds to the abstract number as noted in the program. Monday posters will have an “M,” Tuesday posters a “T,” and Wednesday posters a “W” preceding the board number.

Camera, Video Camera, and Cell Phone Policy

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

ARPAS Continuing Education Units

The 2009 ADSA-CSAS-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.

Job Resource Center


Job Resource Center and E-Career Tool Now Available Online!

Whether you are an employer looking to fill a position or a potential employee looking for a job, the E-Career Tool has been developed to facilitate this communication. The E-Career Tool is free to use and very user friendly. Take advantage of the “search employee” function to identify potential candidates and see where/when they will be presenting their work at the 2009 ADSA-CSAS-ASAS Joint Annual Meeting. For the job seeker, upload your CV, cover letter, or anything else you feel will help you get the position you are seeking!

ASAS is excited to bring this new feature to Joint Annual Meeting attendees and hopes you take full advantage of this exciting tool! Visit http://adsa.asas.org/meetings/2009/ecareer.asp for more information. See you in Montréal!
Cyber Café

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

Currency Exchange

Currency exchange centers are located in the Montréal-Trudeau International Airport on the first and ground floors.

Headquarters Hotels

**Delta Centre-Ville — ASAS HQ**
777 Rue University
Montréal, QC H3C 3Z7
Canada
(514) 879-1370

**Hyatt Regency Montréal — ADSA HQ**
1255 Rue de Jeanne-Mance
Montréal, QC H5B 1E5
Canada
(514) 982-1234

**Holiday Inn Select Montréal Centre-Ville — Student HQ**
99 Avenue Viger Ouest
Montréal, QC H2Z 1E9
Canada
(514) 878-9888

**Hotel InterContinental Montréal — CSAS HQ**
360 Saint Antoine Ouest
Montréal, QC H2Y 3X4
Canada
(514) 987-9900

**Fairmont — The Queen Elizabeth**
900 Rene Levesque Blvd. West
Montréal, PQ H3B 4A5
Canada
(514) 861-3511
Directions to the Palais des congrès de Montréal (Convention Center) via the underground pedestrian network

Hyatt Regency to the Palais des congrès

- Take the elevators located in the bar area and go to Niveau 2; when exiting the elevator, go slightly right.
- At Muffin Plus, bear right and look for the Hallmark store where you will take the escalator down to Niveau 1 Allée des Congrès.
- Go straight, following the signs for Complexe Guy Favreau; at the end of the corridor, bear right and take the escalator up.
- Turn left and cross the central court, following the corridor below a mezzanine with large windows.
- Take the escalator down on your left and continue through the corridor.
  Option: At this point you may go outside, cross the courtyard, and enter the Palais des congrès through Viger Hall.
- Take the stairs up and then go right, entering the Palais des congrès, Viger Hall.

Delta Centre-Ville to the Palais des congrès

- From the hotel lobby, go through the Chez Antoine restaurant into the IATA building (Place Victoria).
- Take the escalators down two floors, make a 180-degree turn to your left, and walk through the food court.
- Follow the signs in the food court to the Palais des congrès, continuing straight into the Centre de Commerce Mondial.
- Take the escalator up, walk through the Centre de Commerce Mondial to the far end, and go down the stairs.
- Follow the corridor to Palais des congrès; at the end of the corridor turn right, when you see a yellow wall, continue to the escalators and go up, entering the Palais des congrès.
- Turn right and follow this corridor looking for signs for Viger Hall; the entrance will be on your left. Go to Niveau 2.

Fairmont Queen Elizabeth to the Palais des congrès

- Take the lobby elevators to S2–Gare Centrale and turn right at Tim Horton's.
- Walk through the train station (Gare Centrale) and follow the Hotel – Place Bonaventure signs (next to the Bentley store).
- At the end of the corridor, go through the doors and down the escalators on your right; then go left and through two sets of glass doors.
- Go straight until the end of the corridor and take the escalator up.
- Look for the Place Bonaventure info desk, which will be on your right, and follow the signs for Metro Square Victoria.
- At the end of the corridor, go down the escalators on your right, then bear right, following the signs for the Metro Square Victoria.
- Take the first set of stairs down and follow signs for Metro Square Victoria.
- Turn right and take the stairs down, then turn right at the bottom and take the next set of stairs. Continue down the corridor.
- Take the escalator (or stairs) and turn right, following signs for the Palais des congrès.
- Take the next escalator (or stairs) up and follow that corridor. Enter the glass atrium through the doors on your right.
- Turn left, walk to the other end, and take the stairs down.
- At the bottom of the stairs, take the next set of stairs down, still following signs for the Palais des congrès.
- Make a 180-degree turn, go through the doors, and continue through the corridor.
- At the end of the corridor, take a short left followed by a sharp right into a brightly lit corridor, still following the signs for the Palais des congrès.
- As you continue through the corridor, when the wall on your right is bright yellow, continue to the escalators (or stairs) and go up on your left, entering the Palais des congrès.
- Turn right, follow this corridor, and look for signs for Viger Hall; the entrance will be on your left. Go to Niveau 2.
Transportation in Montréal

Transportation from the Montréal International Airport to all downtown locations is available by taxicab for a flat fee (as of January 2009) of $38 CAD (Canadian dollars) each way or by limousine for a flat fee of $49.50 CAD each way; both fees are regardless of the number of passengers, so share cabs if possible. Cab sharing will be faster and likely less expensive than the shuttle service. Private rentals can also be booked by calling (514) 394-7377. If you prefer to drive yourself, rental cars are also available at the airport.

Welcome to Montréal

Montréal Activities and Sightseeing Options: Get ready for Montréal!

You’re about to experience a city whose passion, joie de vivre, and rich cultural heritage are legendary. Montréalers love to greet visitors and show off their city’s charms, so expect a very warm welcome. It’s like a taste of Europe right in North America. Enjoy . . . à la Montréal. The time and distance estimates for locations noted are calculated for travel from the convention center. Please see street and METRO maps on pages 33 and 34.

Festivals and Special Events

L’International des Feux Loto-Québec presented by TELUS
June 13 to August 15, 2009
La Ronde (member of the Six Flags family)
www.internationaldesfeuxloto-quebec.com
METRO: Île Sainte-Hélène Parc Jean-Drapeau–Yellow Line
3.9 miles, 10 minutes by car

Ten fireworks shows on the program, each lasting 30 minutes.

Salsafolie Sundays 6th Edition
June to September 2009
Salsafolie
King-Edward Pier
Quays of the Old Port of Montréal
www.salsafolie.com
METRO: Champs Mars Station–Orange line
0.7 mile, 12 minutes walking

Dance, performances, and entertainment that moves to the beat of hot salsa rhythms and Latin music.

Montréal Alouettes
June 23 to November 1, 2009
Montréal Alouettes
Percival Molson Stadium
McGill University
475 des Pins Avenue West
www.montrealalouettes.com
METRO: McGill Station–Green line
1.2 miles, 25 minutes walking

The Montréal Alouettes are members of the CFL and the 2002 Grey Cup Champions.
Festival International de Jazz de Montréal 30th Edition  
July 1 to 12, 2009  
Place des Arts  
175 Sainte-Catherine Street West  
www.montrealjazzfest.com  
METRO: Place des Arts—Green line  
0.4 mile, 7 minutes walking

Over 500 shows, including 370 free outdoor concerts, are presented in the heart of downtown Montréal.

Just For Laughs Festival Presented by Videotron  
July 3 to 26, 2009  
Just For Laughs Festival  
Quartier latin  
www.hahaha.com  
METRO: Berri/Uqam—Green/Orange/Yellow lines  
0.8 mile, 15 minutes walking

Montréal International Tango Festival  
July 10 to 19, 2009  
Several Montréal locations  
www.festvaldetangodemontreal.qc.ca

Nine days of concerts, shows, dance evenings, open air activities, and master classes offered to all participants.

Sainte-Catherine Street Celebrates Sidewalk Sale  
July 18 and 19, 2009  
Sainte-Catherine Street West  
Between Atwater Avenue and Saint-Urbain Street  
www.destinationcentreville.com  
METRO: Atwater to Place des Arts Stations—Green line  
0.3 mile, 8 minutes walking

One of the largest sidewalk sales in Canada, in the heart of the metropolis.

Festival International Nuits d’Afrique de Montréal 23rd Edition  
July 16 to 26, 2009  
International Nuits d’Afrique Festival of Montréal  
Place Émilie-Gamelin  
Corner of Berri and Sainte-Catherine Streets  
www.festivalnuitsdafrique.com  
METRO: Berri/Uqam—Green/Orange/Yellow lines  
0.9 mile, 4 minutes walking

The best music from Africa, the Caribbean, and Latin America. Five hundred artists from over 30 countries and activities for the whole family.

Fantasia International Film Festival  
July 16 to August 3, 2009  
Concordia University  
1455 de Maisonneuve Blvd. West  
www.fantasiafest.com  
METRO: Guy Concordia—Green line  
1.4 miles, 28 minutes walking or 5 minutes by car

Although its focus is on fantasy, action, and horror, Fantasia's line-up also includes other original and eclectic works.
Festival International du Merengue et de la Musique Latine de Montréal
July 17 to 19, 2009
Île Notre-Dame
www.festivalmerenguedemontreal.com
METRO: Parc Jean-Drapeau—Yellow line
6.1 miles, 16 minutes by car

Performances by local and international groups, featuring salsa, merengue, bachata, reggae, compass, and samba.

Ongoing Events and Places Not to Miss

And Then There Was Light
Notre-Dame Basilica
110 Notre-Dame Street West
Telephone: (514) 842-2925
www.therewaslight.ca
METRO: Place-d’Armes—Orange line
0.6 mile, 12 minutes walking

Celebrate the founding of Montréal and the Notre-Dame Basilica with a spectacular sound and light show. State-of-the-art multimedia techniques highlight the Basilica’s exceptional works of art and bring to life its cultural, architectural, and spiritual heritage.

Montréal Biodôme
4777 Pierre-De Coubertin Avenue
Telephone: (514) 868-3000
www.museumsnature.ca
METRO: Viau—Green line
5.3 miles, 13 minutes by car

Since it first opened in 1992, some 14 million visitors have travelled through this “house of life,” a unique concept in the world. Here, plants and animals by the thousands, cliffs and waterways, and even the climate itself recreate with stunning realism the four finest ecosystems of the Americas.

Montréal Botanical Garden
4101 Sherbrooke Street East
Telephone: (514) 872-1400
www.museumsnature.ca
METRO: Pie-IX—Green line
4 miles, 10 minutes by car

With an outstanding collection that boasts more than 22,000 species and varieties of plants, the Montréal Botanical Garden is considered one of the world’s best gardens. Over 180 acres, it features 10 exhibition greenhouses and over 30 outdoor gardens. The Chinese and Japanese Gardens offer exotic landscapes, whereas the Tree House displays Québec’s abundant forest wealth. In the First Nations Garden, you can discover the relationship that 10 Amerindian nations and the Inui nation of Québec have always maintained with the world of plants.

Montréal Science Centre
King-Edward Pier
Quays of the Old Port of Montréal
Telephone: (514) 496-4629
www.MontrealScienceCentre.com
METRO: Place d’Armes—Orange line
0.7 mile, 12 minutes walking

The Montréal Science Centre invites you to discover its new exploration halls, cultural and educational activities with a scientific and technological flavor, multimedia challenges, and unusual games, along with special interactive areas, an interactive movie game, and an IMAX TELUS theatre.
The Montréal Museum of Fine Arts
1379-1380 Sherbrooke Street West
Telephone: (514) 285-2000
http://www.mmfa.qc.ca
METRO: Guy Concordia–Green line
1.4 miles, 29 minutes walking

The attractive and encyclopedic permanent collection of the Montréal Museum of Fine Arts brings together works from all continents and all periods. From its new rooms devoted to Napoleon and the First Empire to glass sculptures, arts of Africa and beautiful pre-Colombian art objects, the Museum’s collection illustrates various aspects of artistic creativity.

Musée d’art contemporain de Montréal
185 Sainte-Catherine West
Telephone: (514) 847-6226
www.macm.org
METRO: Place des Arts–Green line
0.3 mile, 7 minutes walking

Canada’s premier museum devoted exclusively to contemporary art, the Musée d’art contemporain de Montréal is a superb place to discover the wealth of Québec creativity and leading international trends. Discover art created by contemporary artists using painting, drawing, engraving, sculpture, photography, installation, film, and video.

McCord Museum
690 Sherbrooke Street West
Telephone: (514) 398-7100
www.mccord-museum.qc.ca
METRO: McGill–Green line
1.4 miles, 29 minutes walking

The McCord Museum offers meeting planners four special rooms, all with that little something extra. Among them is the sumptuous grand arched hallway, designed by renowned architect Percy E. Nobbs—a perfect setting for refined get-togethers, meetings, and cocktail gatherings. The theatre is equipped with the latest technologies—for optimum multimedia and audio-visual presentations.

Château Ramezay Museum
280 Notre-Dame Street East
Telephone: (514) 861-3708
www.chateauramezay.qc.ca
METRO: Champ-de-Mars–Orange line
0.6 mile, 11 minutes walking

Scene of bustling social activity since the 18th century, the warm ambiance of these historic surroundings makes it an ideal venue for your corporate events.

Marché Bonsecours
350 Saint-Paul Street East
Telephone: (514) 872-7730
www.marchebonsecours.qc.ca
METRO: Place d’Armes–Orange line
0.7 mile, 13 minutes walking

The Marché Bonsecours was inaugurated in 1847. A symbol of Montréal’s heyday, this imposing building was the city’s main agricultural marketplace for over a century. It also housed a concert hall and even served as a city hall. Its symmetrical composition and Greek Revival portico (the cast-iron columns were brought from England), tin-plated dome, and simple and varied details make it a perfect illustration of the neoclassical style in favor at the time. Recent renovations have turned it once again into a bustling marketplace that also features sidewalk cafés, shops, and exhibitions.
Shopping Centers

Complexe Desjardins
150 Sainte-Catherine Street West
Telephone: (514) 845-4636
www.complexedesjardins.com
METRO: Place-des-Arts–Green line
0.4 mile, 8 minutes walking

One hundred ten stores, services, and restaurants, as well as a grocery store, surround an immense public square where many events are held year-round. Located in the heart of downtown, cultural events, and the underground city, Complexe Desjardins also gives direct access to the Hyatt Regency Montréal hotel.

Schedule: Monday to Wednesday, 9:30 am–6:00 pm; Thursday and Friday, 9:30 am–9:00 pm; Saturday, 9:30 am–5:00 pm; Sunday, 12:00 pm–5:00 pm.

The Montréal Eaton Centre
705 Sainte-Catherine Street West
Telephone: (514) 288-3708
www.montrealeatoncentre.com
METRO: McGill–Green line
0.8 mile, 15 minutes walking

The Montréal Eaton Centre is home to over 175 stores, restaurants, and services, as well as a convenient indoor parking facility. Located in the heart of downtown Montréal on the corner of Sainte-Catherine Street and McGill College Avenue, this shopping mall offers many packages to tourists. Information on the packages is available at www.shopping3.ca.

Schedule: Monday to Friday, 10:00 am–9:00 pm; Saturday, 10:00 am–5:00 pm; Sunday, 11:00 am–5:00 pm.

Complexe Les Ailes
677 Sainte-Catherine Street West
Telephone: (514) 288-3759
www.complexelesailes.com
METRO: McGill–Green line
0.7 mile, 13 minutes walking

The Complexe Les Ailes in downtown Montréal offers a premier line-up of top retailers such as Tommy Hilfiger, Lacoste, New Balance, SAQ signature, and Swarovski, along with a post office, a currency exchange office, and a drugstore. Along with the Montréal Eaton Centre and Place Montréal Trust, under the name of Sh3pping, Complexe Les Ailes offers tourists a gift with any purchase of $150 or more.

Schedule: Monday and Tuesday, 10:00 am–6:00 pm; Wednesday to Friday, 10:00 am–9:00 pm; Saturday, 10:00 am–5:00 pm; Sunday, 11:00 am–5:00 pm.
Special Events

**Student Dairy Tour**
Saturday, July 11
11:30 am–3:30 pm
*Bus departs from the Holiday Inn Select*
Tours of nearby dairy farms are planned for Saturday afternoon. Learn about dairying in the region and see different methods of operation. Tour departs from the student headquarters hotel, the Holiday Inn Select.

**Student St. Lawrence River Cruise**
Saturday, July 11
4:30 pm–5:30 pm
Board the Bateau-Mouche for a scenic cruise along the beautiful St. Lawrence River. Enjoy refreshments, learn about the city of Montréal, and get acquainted with your student colleagues.

**Student Informal Mixer: Pub St. Paul**
Saturday, July 11
7:00 pm
*Meet in the lobby of the Holiday Inn to walk as a group*
Meet up with old and new acquaintances at the student informal mixer at Pub St. Paul. Within easy walking distance of the student hotel, the Pub St. Paul will be a great meeting place for food, fun, and refreshments. Then, at 10:00 pm, we will make our way back to the waterfront and find a seat in the grass to enjoy a breathtaking fireworks display during the Montréal International Fireworks Competition.

**SAD Undergraduate Midday Mixer & Pizza Party**
Sunday, July 12
12:00 pm–1:00 pm
*Convention Center, Room 522*
Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends. Lunch includes pizza, salad, and drinks. Registration is limited to undergraduate students and advisors.

**SAD-Dairy Quiz Bowl Final Round**
Sunday, July 12
5:30 pm–6:00 pm
*Convention Center, Room 511ad*
On Sunday, university teams from across North America will compete in the ADSA Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The Student Affiliate Division (SAD) invites you to join them for the excitement of the final round of competition as the top two schools go head-to-head for the title of 2009 Dairy Quiz Bowl Winning Team.

**Opening Session**
Sunday, July 12
7:00 pm–8:00 pm
*Convention Center, Room 517ab*
Come help us kick off the 2009 Joint Annual Meeting at the opening session. We are celebrating the culture of Montréal, home to Cirque du Soleil, with an amazing performance by acrobats and stilt walkers and other exciting presentations!

**Opening Reception**
Sunday, July 12
8:00 pm–10:00 pm
*Convention Center, Room 517cd*
Wind down the evening by joining us after the opening session for desserts, drinks, and some long-awaited socializing time with colleagues and friends.
ASAS Graduate Student Forum
Monday, July 13
12:30 pm–1:30 pm
Convention Center, Room 511be
The ASAS Graduate Student Directors invite all ASAS graduate student members to an open forum on Monday, July 13. This forum has been established for three purposes: 1) to allow for representatives from graduate student organizations to interact and exchange ideas to bring back to their respective universities; 2) to provide an opportunity for graduate students to voice their opinions and concerns on what the society can do to improve services to graduate students; and 3) to inform students about the activities and services ASAS has to offer graduate students and early career professionals. All graduate students are welcome to attend.

Exhibitor Reception
Monday, July 13
4:00 pm–6:00 pm
Convention Center, Exhibit Hall 220 cde
Relax after a high-energy first day of meeting with drinks and snacks in the exhibit hall. While there, take some time to peruse the exhibits to learn more about the latest products and services in our industries.

ADSA Town Hall Meeting
Monday, July 13
5:00 pm–6:00 pm
Convention Center, Room 512ae
The ADSA Board of Directors invites attendees to a town hall meeting on Monday, July 13, from 5:00 to 6:00 pm in the Convention Center. All registrants interested in ADSA are welcome.

ASAS Awards Program
Monday, July 13
7:00 pm–8:30 pm
Delta Centre-Ville, Regence AB
All meeting participants, families, and friends are welcome to attend the 2009 ASAS awards program. Please join us at this special event to recognize and congratulate the 2009 ASAS award winners at the Delta Centre-Ville on Monday, July 13.

Graduate Student Mixer
Monday, July 13
9:00 pm
Les 3 Brasseurs
105 St. Paul St. E
Old Montreal (near the Old Port)
The Graduate Student Mixer, a regular JAM event, will be held 9:00 pm on Monday night at Les 3 Brasseurs (http://www.les3brasseurs.ca/eng/st_paul.php), which is located in Old Montreal near the Old Port. If graduate students register prior to the meeting, they will receive free beverage tickets, but registration is not necessary to attend the event. The mixer is a great opportunity to catch up with old friends and make new ones while exploring a bit of Montreal! Preregistration is highly recommended.

Student Informal Mixer: Montréal on Foot
Monday, July 13
7:00 pm
Meet in the lobby of the Holiday Inn to walk as a group
Students will explore the city of Montréal on foot. Known as the city for walkers, Montréal is a unique and fascinating city offering exciting entertainment and cultural diversity—a place where people from all around the globe come together to enjoy a Canadian city with a European flair. After a long day of competitions, this will be a great chance for students to mingle, relax, and just enjoy what promises to be a fun evening on the town in scenic Montréal.
ASAS Graduate Student Lunch-and-Learn: Landing a Job in Academia
Tuesday, July 14
12:30 pm–2:00 pm
Convention Center, Room 522
The ASAS Lunch-and-Learn is open to ASAS Graduate Students interested in a career in academics. This will be an open forum featuring current faculty members ready to answer questions and provide insight into the application, interview, and negotiation processes.

SAD Career Roundtable
Tuesday, July 14
9:30 am–11:00 am
Convention Center, Room 520ad
Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan time to visit industry reps in the exhibit hall for information about internships and job opportunities.

Spouse Event
Tuesday, July 14
11:30 am–1:00 pm
Enjoy a lovely cruise on the St. Lawrence River while hearing some of the history of Montréal and eating a delicious three-course lunch. The boat departs from Quai Jacques-Cartier in the Old Port of Montréal. The port is about a 15-minute walk from the convention center. Walking maps will be provided, or you are welcome to take a cab to the port. Please plan additional time to get to the port, as boarding begins at 11:15 am and the boat will depart at 11:30 am sharp! Preregistration for this event is required.

SAD Awards Luncheon
Tuesday, July 14
11:45 am–2:00 pm
Convention Center, Room 520cf
Plan to attend this year’s SAD awards luncheon. The afternoon will be capped with the presentation of student awards and announcement of new SAD officers. Both students and professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.

The ASAS Open Forum: Échangez vos idées à Montréal
Tuesday, July 14
5:00 pm–6:00 pm
Convention Center, Room 512ae
Attendees are invited to the ASAS Open Forum on Tuesday, July 14, from 5:00 to 6:00 pm in the Convention Center. You will have the opportunity to join discussions on current ASAS issues.

ADSA Awards Program
Tuesday, July 14
7:00 pm–8:00 pm
Convention Center, Room 517a
All meeting participants, families, and friends are welcome to attend the 2009 ADSA awards program. Please join us at this special event to recognize and congratulate the 2009 award winners.

2009 ADSA-CSAS-ASAS Ice Cream Social
Tuesday, July 14
8:15 pm–9:30 pm
Convention Center, Room 710
Ice cream—we’re going to eat ice cream! All meeting participants, families, friends, and award donors are invited to join us for the time-honored ice cream social.

Closing Reception
Wednesday, July 15
4:30 pm–6:00 pm
Convention Center, Room 522
All meeting participants, families, and friends are welcome to attend the closing reception on Wednesday evening. Again this year, attendees will have the opportunity to indicate their home affiliation on a world map; check the exhibit hall for the poster board before the reception.
2009 ADSA Award Donors

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

2009 ASAS Award Donors

ABS Global Inc.
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
Land O’Lakes, Purina Mills LLC
L. E. Casida Award Fund
Merial Limited
Monsanto Company
Morrison Award Fund
Omega Protein Corporation
Pfizer Animal Health
The Iams Company

2009 CSAS Award Donors

Alltech Inc.
Canadian Cattlemen Association
Canadian Pork Council
Chicken Farmers of Canada
Dairy Farmers of Canada
Elanco Animal Health
Novus International
Nutreco
Pfizer Animal Health
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A special thank you to our
2009 ADSA®-CSAS-ASAS
Joint Meeting Exhibitors!
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.

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.

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

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

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, nutritious, 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.

Established in 1908, ASAS is a professional organization for animal scientists designed to help members provide effective leadership through research, extension, teaching, and service for the dynamic and rapidly changing livestock and meat industries. Please visit www.asas.org for more information.
Analab
PO Box 208
Fulton, IL 61252-0208
Phone: (815) 589-2525; Fax: (815) 589-4568
http://www.analabtest.com
Booth(s): 802

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

Ankom Technology
2052 O'Neil Rd.
Macedon, NY 14502-8953
Phone: (315) 986-8090; Fax: (315) 986-8091
http://www.ankom.com
Booth(s): 201

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.

APC Inc.
2425 SE Oak Tree Ct.
Ankeny, IA 50021-7102
http://www.functionalproteins.com
Booth(s): 300

APC Inc. is a world leader in the development of functional proteins for animal health and nutrition. For 25 years, APC's research investments have yielded safe, effective products to improve animal performance in the swine, ruminant, aquaculture, companion animal, and poultry industries.

Arm & Hammer Animal Nutrition
469 N. Harrison St.
Princeton, NJ 08540-3510
Phone: (609) 279-7685; Fax: (609) 497-7176
http://www.AHDairy.com
Booth(s): 707

Arm & Hammer Animal Nutrition is a leading supplier of innovative dairy feed ingredients that affect each phase of a cow's life cycle. Our products have been specially formulated to give you more profit per cow. Trust Arm & Hammer Animal Nutrition for innovative, proven, and trusted nutritional solutions.

ARPAS
2441 Village Green Place
Champaign, IL 61822
Phone: (217) 356-5390; Fax: (217) 398-4119
http://www.arpas.org
Booth(s): 221

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.
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): 511, 513

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

Bar Diamond Inc.
PO Box 60
Parma, ID 83660-0060
Phone: (208) 722-6761; Fax: (208) 722-6686
http://www.bardiamond.com
Booth(s): 203

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
Booth(s): 318

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

CABI Publishing
Nosworthy Way
Wallingford, Oxfordshire OX10 8DE
United Kingdom
Phone: +44 1491829376
http://www.cabi.org
Booth(s): 503

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

**Central Life Sciences**
1501 E. Woodfield Rd., Suite 200 West
Schaumburg, IL 60173-6052
Phone: (800) 347-8272
http://www.cent rallifesciences.com
Booth(s): 615

ClariFly Larvicide is a feed additive that works as a feed-through for confined cattle to battle nuisance flies. The active ingredient passes through the digestive system and into the manure where flies breed, interrupting their life cycle and preventing pupae from developing into adults. ClariFly even controls organophosphate and pyrethroid resistant flies.

**Central Valley Nutritional Associates**
3320 E Mineral King Ave., Ste. E
Visalia, CA 93292-7059
http://www.formulate2.com
Booth(s): 225

The Formulate2 Dairy Ration Optimizer provides full implementation of the NRC (2001) model. It features full optimization capabilities including constraining MP-AA at the duodenal level and also implements recent research predicting lactation responses from changes in MP-Lys and MP-Met supply.

**Chr. Hansen**
9015 W. Maple St.
Milwaukee, WI 53214-4213
Phone: (414) 607-5800; Fax: (414) 607-5704
http://www.chr-hansen.com
Booth(s): 210, 212

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): 507

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

**Dairy Records Management Systems**
313 Chapanoke Rd., Ste. 100
Raleigh, NC 27603-3434
Phone: (919) 661-3100; Fax: (919) 661-3145
http://www.drms.org
Booth(s): 400

Dairy Records Management Systems (DRMS) provides dairy information products and services for producers and dairy industry professionals. High-level management reports such as Transition Cow Management, Survival Analysis, and Persistency Analysis are among the many processed reports available from DRMS. Leading-edge software and Web-based products include PCDART, PocketDairy, Herd Detective, DairyMetrics, and WebReports.
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): 505

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.

DHHS-FDA-CVM
7519 Standish Pl., Ste. 3508
Rockville, MD 20855-2792
http://www.fda.gov
Booth(s): 213

At the Center for Veterinary Medicine, a consumer protection organization and a component of the US Food and Drug Administration, we ensure that animal drugs, food additives, animal devices, and medicated feeds are safe and effective. We ensure that food (e.g., milk, meat, and eggs) from treated animals is safe for us to eat. In addition, we protect public and animal health by approving safe and effective products; monitoring marketed products for safety and effectiveness; conducting research; educating the public; and enforcing the applicable sections of the Federal Food, Drug, and Cosmetic Act, the law under which we operate.

Diamond V Mills
838 1st St. NW
Cedar Rapids, IA 52405-2713
Phone: (319) 866-7679; Fax: (319) 366-6333
http://www.diamondv.com/
Booth(s): 305, 307, 404, 406

At Diamond V, we understand our success is dependent on the success of our customers. Headquartered in Cedar Rapids, Iowa, Diamond V has been an industry leader for more than 65 years, providing all-natural nutritional products and services. Diamond V’s innovative brands—original family of yeast culture products (Original YC, XP, and XPC), DiaMune Se, SelenoSource, and DV Aqua—are research proven and engineered to deliver results. Our proprietary DiaMatrix Technology ensures consistent delivery of nutritional metabolites for maximizing animal efficiency, performance, and profitability.

DSM Nutritional Products
45 Waterview Blvd.
Parsippany, NJ 07054-1219
Phone: (800) 677-8355; Fax: (973) 257-8653
http://unlimitednutrition-na.dsm.com
Booth(s): 215

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.
Elsevier
1600 John F Kennedy Blvd., Ste. 1800
Philadelphia, PA 19103-2398
Phone: (215) 239-3493; Fax: (215) 239-3494
Booth(s): 119

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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): 113, 115

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

Federation of Animal Science Societies (FASS)
2441 Village Green Place
Champaign, IL 61822
Phone: (217) 356-3182; Fax: (217) 398-4119
http://www.fass.org
Booth(s): 302

The Federation of Animal Science Societies (FASS) was formed in 1998 by three founding member societies: the American Dairy Science Association® (ADSA®), the American Society of Animal Science (ASAS), and the Poultry Science Association (PSA). FASS is unique in that we support common agricultural interests and, at the same time, streamline administrative expenses while preserving the societies’ traditions and values. We specialize in providing a wide array of management services to small- and medium-sized, not-for-profit associations. In addition, each year, PhD scientists in animal science compete for the opportunity to represent FASS in Congress through the Congressional Science Fellowship (CSF) Program. Many of these individuals stay on the Washington scene after their fellowship year and continue to serve animal agriculture in significant ways. Be sure to stop by the FASS booth to hear about DC activities from the 2008–2009 CSF.

Feed Management Systems
6120 Earle Brown Dr., Ste. 300
Brooklyn Center, MN 55430-4101
Phone: (763) 560-8139; Fax: (701) 280-2668
http://www.feedsys.com
Booth(s): 218

Feed Management Systems provides integrated software solutions for feed manufacturers to manage their critical formula and production data. Ensure the quality of your feed supply by automating and optimizing formulas, pricing, ordering, inventory, labeling, delivery, traceability, reporting, and financials. Solutions include Feed Mill Manager, Brill Formulation, Feed Ration Balancer, and Feed Tags.
The Feed Analysis Consortium Inc. (FeedAC) is a membership-based nonprofit organization dedicated to the advancement of feed analysis and nutritional modeling. The mission of FeedAC is to serve the animal feed industry by developing improved methods of feed analysis, providing leadership for methods standardization, and building and maintaining a comprehensive and evolving database of feed analysis information for all farm animals. Upon request from its membership, the organization has also committed to providing leadership to standardizing electronic data exchange. The organization also continues to develop collaborations with other organizations to achieve its goals. Be sure to attend this year’s annual meeting and stop by the exhibitor booth to get an update on FeedAC activities and to find out how you can get involved!

Feedstuffs
12400 Whitewater Dr., Ste. 160
Minnetonka, MN 55343-4158
Phone: (985) 930-4349; Fax: (952) 938-1832
Booth(s): 705

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

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Kaysville, UT 84037-9720
Phone: (435) 881-5311; Fax: (801) 991-9181
http://www.fort-supply.com
Booth(s): 509

Fort Supply Technologies LLC provides data collection software and ruggedized handheld devices.

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www.grobernutrition.com
Booth(s): 610

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

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Westport, CT 06880-6444
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http://www.bakerbro.com
Booth(s): 306

PRO-LAK Dairy By-Pass Protein is designed to complement the protein from rumen microbial activity and formulated for today’s high producing dairy cows. Desired nutrient balance is accomplished by 72% of protein bypassing rumen degradation and delivering the essential amino acid profile to support maximum milk production. For university research and more information, see www.bakerbro.com.
International Service Learning
2209 Elma St.
Kansas City, MO 64124-1713
http://www.ISLonline.org
Booth(s): 523

International Service Learning is one of the most experienced providers of health-oriented opportunities, assuring the greatest degree of security and range of opportunity available on a short-term basis. Over 1,000 students annually help provide care to 250,000 peoples in nine different countries. We offer a financial sponsorship program; apply to info@ISLonline.org.

Journal of Animal Science (JAS)
2441 Village Green Place
Champaign, IL 61822
Phone: (217) 356-3185; Fax: (217) 398-4119
http://jas.fass.org/
Booth(s): 322

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

Kahne Limited
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New Zealand
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http://www.kahneanimalhealth.com
Booth(s): 310

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http://www.lallemandanimalnutrition.com/
Booth(s): 600, 602, 604, 606

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.

Northeast Sustainable Agriculture Research and Education
655 Spear St.
University of Vermont
Burlington, VT 05405-0107
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http://www.nesare.org
Booth(s): 121

Through the Northeast Sustainable Agriculture Research and Education grants program, researchers have received up to $180,000 for multiyear grants on sustainable agriculture.
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Booth(s): 111

Probiotech International Inc. develops and provides the animal nutrition industry with natural solutions. The line of products was designed using the principles of biotechnology to promote animal health and 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.

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7475 W. Main St.
Milwaukee, WI 53214-1552
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Booth(s): 806

Saf Agri/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.

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Italy
Fax: +390331353976
http://www.sopgroup.com
Booth(s): 301, 303

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PO Box 157
West Point, NE 68788-0157
Phone: (402) 372-2429; Fax: (402) 372-3305
http://www.soybest.com
Booth(s): 324

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 phosphatidyl-choline. Research shows these nutrients behave like rumen-protected fat, resulting in even more bypass protein with excellent intestinal digestibility.

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Ralston, IA 51459-0068
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http://www.soyplus.com
Booth(s): 314

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http://www.unityscientific.com
Booth(s): 703

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

USDA–Animal Welfare Information Center
10301 Baltimore Ave., Room 410
Beltsville, MD 20705-2326
http://awic.nal.usda.gov
Booth(s): 607

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

Varied Industries Corporation
905 S Carolina Ave.
PO Box 1483
Mason City, IA 50401-5813
Phone: (641) 423-1460; Fax: (641) 423-0832
http://www.vi-cor.com
Booth(s): 619, 621, 718, 720

Varied Industries Corporation (Vi-COR) is a manufacturer located in Mason City, Iowa. We concentrate on developing and researching fermentation products for animal health-care needs for all species. Quality products and customer service are a high priority. Vi-COR distributes product in 30 countries and provides private labeling for customers’ needs.

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Montréal Street Map
Palais des congrès de Montréal
Level 2
Palais des congrès de Montréal
Level 5
Palais des congrès de Montréal

Exhibit Hall Floor Plan

220 cde
Hyatt Regency

NIVEAU 6 LEVEL

NIÉVEAU 5 LEVEL

NIVEAU 4 LEVEL
Delta Centre-Ville

Emplacement des salles de réception et de réunion
Location of reception and meeting rooms

ÉTAGE C / C FLOOR
Deuxième sous-sol / Second floor below lobby

ÉTAGE CI / CI FLOOR
Premier sous-sol / First floor below lobby

MEZZANINE
Étage au-dessus du rez-de chaussée / First floor above lobby

REZ-DE CHAUSSEE / LOBBY LEVEL

LE CINQUIÈME / FIFTH FLOOR

Delta Centre-Ville

777, RUE UNIVERSITY, MONTRÉAL (Québec) CANADA H3C 3Z7 TÉL.: (514) 879-1370 FAX: (514) 879-1831
Thank you to the 2009 ADSA-CSAS-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.

Friday, July 10
3:30 pm–6:00 pm  ASAS Membership Committee Meeting  Delta Centre-Ville, Room 532
7:00 pm–9:00 pm  ASAS New Board Orientation  Delta Centre-Ville, Room 532

Saturday, July 11
7:30 am–5:00 pm  ADSA Board of Directors Meeting  Hyatt Regency, Hospitalite, L5
8:00 am–5:00 pm  ADSA Board of Directors Meeting  Delta Centre-Ville, St. Laurent Room
11:30 am–3:30 pm  Student Dairy Tour  Meet in the Holiday Inn lobby
3:00 pm–5:00 pm  Registration Open  Convention Center, 200 level, Viger Hall
4:30 pm–5:30 pm  Student St. Lawrence River Cruise  Meet in the Holiday Inn lobby
7:00 pm  Student Informal Mixer: Pub St. Paul  Meet in the Holiday Inn lobby
7:30 pm–9:00 pm  ARPAS Executive Committee Meeting  Hyatt Regency, Lorraine, L5

Sunday, July 12
7:00 am–7:00 pm  Registration Open  Convention Center, 200 level, Viger Hall
7:30 am–10:00 am  ADSA New Board Orientation  Hyatt Regency, Vandreuil, L5
8:00 am–5:00 pm  Triennial Reproduction Symposium  Convention Center, 511cf
8:30 am–12:30 pm  ASAS Board of Directors Meeting  Delta Centre-Ville, St. Laurent Room
10:00 am–6:00 pm  Exhibit Set-Up  Convention Center, Exhibit Hall 220cde
10:00 am–6:00 pm  Student Dairy Clubs Set Up Exhibits  Hyatt Regency, Hospitalite, L5
8:00 am–5:00 pm  ARPAS Governing Board Meeting  Convention Center, 511a
10:00 am–11:00 am  SAD Officers and Advisor Meeting  Convention Center, 511d
11:00 am–12:00 pm  SAD Quiz Bowl Officials Meeting  Convention Center, 521a
11:30 am–12:00 pm  SAD Quiz Bowl Seating Test  Convention Center, 522
12:00 pm–1:00 pm  SAD Undergraduate Midday Mixer  Convention Center, 522
12:00 pm–1:00 pm  ADSA IDS® Editors and Journal Management Committee Luncheon  Hyatt Regency, A. Rouleau A, L4
1:00 pm–3:00 pm  2009 and 2010 Program Committee Meeting  Convention Center, 510bd
1:00 pm–5:00 pm  ADSA Journal Management Committee Meeting  Hyatt Regency, A. Rouleau A, L4
1:00 pm–5:00 pm  ADSA-SAD Quiz Bowl Seating/Preliminary Rounds  Convention Center, 511a and 511d
1:00 pm–6:00 pm  CSAS Executive Committee Meeting  InterContinental, Vieux-Port
2:00 pm–3:00 pm  ADSA Production Division Council Meeting  Convention Center, 523b
2:00 pm–4:00 pm  ADSA Foundation Board of Trustees Meeting  Hyatt Regency, A. Rouleau B, L4
3:00 pm–4:00 pm  ADSA Production Division Nominating Committee  Convention Center, 523b
3:00 pm–5:00 pm  Late-Breaking Original Research Session  Convention Center, 510ac
5:30 pm–6:00 pm  ADSA-SAD Quiz Bowl Final Round  Convention Center, 511ad
5:00 pm–6:00 pm  ADSA Dairy Foods Division Council Meeting  Convention Center, 523a
5:00 pm–6:30 pm  ASAS Retirees Gathering  Convention Center, 522
7:00 pm–8:00 pm  2009 ADSA-CSAS-ASAS Opening Session  Convention Center, 517ab
8:00 pm–10:00 pm  2009 ADSA-CSAS-ASAS Opening Reception  Convention Center, 517cd
Monday, July 13

6:30 am–8:00 am  ADSA Production Division Extension Breakfast
6:30 am–5:15 pm  Registration Open
7:00 am–8:15 am  ADSA-SAD Exhibit Set-Up
7:30 am–9:30 am  Poster Presentations
7:30 am–8:30 am  Biomin Breakfast
8:00 am–6:00 pm  Commercial Exhibits & ADSA-SAD Exhibits Open
8:00 am–5:00 pm  Job Resource Center
8:00 am–5:00 pm  Hospitality Lounge Open
8:30 am–9:15 am  ADSA-SAD Business Meeting
9:30 am–10:30 am  ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports
9:30 am–10:30 am  ADSA-SAD Interviews for Outstanding Student and Advisor Awards
9:30 am–10:45 am  ADSA-SAD Activities Symposium
9:30 am–5:00 pm  Scientific Sessions
10:30 am–12:30 pm  ARPAS Exam
11:00 am–5:00 pm  ADSA-SAD Undergraduate Paper Presentations
12:30 pm–2:00 pm  ASAS Past Presidents’ Luncheon
12:30 pm–1:30 pm  ASAS Graduate Student Open Forum
12:30 pm–2:00 pm  Michigan State University Luncheon
12:30 pm–2:00 pm  ADSA Past Presidents’ Luncheon
12:30 pm–2:00 pm  ACAS Annual Meeting
2:00 pm–5:00 pm  JAS-JDS New Reviewers’ Workshop
2:00 pm–3:30 pm  Discover Steering Committee Meeting
2:00 pm–4:00 pm  ARPAS Exam
2:00 pm–5:30 pm  Southern Branch ADSA Symposium and Business Meeting
4:00 pm–6:00 pm  Exhibitor Reception
4:30 pm–6:00 pm  Johne’s Interest Group
5:00 pm–6:00 pm  ADSA Town Hall Meeting
5:00 pm–7:00 pm  Informal Calf Gathering
5:30 pm–7:00 pm  ASAS Award Winners Dinner & Photo Session
7:00 pm  SAD Informal Mixer: Montréal on Foot
7:00 pm–8:30 pm  ASAS Awards Program
8:00 pm–11:00 pm  Iowa State Reception
9:00 pm  Graduate Student Mixer

Tuesday, July 14

6:30 am–8:00 am  University of Illinois Breakfast
6:30 am–8:00 am  Virginia Tech Breakfast
6:30 am–8:00 am  JDS Editorial Board Breakfast/Meeting
6:30 am–8:00 am  Penn State Breakfast
7:00 am–8:00 am  Kentucky Breakfast
7:00 am–5:15 pm  Registration Open
7:30 am–8:30 am  Biomin Breakfast
7:30 am–9:30 am  Poster Presentations
8:00 am–5:00 pm  Commercial Exhibits & ADSA-SAD Exhibits Open
8:00 am–5:00 pm  Job Resource Center
8:00 am–5:00 pm  Hospitality Lounge Open
8:30 am–9:30 am  ADSA-Student Business Meeting—Elec. of Officers
9:30 am–5:00 pm  Scientific Sessions
9:30 am–11:00 am  ADSA-SAD Student Career Roundtable
9:30 am–11:30 am  ASAS Foundation Board of Trustees Meeting
10:30 am–12:30 pm  ARPAS Exam
11:30 am–12:30 pm  ADSA Production Division Business Meeting
11:30 am–12:30 pm | ADSA Dairy Foods Division Business Meeting  
11:30 am–1:00 pm | Spouse Event—Boat Tour of St. Lawrence River  
11:45 am–2:00 pm | ADSA-SAD Awards Luncheon  
12:30 pm–2:00 pm | NE ASAS/ADSA Business Meeting and Awards Luncheon  
12:30 pm–2:00 pm | ADSA DF Division Milk Proteins and Enzyme Committee  
12:30 pm–2:00 pm | ADSA-SAD Award and Club Photos  
12:30 pm–2:00 pm | ADSA DF Division Program Planning Lunch  
12:30 pm–2:00 pm | ADSA-SAD Committee Meeting—Old and New Officers and Advisors  
12:30 pm–2:00 pm | ASAS JAS Forum (Division/Associate Editors and Authors)  
2:00 pm–3:00 pm | The ASAS Open Forum: Échangez vos idées à Montréal  
5:00 pm–6:00 pm | CSAS Editorial Board Meeting  
5:00 pm–6:00 pm | USDA-ARS Staff Update Session  
5:00 pm–6:30 pm | ADSA Award Donor Dinner  
7:00 pm–8:00 pm | ADSA Awards Program  
8:15 pm–9:30 pm | 2009 ADSA-CSAS-ASAS Ice Cream Social

Wednesday, July 15

6:30 am–8:00 am | Purdue University Breakfast  
7:00 am–5:15 pm | Registration Open  
7:30 am–9:30 am | Poster Presentations  
8:00 am–5:00 pm | Job Resource Center  
8:00 am–2:00 pm | Commercial Exhibits Open  
8:00 am–5:00 pm | Hospitality Lounge Open  
9:30 am–10:30 am | ASAS Business Meeting  
10:00 am–10:30 am | ADSA Business Meeting  
10:30 am–5:00 pm | Scientific Sessions  
10:30 am–5:00 pm | Mixed Models Workshop  
11:30 am–12:30 pm | ADSA-ASAS Joint Executive Committee Meeting  
12:30 pm–2:00 pm | ADSA Board of Directors Meeting  
12:30 pm–2:30 pm | Feed Analysis Consortium  
1:00 pm–2:30 pm | ASAS Board of Directors Meeting  
2:00 pm–4:00 pm | ARPAS Exam  
2:00 pm–5:00 pm | Commercial Exhibits Dismantle  
4:30 pm–6:00 pm | 2009 Closing Reception  
6:00 pm–8:30 pm | CSREES Animal Growth & Nutrition Utilization Annual Investigator Reception  
7:00 pm–9:00 pm | CSREES Animal Growth & Nutrition Utilization Investigator Meeting

Thursday, July 16

7:30 am–5:00 pm | CSREES Animal Growth and Nutrition Utilization Investigator Meeting  
8:00 am–5:00 pm | Writers’ Workshop  
8:00 am–1:00 pm | Registration Open  
8:30 am–10:30 am | ADSA-ASAS Joint Executive Committee Breakfast  
8:30 am–11:30 am | Scientific Sessions  
8:30 am–11:30 am | Mixed Models Workshop
SA Student Affiliate Division Program
SAD Special Events

Saturday, July 11

**Student Dairy Tour**
11:30 am – 3:30 pm
**Bus departs from the Holiday Inn Select**
Tours of nearby dairy farms are planned for Saturday afternoon. Learn about dairying in the region and see different methods of operation. Tour departs from the student headquarters hotel, the Holiday Inn Select.

**Student St. Lawrence River Cruise**
4:30 pm – 5:30 pm
Board the Bateau-Mouche for a scenic cruise along the beautiful St. Lawrence River. Enjoy refreshments, learn about the city of Montréal, and get acquainted with your student colleagues.

**Student Informal Mixer: Pub St. Paul**
7:00 pm
*Meet in the lobby of the Holiday Inn to walk as a group*
Meet up with old and new acquaintances at the student informal mixer at Pub St. Paul. Within easy walking distance of the student hotel, the Pub St. Paul will be a great meeting place for food, fun, and refreshments. Then, at 10:00 pm, we will make our way back to the waterfront and find a seat in the grass to enjoy a breathtaking fireworks display during the Montréal International Fireworks Competition.

Sunday, July 12

**SAD Undergraduate Midday Mixer & Pizza Party**
12:00 pm – 1:00 pm
**Convention Center, Room 522**
Join your fellow dairy clubs for a fun hour of getting reacquainted and making new friends. Lunch includes pizza, salad, and drinks. Registration is limited to undergraduate students and advisors.

**SAD-Dairy Quiz Bowl Final Round**
5:30 pm – 6:00 pm
**Convention Center, Room 511ad**
On Sunday, university teams from across North America will compete in the ADSA Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The Student Affiliate Division (SAD) invites you to join them for the excitement of the final round of competition as the top two schools go head-to-head for the title of 2009 Dairy Quiz Bowl Winning Team.

Monday, July 13

**Student Informal Mixer: Montréal on Foot**
7:00 pm
*No ticket required, meet in the lobby of the Holiday Inn to walk as a group*
Students will explore the city of Montréal on foot. Known as the city for walkers, Montréal is a unique and fascinating city offering exciting entertainment and cultural diversity—a place where people from all around the globe come together to enjoy a Canadian city with a European flair. After a long day of competitions, this will be a great chance for students to mingle, relax, and just enjoy what promises to be a fun evening on the town in scenic Montréal.
Tuesday, July 14

SAD Career Roundtable
9:30 am–11:00 am
Convention Center, Room 520ad
Students will have the opportunity to visit with industry professionals representing various facets of the animal agriculture industry. They will learn about careers in the industry, get useful tips on planning for their careers, and much more. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes. Students should also plan time to visit industry reps in the exhibit hall for information about internships and job opportunities.

SAD Awards Luncheon
11:45 am–2:00 pm
Convention Center, Room 520cf
Plan to attend this year’s SAD awards luncheon. The afternoon will be capped with the presentation of student awards and announcement of new SAD officers. Both students and professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.

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

Saturday, July 11

11:30 am–3:30 pm  Student Dairy Tour  Meet in the Holiday Inn lobby
3:00 pm–5:00 pm  Registration Open  (preregistered, badge and material pick-up only)
4:30 pm–5:30 pm  Student St. Lawrence River Cruise
7:00 pm  Student Informal Mixer: Pub St. Paul

Sunday, July 12

7:00 am–7:00 pm  Registration Open  Convention Center, 200 level, Viger Hall
10:00 am–11:00 am  SAD Officers and Advisor Meeting  Convention Center, 511a
11:00 am–12:00 pm  SAD Quiz Bowl Officials Meeting  Convention Center, 511d
11:30 am–12:00 pm  SAD Quiz Bowl Seating Test  Convention Center, 522
12:00 pm–1:00 pm  SAD Undergraduate Midday Mixer  Convention Center, 511a
1:00 pm–5:00 pm  ADSA-SAD Quiz Bowl Seating/Preliminary Rounds  Convention Center, 511a and 511d
7:00 pm–8:00 pm  2009 ADSA-CSAS-ASAS Opening Session  Convention Center, 517ab
8:00 pm–10:00 pm  2009 ADSA-CSAS-ASAS Opening Reception  Convention Center, 517cd

Monday, July 13

6:30 am–5:15 pm  Registration Open  Convention Center, 200 level, Viger Hall
7:00 am–8:15 am  ADSA-SAD Exhibit Set-Up  Convention Center, Exhibit Hall 220cde
7:30 am–9:30 am  Poster Presentations  Convention Center, Exhibit Hall 220cde
8:00 am–6:00 pm  Commercial Exhibits & ADSA-SAD Exhibits Open  Convention Center, Exhibit Hall 220cde
8:30 am–9:15 am  ADSA-SAD Business Meeting  Convention Center, 520ad
9:30 am–10:30 am  ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports  Convention Center, 520f
9:30 am–10:30 am  ADSA-SAD Interviews for Outstanding Student and Advisor Awards  Convention Center, 520c
9:30 am–10:45 am  ADSA-SAD Activities Symposium  Convention Center, 520be
9:30 am–5:00 pm  Scientific Sessions  Convention Center
11:00 am–5:00 pm ADSA-SAD Undergraduate Paper Presentations Convention Center, 520ad and 520be
4:00 pm–6:00 pm Exhibitor Reception Convention Center, Exhibit Hall 220cde
5:00 pm–6:00 pm ADSA Town Hall Meeting Convention Center, 512ae
7:00 pm SAD Informal Mixer: Montréal On Foot Meet in the Holiday Inn lobby

Tuesday, July 14

7:00 am–5:15 pm Registration Open Convention Center, 200 level, Viger Hall
7:30 am–9:30 am Poster Presentations Convention Center, Exhibit Hall 220cde
8:00 am–5:00 pm Commercial Exhibits & ADSA-SAD Exhibits Open Convention Center, Exhibit Hall 220cde
8:30 am–9:30 am ADSA-Student Business Meeting—Elec. of Officers Convention Center, 520ad
9:30 am–5:00 pm Scientific Sessions Convention Center
9:30 am–11:00 am ADSA-SAD Student Career Roundtable Convention Center, 522
11:45 am–2:00 pm ADSA-SAD Awards Luncheon Convention Center, 520cf
2:00 pm–3:00 pm ADSA-SAD Award and Club Photos Convention Center, 520be
2:30 pm–3:30 pm ADSA-SAD Committee Meeting—Old and New Officers and Advisors Convention Center, 520ad
7:00 pm–8:00 pm ADSA Awards Program Convention Center, 517a
8:15 pm–9:30 pm 2009 ADSA-CSAS-ASAS Ice Cream Social Convention Center, 710

Wednesday, July 15

7:00 am–5:15 pm Registration Open Convention Center, 200 level, Viger Hall
7:30 am–9:30 am Poster Presentations Convention Center, Exhibit Hall 220cde
8:00 am–2:00 pm Commercial Exhibits Open Convention Center, Exhibit Hall 220cde
10:30 am–5:00 pm Scientific Sessions Convention Center
2:00 pm–5:00 pm Commercial Exhibits Dismantle Convention Center, Exhibit Hall 220cde
4:30 pm–6:00 pm 2009 Closing Reception Convention Center, 522

Thursday, July 16

8:00 am–1:00 pm Registration Open Convention Center, 200 level, Viger Hall
8:30 am–11:30 am Scientific Sessions Convention Center
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Sunday, July 12
5:00 pm – 6:00 pm ADSA Dairy Foods Division Council Meeting, Convention Center, Room 523a

Monday, July 13
7:30 am – 9:30 am Posters: Dairy Foods: Dairy Foods/Cheese, Convention Center, Room 220cde
9:30 am – 12:15 pm Graduate Student Paper Competition: National ADSA Dairy Foods, Convention Center, Room 510ac
1:30 pm – 5:00 pm SYMPOSIUM: Dairy Foods: Milk Protein Fractionation Symposium, Convention Center, Room 513cd

Tuesday, July 14
7:30 am – 9:30 am Posters: Dairy Foods: Dairy Foods Processing/Cheese/Dairy Micro, Convention Center, Room 220cde
10:30 am – 11:30 am Dairy Foods: Danisco International Dairy Science Award Lecture, Convention Center, Room 513ef
11:30 am – 12:30 pm ADSA Dairy Foods Division Business Meeting, Convention Center, Room 513ef
12:30 pm – 2:00 pm ADSA DF Division Milk Proteins & Enzyme Committee, Convention Center, Room 523a
12:30 pm – 2:00 pm ADSA DF Division Program Planning Lunch, Convention Center, Room 523b
2:00 pm – 4:45 pm Dairy Foods: Dairy Foods 1, Convention Center, Room 513cd
2:00 pm – 4:45 pm Dairy Foods: Dairy Foods/Cheese, Convention Center, Room 513ef

Wednesday, July 15
7:30 am – 9:30 am Posters: Dairy Foods: Dairy Products/Chemistry/Enzyme, Convention Center, Room 220cde
10:30 am – 12:30 pm Dairy Foods: Dairy Foods/Microbiology, Convention Center, Room 513cd
2:00 pm – 4:30 pm SYMPOSIUM: Dairy Foods: Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods, Convention Center, Room 513ef
2:00 pm – 4:30 pm SYMPOSIUM: Dairy Foods: Milk Protein and Enzymes Symposium, Convention Center, Room 513cd

Thursday, July 16
8:30 am – 10:45 am Dairy Foods: Dairy Foods Processing/Enzymes, Convention Center, Room 513cd
**Sunday, July 12**

**SYMPOSIA AND ORAL SESSIONS**

Triennial Reproduction Symposium  
Challenges and Opportunities Facing Livestock Reproduction in the 21st Century

**Session 1: Global perspectives on animal health and livestock reproduction**

**Chair:** Rob Knox, University of Illinois  
**Sponsors:** ASAS Foundation, EAAP, Lauderdale Appreciation Club, Intervet/Schering-Plough Animal Health, and Pfizer Animal Health

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<th>Presenters</th>
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<tr>
<td>8:00 AM</td>
<td>Welcome</td>
<td>Welcome and Introductions</td>
<td></td>
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<tr>
<td>8:05 AM</td>
<td>1</td>
<td>A global perspective on the evolution of animal agriculture.</td>
<td>R. D. Green*, Pfizer Animal Genetics, Sutton, NE.</td>
</tr>
<tr>
<td>8:50 AM</td>
<td>2</td>
<td>Impact of animal health on endocrinology and reproduction in dairy cows.</td>
<td>D. Wolfenson*, Y. Lavon¹, R. Meidan¹, Z. Roth¹, and G. Leitner²; ¹The Hebrew University, Rehovot, Israel, ²The Veterinary Institute, Bet-Dagan, Israel.</td>
</tr>
<tr>
<td>9:35 AM</td>
<td>3</td>
<td>Challenges in matching the physiology and productivity of the modern commercial sow.</td>
<td>G. R. Foxcroft*, University of Alberta, Edmonton, Alberta, Canada.</td>
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<tr>
<td>10:20 AM</td>
<td>Break</td>
<td></td>
<td></td>
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<tr>
<td>10:50 AM</td>
<td>4</td>
<td>The impact of amino acid nutrition on pregnancy outcome in pigs: mechanisms and implications for swine production.</td>
<td>G. Wu¹, F. W. Bazer¹, G. A. Johnson¹, S. W. Kim², and T. E. Spencer²; ¹Texas A&amp;M University, College Station, ²North Carolina State University, Raleigh.</td>
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<tr>
<td>11:35 AM</td>
<td>Caseida Award Program</td>
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**Session 2: Genetic influences on animal reproduction**

**Chair:** Rob Knox, University of Illinois  
**Sponsors:** ASAS Foundation, Lauderdale Appreciation Club, Intervet/Schering-Plough Animal Health, and Pfizer Animal Health

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<tr>
<td>2:15 PM</td>
<td>6</td>
<td>Application of molecular and genetic tools for identification of reproductive traits to create and establish commercial lines of swine.</td>
<td>T. Rathje*, Danbred North America, Columbus, NE.</td>
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<tr>
<td>3:00 PM</td>
<td>Break</td>
<td></td>
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<tr>
<td>3:30 PM</td>
<td>7</td>
<td>Epigenetics: A mechanism of adaptation to perinatal events.</td>
<td>R. Lane*, R. McKnight, L. Joss-Moore, Q. Fu, and X. Ke, Division of Neonatology, University of Utah Department of Pediatrics, Salt Lake City.</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>8</td>
<td>Impact of dam nutrition on subsequent growth and reproduction in beef heifers.</td>
<td>R. N. Funston*, University of Nebraska, West Central Research and Extension Center, North Platte.</td>
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**OTHER EVENTS**

**Late Breaking/Original Research**  
**Sponsors:** Monsanto and Lallemand

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<tr>
<td>3:00 PM</td>
<td>510ac</td>
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</table>
Monday, July 13

POSTER PRESENTATIONS

Animal Behavior and Well-Being

M1 Validation of footprint analysis to describe sow gait. J. Grégoire*, J. Déom, C. Corriveau, J. Grégoire, and R. Bergeron, 1AAFC, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada; 2University Laval, Ste Foy, QC, Canada; 3University of Guelph, Alfred, ON, Canada; 4University of Montreal, Faculty of Veterinary Medicine, St Hyacinthe, QC, Canada; 5INRA–SENAH, St-Gilles, France.

M2 Changes in temperament score as a result of handling do not affect F. Zhou, Y. Gao, Y. Yin*, and R. Huang, Key Laboratory for Agro-ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China.


M4 Seasonal cow behavior in a large dairy herd in central Iran. R. Kowsar, A. Nikkhah*, M. Khorvash, M. Alikhani, and G. R. Ghorbani, 1Isfahan University of Technology, Isfahan, Iran; 2Zanjan University, Zanjan, Iran.

M5 Automated recording of sow posture and locomotion using accelerometers. N. Devillers*, J. Déom, C. Corriveau, J. Grégoire, and R. Bergeron, 1AAFC, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada; 2University of Sherbrooke, Sherbrooke, QC, Canada; 3University Laval, Ste Foy, QC, Canada; 4University of Guelph, Alfred, ON, Canada.


M7 Comparison of slaughter methods with or without previous stunning on animal welfare and bleeding efficiency in bulls. J. E. Gomes Neves, M. J. R. Paranhos da Costa, R. Roça, N. G. Gregory, and L. Faucitano*, 1Faculdade de Ciencias Agrárias e Veterinárias, Universidade Estadual Paulista Julio de Mesquita Filho, Jaboticabal, Sao Paulo, Brazil; 2Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista Julio de Mesquita Filho, Botucatu, Sao Paulo, Brazil; 3Royal Veterinary College, London, UK; 4Agriculture and Agri-Food Canada, Sherbrooke, Canada.

M8 Water access and the physiological well-being of Holstein slaughter cows. K. D. Vogel*, J. R. Claus, T. Grandin, G. R. Oetzel, and D. M. Schaefer, 1Colorado State University, Fort Collins; 2University of Wisconsin, Madison; 3University of Wisconsin, Madison.

M9 Changes in temperament score as a result of handling do not affect voluntary feed intake. T. D. Maddock*, J. L. Foster, M. A. Elzo, and G. C. Lamb, 1North Florida Research and Education Center, Marianna, 2University of Florida, Gainesville.

M10 Effect of group change on lying time and milk yield of dairy cattle. I. Guasch* and A. Bach, 1IRTA–Ruminant Production, Caldes de Montbui, Spain; 2ICREA, Barcelona, Spain.

M11 Effect of rubber flooring in a freestall dairy barn on cow behavior and milk production. J. Pempek* and N. Botheras, The Ohio State University, Columbus.

M12 Effect of feed bin stocking density on the feeding and standing behavior of postpartum dairy cows. P. D. Krawczel*, D. M. Weary, R. J. Grant, and M. A. G. von Keyserlingk, 1William H. Miner Agricultural Research Institute, Chazy, NY; 2The University of Vermont, Burlington; 3University of British Columbia, Vancouver, BC, Canada.


M15 Flavors affect the feeding behaviour of ewes fed two unpalatable feeds. A. Mereu, V. Giovanetti, G. Molle, I. Iphraguerre, and A. Cannas, 1Dipartimento di Scienze Zootecniche, University of Sassari, Sassari, Sardinia, Italy; 2Agris Sardegna, DiRPA, Olmedo, Sardinia, Italy; 3LUCTA SA, Barcelona, Spain.

M16 When and where do cows defecate? M. Villhetta Robichaud*, A. M. de Passillé, and J. Rushen, 1Université Laval, Québec, Québec, Canada; 2Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada.
Animal Health
Stress, Respiratory Disease, Small Ruminants

M17 Effects of dehydration and rehydration on the thermoregulation of heat stressed Angus steers. B. Scharf*, L. E. Wax, T. J. Evans, and D. E. Spiers, University of Missouri, Columbia.

M18 Heat stress augments plasma tyrosine-nitrated proteins and lactate-pyruvate ratio after repeated endotoxin (LPS) challenge in steers. T. Elsasser*1, R. Rhoads1, S. Kahl, R. Collier2, L. Baumgard2, C. Li, and T. Caperna1, 1USDA-ARS, Beltsville, MD, 2University of Arizona, Tucson.


M21 Effects of bluetongue virus infection on sperm quality in German test-bulls. K. Kemmerling1, D. Stryet2, U. Mueller2, U. Janowitz2, and H. Sauerwein*1, 1Institute of Animal Science, Physiology and Hygiene Group, University of Bonn, North-Rhine-Westphalia, Germany, 2Rinder-Union-West, Borken, North-Rhine-Westphalia, Germany.

M22 The use of infrared thermography in the non invasive, automated detection of calves displaying bovine respiratory disease. A. L. Schaefer*1, C. Bench1, J. Basarab1, N. Cook1, E. Okine1, J. Colyn1, B. Chabot1, D. Froehlich1, L. Holt-Klemic1, T. Liu1, and P. Lepage1, 1Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada, 2University of Alberta, Edmonton, Alberta, Canada, 3Alberta Agriculture, Lacombe, Alberta, Canada.

M23 Orbital thermal topography in calves with bovine respiratory disease. A. L. Schaefer1, C. Bench1, N. Cook1, J. Colyn1, T. Liu1, E. Okine1, M. Stewart1, and J. Webster1, 1Agriculture and Agri-Food Canada, Lacombe, Alberta, Canada, 2University of Alberta, Edmonton, Alberta, Canada, 3Alberta Agriculture, Lacombe, Alberta, Canada, 4AgResearch, Hamilton, New Zealand.

M24 Relationship between ex vivo neutrophil function in response to an enteropathogenic Escherichia coli and measures of health and performance of dairy calves. L. G. D. Mendonça1, G. Lopes Jr.1, M. A. Ballou2, and R. C. Chebel1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

M25 Replacing milk proteins with nucleotides in milk replacers for pre-weaned dairy calves. J. A. Elizondo-Salazar*1,2, C. M. Jones1, R. F. Leuer1, and A. J. Heinrichs1, 1The Pennsylvania State University, University Park, 2‘Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias. Universidad de Costa Rica.


M27 Predictive measures of fetal distress in calves during delivery. K. E. Hard* and H. D. Tyler, Iowa State University, Ames.

M28 Automated measurement of feeding behavior to detect illness in milk-fed calves. F. T. Borderas1,3, J. Rushen2, M. A. G. von Keyserlingk1, and A. M. de Passillé2, 1University of British Columbia, Vancouver, BC, Canada, 2Agriculture and Agri-Food Canada, Agassiz, BC, Canada, 3Universidad Autónoma Metropolitana-Xochimilco, Coyoacán, Mexico.


M30 Effect of vitamin E supplementation on naturally acquired parasite infection in lambs. C. E. MacGlaflin1, A. M. Zajac1, K. A. Rego1, C. S. Petersson-Wolfe1, and K. H. Petersson1, 1University of Rhode Island, Kingston, 2Virginia Tech, Blacksburg.


M33 Effect of calf-specific Bacillus on health and growth of young calves. D. Wood*, J. Sowinski, and R. Blome, Animix, Juneau, WI.

M34 Feeding colostrum with an esophageal feeder does not reduce IgG absorption in neonatal dairy heifer calves. J. A. Elizondo-Salazar*1,2 and A. J. Heinrichs1, 1The Pennsylvania State University, University Park, 2‘Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias. Universidad de Costa Rica.

M35 High bacterial concentration in colostrum does not interfere with IgG absorption in neonatal dairy bull calves. J. A. Elizondo-Salazar*1,2 and A. J. Heinrichs1, 1The Pennsylvania State University, University Park, 2‘Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias. Universidad de Costa Rica.
A abrupt weaning alters leukocyte subsets and functional activity of granulocytes in beef calves. E. M. Lynch4,5, B. A. Earley1, M. McGee1, and S. Doyle2, 1Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland, 2Department of Biology, National University of Ireland, Maynooth, Co Kildare, 3Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland.

Bioethics


Breeding and Genetics

Breeding, Poultry, and Genetics of Disease

Milk production and composition during the first 4 months of lactation of Hereford (HH), Angus (AA) and F1 crosses grazing on native pastures Uruguay. A. Espasandin4, A. Casal2, A. Graña2, V. Gutiérrez2, and M. Carriquiry1, 1School of Agronomy, UDELAR, Montevideo, Uruguay, 2School of Veterinary, UDELAR, Montevideo, Uruguay.

Genetic relationships of monounsaturated fatty acid with image analysis traits in Japanese Black cattle. Y. Nakahashi*, T. Kato2, M. Nakamachi1, N. Murasawa1, Y. Hamasaki1, S. Hidaka1, and K. Kuchida1, 1Obihiro University of A & VM, Obihiro, Hokkaido, Japan, 2Tokachi Federation of Agricultural Cooperatives, Obihiro, Hokkaido, Japan.

Genetic analysis of growth traits considering the average numerator relationship matrix and a hierarchical Bayes model for Nellore cattle. L. Shiotsuki*, F. F. Cardoso2, J. A. V. Silva II3, and L. G. Albuquerque1, 1Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil, 2Embrapa Pecuária Sul, Bage, Rio Grande do Sul, Brazil, 3Alta Genetics, Uberaba, Minas Gerais, Brazil.

Estimates of genetic parameters using random regression on B-spline functions for weights from birth to mature in Nellore cattle. A. A. Boligon*, L. G. Albuquerque1, M. E. Z. Mercadante1, and R. B. Lobo1, 1Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil, 2Instituto de Zootecnia, Estação Experimental de Zootecnia de Sertãozinho, Sertãozinho, São Paulo, Brazil.

Genetic analysis of growth traits considering the average numerator relationship matrix and a hierarchical Bayes model for Nellore cattle. L. Shiotsuki*, F. F. Cardoso2, J. A. V. Silva II3, and L. G. Albuquerque1, 1Universidade Estadual Paulista, Jaboticabal, Sao Paulo, Brazil, 2Embrapa Pecuária Sul, Bage, Rio Grande do Sul, Brazil, 3Alta Genetics, Uberaba, Minas Gerais, Brazil.

Estimation of genetic parameters for weights, scrotal circumference and testicular volume in Nellore cattle. A. A. Boligon*, L. G. Albuquerque1, J. A. V. Silva3, R. C. Sesana1, and J. B. Junqueira1, 1Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil, 2Alta Genetics Brasil LTDA, Uberaba, Minas Gerais, Brazil.

Heritabilities, genetic correlations, and genetic trends for age at first calving and calving intervals in a Colombian Blanco Orejinegro-Angus-Zebu cattle population. O. D. Vergara1, M. A. Elzo4, and M. F. Cerón-Muñoz1, 1University of Antioquia, Medellín, Colombia, 2University of Florida, Gainesville, 3University of Córdoba, Montería, Colombia.

Genetic parameters and genetic trends for pre and postweaning growth in a Colombian Blanco Orejinegro-Romosinuano-Angus-Zebu cattle population. O. D. Vergara1, M. A. Elzo4, and M. F. Cerón-Muñoz1, 1University of Cordoba, Monteria, Colombia, 2University of Florida, Gainesville, 3University of Antioquia, Medellín, Colombia.

Genotype by environment interaction in Nellore cattle for 450 day weight. M. G. Dib*, I. D. P. S. Díaz2, F. R. de Araujo Neto2, H. N. de Oliveira1,2, R. B. Lobo3, and L. A. F. Bezerra2, 1FMVZ-UNESP, Botucatu, SP, Brazil, 2FCAV-UNESP, Jaboticabal, SP, Brazil, 3FMRP-USP, Ribeirão Preto, SP, Brazil.

Random regression analyses using B-spline functions to model growth from birth to adult age in Canchim cattle. F. Baldi*, L. G. Albuquerque1, and M. M. Alencar2, 1Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil, 2Embrapa Pecuária Sudeste, São Carlos (SP), Brazil.

Genetic parameter estimates for growth traits in Canchim cattle using random regression models. F. Baldi*, M. M Alencar2, and L. G. Albuquerque1, 1Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, São Paulo, Brazil, 2Embrapa Pecuária Sudeste, São Carlos (SP), Brazil.

Performance group in G×E study for genetic evaluation of growth in Brazilian Nellore. L. O. C. Silva1, S. Tsuruta*, J. K. Bertrand2, A. Gondo1, L. A. Josahkan1, P. R. C. Nobre1, and A. N. Rosa1, 1University of Georgia, Athens, 2EMBRAPA, Campo Grande, MS, Brazil, 3CNPq, Brasilia, DF, Brazil, 4ABCZ, Uberaba, MG, Brazil.

Residual feed intake and reproductive performance of heifers sired by high or low RFI EBV bulls. J. M. Bormann*, D. W. Moser1, T. T. Marston1, and K. C. Olson1, 1Kansas State University, Manhattan, 2University of Nebraska, Lincoln.

Association between carcass and meat quality traits, and phenotypic residual feed intake, breed composition, and temperament in Angus-Brahman multibreed cattle. M. A. Elzo*, D. D. Johnson1, D. G. Riley2, G. R. Hansen1, G. C. Lamb1, R. O. Myer3, J. G. Wadlin1, and J. D. Driver1, 1University of Florida, Gainesville, 2USDA-ARS STARS, Brooksville, FL, 3North Carolina State University, Plymouth, 4North Florida Research and Education Center, Marianna, FL.
M51 Temperature and humidity as criteria of between states differences in beef cattle growth rate. M. Lukaszewicz\textsuperscript{1,2}, J. L. Williams\textsuperscript{1,2}, J. K. Bertrand\textsuperscript{1}, and I. Misztal\textsuperscript{1}, \textsuperscript{1}University of Georgia, Athens, \textsuperscript{2}Polish Academy of Sciences, Laszczywiec, Poland.

M52 Multiple-trait genetic analysis of weight at week 8, age at sexual maturity and initial egg weight in Iranian indigenous chickens. H. Farhangfar*, S. M. Hosseini, and M. E. Navidizadeh, Birjand University, Birjand, Iran.

M53 Comparative analyses of some growth traits of straight-runs and separate sex reared broilers. O. T. F. Abanikann\textsuperscript{1}, A. O. Leigh\textsuperscript{1}, M. O. Akinsola\textsuperscript{1}, M. Orunmuyi\textsuperscript{1}, O. N. Coker\textsuperscript{1}, and K. A. Binuyo\textsuperscript{1,2}, \textsuperscript{1}Lagos State University, Ojo - Lagos, Nigeria, \textsuperscript{2}Ahmadu Bello University, Zaria, Kaduna State, Nigeria, \textsuperscript{3}S & D Farms Nigeria Limited, Odeda, Ogun State, Nigeria.

M54 Analysis of androgen receptor gene in dairy bulls. C. Foresta\textsuperscript{2}, A. Garolla\textsuperscript{2}, D. Zuccarello\textsuperscript{2}, and M. Cassandro\textsuperscript{1,*}, \textsuperscript{1}University of Padova, Agripolis, Legnaro (PD), Italy, \textsuperscript{2}University of Padova, Padova, Italy.

M55 Evidence for a genetic contribution to bovine viral diarrhea vaccine response in beef calves. X. Fang\textsuperscript{*}, T. A. Henrickson\textsuperscript{1}, C. Maltecca\textsuperscript{2}, and M. G. Gonda\textsuperscript{1}, \textsuperscript{1}South Dakota State University, Brookings, \textsuperscript{2}North Carolina State University, Raleigh.

M56 Estimation of genetic parameters and transmitting ability for Minnesota Johne’s milk ELISA test. S. A. Attalla\textsuperscript{1,3,*}, A. J. Seykora\textsuperscript{1}, J. B. Cole\textsuperscript{2}, and B. J. Heins\textsuperscript{1}, \textsuperscript{1}University of Minnesota, Saint Paul, \textsuperscript{2}Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, \textsuperscript{3}Cairo University, Giza, Egypt.

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**Dairy Foods**

**Dairy Foods/Cheese**

M57 Relationship between base and process cheese characteristics. A. Hassan* and N. Nigam, South Dakota State University, Brookings.

M58 Fate of aflatoxin M\textsubscript{1} during manufacture and brining of feta cheese. M. M. Motawee\textsuperscript{*} and D. J. McMahon\textsuperscript{2}, \textsuperscript{1}National Organization for Drug Control and Research, Cairo, Egypt, \textsuperscript{2}Utah State University, Logan.

M59 The ELISA test to determine the k-casein B contents in bulk milk samples: Practical use. A. Rossoni\textsuperscript{*}, M. Malacarne\textsuperscript{2}, C. Nicoletti\textsuperscript{1}, and A. Summer\textsuperscript{1,*}, \textsuperscript{1}ANARB - Italian Brown Cattle Breeders’ Association, Bussolengo, Verona, Italy, \textsuperscript{2}Dip. Produzioni Animali B.V.Q.S.A Università degli Studi di Parma, Parma, Italy.

M60 Aroma profile characterization of traditional Algerian Bouhezza cheese. S. Carpino\textsuperscript{*}, T. Rapisarda\textsuperscript{2}, G. Belvedere\textsuperscript{1}, and G. Licitra\textsuperscript{1,2}, \textsuperscript{1,CoRFiLaC, Regione Siciliana, Ragusa, Italy, \textsuperscript{2}D.A.C.P.A. University of Catania, Italy.

M61 Molecular characterization of Algerian cheese Bouhezza by PCR-TTGE. C. Pediliggieri\textsuperscript{1}, S. Carpino\textsuperscript{*}, and G. Licitra\textsuperscript{1,2}, \textsuperscript{1,CoRFiLaC, Regione Siciliana, Ragusa, Italy, \textsuperscript{2}D.A.C.P.A. University of Catania, Italy.

M62 Characterization of bacterial ecosystem in Pecorino Siciliano cheese produced in different areas of Sicily. C. Pediliggieri\textsuperscript{1}, S. Carpino\textsuperscript{*}, and G. Licitra\textsuperscript{1,3}, \textsuperscript{1,CoRFiLaC, Regione Siciliana, Ragusa, Italy, \textsuperscript{2}D.A.C.P.A. University of Catania, Italy.

M63 Persistency of conjugated linoleic acid and vaccenic acid on Tybo cow cheese. G. A. Gagliostro\textsuperscript{*}, M. Martinez\textsuperscript{2}, V. I. Cejas\textsuperscript{3}, M. A. Rodríguez\textsuperscript{2}, and M. Balán\textsuperscript{2}, \textsuperscript{1}Instituto Nacional de Tecnología Agropecuaria, Balcarce, Buenos Aires, Argentina, \textsuperscript{2}Instituto Nacional de Tecnología Agropecuaria, Salta, Argentina, \textsuperscript{3}Instituto Nacional de Tecnología Industrial, PTM Miglœte, Buenos Aires, Argentina, \textsuperscript{1}Agriculture, Argentina.


M66 Effect of cream cheese made from freeze-dried milk powder on physicochemical properties. S. H. Kim\textsuperscript{1}, S. Y. Lee\textsuperscript{1}, J. Ahn\textsuperscript{1}, and H. S. Kwak\textsuperscript{*}, \textsuperscript{1}Sejong University, Seoul, Korea, \textsuperscript{2}Jungwon University, Chungbuk, Korea.

M67 Optimization of recovery of key Cheddar cheese flavor compounds from full fat and reduced fat Cheddar cheeses. D. M. Watson\textsuperscript{*}, R. E. Miracle, and M. A. Drake, North Carolina State University, Raleigh.

M68 The influence of sodium chloride on flavor of natural Cheddar cheese. M. A. Drake\textsuperscript{*}, R. E. Miracle\textsuperscript{1}, and D. J. McMahon\textsuperscript{2}, \textsuperscript{1}North Carolina State University, Raleigh, \textsuperscript{2}Utah State University, Logan.

M69 Automatic detection of microstructural features using a statistical image processing method. G. Impoco\textsuperscript{1}, L. Tuminello\textsuperscript{2}, N. Fucà\textsuperscript{1}, M. Caccamo\textsuperscript{1,2,*}, and G. Licitra\textsuperscript{1,2}, \textsuperscript{1,CoRFiLaC, Ragusa, Italy, \textsuperscript{2}D.A.C.P.A., University of Catania, Catania, Italy.

M70 Lactic acid bacteria enhance levels of conjugated linoleic acid in Cheddar cheese. A. J. Pandit, S. K. Anand\textsuperscript{*}, A. N. Hassan, and K. F. Kalscheur, South Dakota State University, Brookings.
M71 Effect of aging on the rheology of full fat and low fat Cheddar-like caprine cheese. D. L. Van Hekken*1, Y. W. Park, and M. H. Tunick1, 1Dairy Processing and Products Research Unit, Agricultural Research Service, Wyndmoor, PA, 2Agricultural Research Station, Fort Valley University, Fort Valley, GA.

M72 Effect of renneting pH on calcium balance in cheese making process. N. Remillard* and M. Britten, Food Research and Development Centre, Agriculture and Agri-food Canada, St-Hyacinthe, QC, Canada.

M73 Denaturation of proteins measured in liquid whey. M. Allen* and P. Tong, California Polytechnic State University, San Luis Obispo.


M76 Production of nisin-containing whey protein concentrate. H. Abd El-aal1, R. Dave1, A. Khattab1, and A. Hassan*, 1South Dakota State University, Brookings, 2Alexandria University, Alexandria, Egypt.

M77 Bovine milk based infant formula promote the growth and acid production of bifidobacteria. K. Mohamedali* and S. A. Ibrahim, North Carolina A&T State University, Greensboro.

M78 Induction of α and β galactosidases from Lactobacillus reuteri by different metal ions. A. Y. Alazzezh*, S. A. Ibrahim1, D. Song1, A. Shahbazi1, and A. A. AbuGhazaleh1, 1North Carolina A&T State University, Greensboro, 2Southern Illinois University, Carbondale.

M79 Immobilization of Lactobacillus acidophilus in apple pieces (Pyrus malus) and mamey sapote (Pouteria sapota) for whey fermentation. M. E. Yañe-Z-Villar1, E. Paz-Gamoba*, A. Perez-Silva1, H. S. Garcia*, and M. Montero-Lagunes, 1Instituto Tecnologico de Tuxtepec, Tuxtepec, Oax, Mexico, 2Instituto Tecnologico de Veracruz, Veracruz, Ver, Mexico, 3INIFAP Campo Experimental, Veracruz, Ver, Mexico.

M80 A simple on-farm technique for early detection of foreign substances in milk. M. H. Hathurusinghe*, A. Alazzezh1, A. Shahbazi1, S. A. Ibrahim1, and A. A. AbuGhazaleh1, 1North Carolina A&T State University, Greensboro, 2Southern Illinois University, Carbondale.

M81 Fatty acid composition in ewe’s milk produced in lowland, hill and highland areas of Sardinia. M. G. Manca, F. Puggioni, R. Boe, R. Rubattu, G. Battacone*, and A. Nudda, Dipartimento di Scienze Zootecniche, University of Sassari, Italy.


M86 Phylogenetic analysis of dairy Penicillium rDNA. G. Petit* and S. Labrie, Université Laval, Québec, Canada.

M87 Effects of culture conditions on the growth and autoaggregation ability of bifidobacteria and Lactobacillus reuteri. O. A. Hassan*, S. A. Ibrahim1, A. A. AbuGhazaleh1, A. Shahbazi1, and Y. Murad*, 1North Carolina A&T State University, Greensboro, 2Southern Illinois University, Carbondale, 3National Research Council-Canada, Ottawa, Canada.

M88 80% whey (WPC) and serum protein (SPC) concentrate and 95% serum protein (SP) reduced micellar casein concentrate (MCC): Production and composition. J. Zulewska*, D. M. Barbano1, M. Newbold1, M. Drake1, E. A. Foegeding1, And C. Moraru1, 1Cornell University, Ithaca, NY, 2University Of Warmia And Mazury, Olsztyn, Poland, 3North Carolina State University, Raleigh.

Forages and Pastures

Forage Composition, Analysis and Utilization

M89 Utilizing near infrared (NIR) spectroscopy to predict carbohydrates (sugars) in forages. J. Horst*1,2 and G. Ayangbile1,2, 1Agri-King Inc., Fulton, IL, 2Analab, Fulton, IL.


Condensed tannins from purple prairie clover inhibit growth of Escherichia coli O157:H7. Y. Wang*, T. A. McAllister1, S. N. Acharya1, and A. D. Iwaasa1, Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada.

Evaluation of tannins from forages for their capacity to inhibit growth of Escherichia coli O157:H7. Y. Wang*, T. A. McAllister1, K. H. Ominski2, D. O. Krause1, and K. M. Wittenberg1, Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 1University of Manitoba, Winnipeg, Manitoba, Canada.


Total digestive nutrient and energy values of new crossed and winter-hardy proanthocyanidin-containing alfalfa populations transformed with the maize bHLH (Lc) regulatory gene in ruminants: Comparison with non-transgenic alfalfa. A. Jonker1, P. Yu1, Y. Wang1, and M. Gruber1, University of Saskatchewan, Saskatoon, SK, Canada, 2Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Saskatoon Research Centre, Agriculture and Agri-Food Canada, Saskatoon, SK, Canada.

Chemical profiles and protein and carbohydrate subfractions of new crossed and winter-hardy proanthocyanidin-containing alfalfa populations transformed with the maize bHLH (Lc) regulatory gene in ruminants: Comparison with non-transgenic alfalfa. A. Jonker1, P. Yu1, Y. Wang1, and M. Gruber1, University of Saskatchewan, Saskatoon, SK, Canada, 2Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Saskatoon Research Centre, Agriculture and Agri-Food Canada, Saskatoon, SK, Canada.

Sugarcane stalk proportion effects on dairy cow performance. S. Siécola Júnior1, L. L. Bitencourt1, V. A. Silveira1, N. M. Lopes1, G. S. Dias Júnior1, J. R. M. Silva1, R. A. N. Pereira1, and M. N. Pereira*, 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Centro Federal de Educação Tecnológica, Januária, MG, Brazil, 3Better Nature Research Center, Ijaci, MG, Brazil.

Sugarcane stalk proportion effects on heifer growth. J. R. M. Silva1, S. Siécola Júnior1, L. L. Bitencourt1, G. S. Dias Júnior1, N. M. Lopes1, V. A. Silveira1, I. R. Rios1, and M. N. Pereira*, 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Centro Federal de Educação Tecnológica, Januária, MG, Brazil.

Early-lactation cows fed concentrate do not respond to high-total nonstructural carbohydrates alfalfa. A. F. Brito*, G. Régimbaldi1, G. F. Tremblay1, A. Bertrand3, Y. Castonguay1, G. Bélanger1, R. Michaud1, and R. Berthiaume1, Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 2Université Laval, Québec, QC, Canada, 3Agriculture and Agri-Food Canada, Québec, QC, Canada.

Effects of variety and maturity at harvest time in the composition and in vitro kinetics of ruminal degradability of alfalfa hays. C. Arzola1, A. Muro1, M. R. Murphey1, O. Ruiz1, J. Salinas1, C. Rodriguez1, Y. Castillo1, and J.A. Payan1, Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, Mexico, 2Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, Mexico, 3Universidad Autónoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico, 4University of Illinois, Urbana, 5INIFAP, Delicias, Chihuahua, Mexico.

Diurnal variation of non structural carbohydrate concentrations in alfalfa. C. Morin1, G. Bélanger2, G. F. Tremblay2, A. Bertrand3, Y. Castonguay1, R. Michaud2, R. Berthiaume1, and G. Allard1, 1Université Laval, Québec, QC, Canada, 2Agriculture and Agri-Food Canada, Quebec, QC, Canada, 3Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

Subjectivity of qualitative assessment of corn silage by dairy nutritionists. K. E. Griswold*, P. H. Craig1, R. C. Goodling1, and A. J. Heinrichs1, 1Penn State Cooperative Extension, University Park, 2Penn State University, University Park.


Effects of wilting, molasses and inoculants on alfalfa silage nutritional properties. F. Hashemzadeh Sigari1, M. Khorvash1, G. R. Ghorbani2, and A. Nikkhah*, 1Isfahan University of Technology, Isfahan, Iran, 2Zanjan University, Zanjan, Iran.

Effect of drying methods on chemical composition of ruminal fermentation and digestibility of Leucaena leucocephala in goats. R. Rojo-Rubio1, O. Vázquez-Mendoza1, A. Z. M. Salem2, D. López-Aguirre1, D. Cardoso-Jiménez1, B. Albarrán-Portillo1, S. Rebollar-Rebollar1, J. Hernández-Martínez1, F. Vázquez-Armijo1, and L. M. Camacho-Díaz2, 1Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, 2Alessandria University, Alexandria Egypt.

Timothy dietary cation-anion difference, grass tetany index, and mineral concentrations predicted by near infrared reflectance spectroscopy. G. F. Tremblay1, Z. Nie1, G. Bélanger1, S. Pelletier1, and G. Allard1, 1Agriculture and Agri-Food Canada, Québec, QC, Canada, 2China Agricultural University, Beijing, China, 3Université Laval, Québec, QC, Canada.

M109  Nutritive value, in situ degradability and intake of forage soybean and Lablab by weanling goats. E. Valencia*, A. Rodríguez, and F. Rivera Melendez, University of Puerto Rico, Mayaguez, Puerto Rico.


M112  Chemical composition, in vitro gas production kinetics of mesquite (*Prosopis laevigata*) pods at different stages of maturity in goats. A. Z. M. Salemi1,2, R. Rojo-Rubio*, O. Vazquez-Mendoza1, D. Cardoso-Jiménez1, and B. Albarrán-Portillo1, 1*Universidad Autónoma del Estado de México, Estado de México, México, 2Alexandria University, Alexandria, Egypt.

M113  Using in vitro gas production technique to calculate total digestible nutrients value of native forage in southern Texas. A. D. Aguiar*, L. O. Tedeschi1, F. M. Rouquette2, A. Ortega1, D. S. Delaney1, and S. Moore1, 1Texas A&M University, College Station, 2Texas AgriLife Research, Overton, TX, 3Texas A&M University, Kingsville, 4King Ranch, Kingsville, TX.

Graduate Student Paper Competition
CSAS Graduate Student Competition 1

M114  Variation in antibody and cell-mediated immune responses between Canadian Holsteins and Norwegian-Red crossbred first calf heifers. S. Cartwright*, E. B. Burnsides, N. Karrow1, L. Schaeffer2, and B. A. Mallard1, 1University of Guelph Department of Pathobiology, Guelph, Ontario, Canada, 2Centre for Genetic Improvement of Livestock, Guelph, Ontario, Canada, 3Gencor Inc., Guelph, Ontario, Canada.

M115  Translation efficiency mediated by untranslated region of bovine beta casein mRNA. J. Kim*, M. Bakovic, J. Li, J. Bag, and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

M116  Impact of an extended photoperiod in farrowing houses on sow and litter performances. M.-P. Lachance*, J.-P. Laforest1, N. Devillers1, A. Laperrière3, and C. Farmer1, 1Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Animal Science Dept., Laval University, Québec, QC, Canada, 3Centre for Genetic Improvement of Livestock, Guelph, Ontario, Canada, 4Hydro-Québec’s Research Institute, Shawinigan, QC, Canada.

M117  Effects of low-voltage electrical stimulation and aging on heavy lamb meat tenderness. E. Pouliot*, C. Gariépy1, M. Thériault1,2, C. Avezard2, J. Fortin2, N. J. Simmons3, and F. W. Castonguay1,2, 1Université Laval, Québec, QC, Canada, 2Food Research and Development Centre, AAFC, St-Hyacinthe, Québec, QC, Canada, 3Dairy and Swine Research and Development Centre, AAFC, Lennoxville, QC, Canada, 4Carne Technologies Ltd, Cambridge, New Zealand.

M118  Lysine and energy maintenance requirements in modern, high productivity sows are greater than previous estimates. R. S. Samuel*, S. Moehn1, P. B. Pencharz2, and R. O. Ball3, 1Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, 2Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.

M119  A modified Ovsynch protocol using pH or hCG in lactating dairy cows. M. B. Gordon*, R. Rajamahendran1, M. G. Colazo1, and D. J. Ambrose1,3, 1Department of Animal Science, Faculty of Land Food Systems, University of British Columbia, Vancouver, BC, Canada, 2Dairy Research and Technology Centre, Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 3University of Alberta, Edmonton, AB, Canada.

M120  Dairy farm sustainability in Quebec, Canada: The social aspect. V. Bélanger*, D. Parent, A. Vanasse, G. Allard, and D. Pellerin, FSAA, Université Laval, Québec, Canada.


M122  The influence of fish oil diets on insulin metabolism in adult male pig. C. A. Castellano*, J. J. Ma-devillers1, A. Laperrière3, and C. Farmer1, 1Department of Animal Sciences, Quèbec city, QC, Canada.
Use of ash and nitrogen concentrations in manure to estimate loss of ammonia over time. H. A. Paz* and W. P. Weiss, *The Ohio State University, Wooster.

The effects of metaphylactic therapy on health and growth of neonatal Holstein bull calves. K. S. Holloway*, G. A. Holub, J. E. Sawyer, and M. A. Tomaszewski, Texas A&M University, College Station.

Effects of single nucleotide polymorphisms in stearoyl CoA desaturase on milk fatty acid profile in lactating Holstein cows fed diets varying in fat content. L. Clark*, S. Moore, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.


Evaluating the impacts of a ruminally protected lysine product in dairy cows. N. Swanepoel*1,2, P. H. Robinson2, and L. J. Erasmus1, 1University of Pretoria, Pretoria, South Africa, 2University of California, Davis.


Evaluation of the economic impact of Optigen® use in commercial dairy herd diets with varying feed and milk prices. J. F. Inostroza*, V. E. Cabrera1, R. D. Shaver1, and J. M. Tricárico1, 1University of Wisconsin, Madison, 2Alltech Inc., Brookens, SD.


Metabolism of ferulic acid in ram lambs. M. A. Soberón* and D. J. R. Cherney, Cornell University, Ithaca, NY.


Molecular cloning, distribution and ontogenetic expression of b0,+AT and the oligopeptide transporter PepT1 mRNA in Tibetan suckling piglets. W. Wang*, I. G. Wu1, W. Gu1, T. Li1, M. Feng1, W. Chu1, R. Huang1, M. Fan1, D. Fu1, Z. Feng1, and Y. Yin1, 1The Chinese Academy of Sciences, Changsha, Hunan, P. R. China, 2Changsha University, Changsha, Hunan, P. R. China, 3University of Guelph, Guelph, Ontario, Canada, 4Texas A and M University, College Station.


Polymorphisms in lipogenic genes and variations in milk fatty acid composition in Holstein dairy cows. R. A. Nafikov*, J. P. Schoomaker1, J. M. Reecy2, D. Moody-Spurlock2, J. Minick-Bormann2, K. J. Koehler2, and D. C. Beitz2, 1Iowa State University, Ames, 2Kansas State University, Manhattan.

Regulation of bovine pyruvate carboxylase promoters by fatty acids. H. M. White*, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.
Lactation Biology

M139 Effects of restricted feeding of prepubertal ewe lamb on growth performance, mammary gland development and first lactation. L. Villeneuve*, 1, D. Cinq-Mars2, and P. Lacasse3, 1Centre d’expertise en production ovine du Québec, LéPocatérie, QC, Canada, 2Laval University, Québec, QC, Canada, 3AAFC, Dairy and Swine Research and Development Center, Sherbrooke, QC, Canada.

M140 Effects of intravenous infusion of trans-10, cis-12 18:2 on mammary lipid metabolism in lactating dairy cows. R. Gervais*, 1, J. W. McFadden2, A. J. Leng3, B. A. Corl4, and P. Y. Chouinard5, 1Université Laval, Québec, QC, Canada, 2Virginia Tech, Blacksburg.

M141 Selection of reference genes for quantitative real-time PCR in mouse mammary gland during different lactation days. X. L. Dong*, J. Q. Wang*, D. P. Bu1, K. L. Liu1, H. Y. Wei1, and L. Y. Zhou1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2University of Hong Kong, Hong Kong, China.

M142 Responses of milk protein and mammary amino acids metabolism to duodenal soybean small peptide and free amino acids infusion in lactating goat. H. Liu, Z.-I. Cao, L. Wang, S.-L. Li*, and L.-B. Wang, College of Animal Science and Technology, China Agricultural University, Beijing, China.


M144 In vitro culture and characterization of a mammary epithelial cell line from Chinese Holstein dairy cows. H. Hu1, D. P. Bu1, J. Q. Wang1*, Q. Chen1, X. Y. Li1, H. Y. Wei1, L. Y. Zhou1, and J. J. Loor2, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2University of Illinois, Urbana.


M146 Chinese women dietary behavior in different lactating stages and breast milk levels of fatty acids and iron. L. Xu*, Q.-H. Sheng, Z.-G. Zhang, Q. Gen, and L.-W. Zhang, 1School of Food and Science and Engineering, Harbin Industry University, Harbin city, China, 2National Dairy Engineering and Technical Research Center, Northeast Agriculture, Harbin city, China, 3Hebei Dairy Engineering and Technical Research Center, Shijingliuzhong city, China.

M147 Effect of staged ovariectomy on mammary histology and transcript abundance in prepubertal heifers. B. T. Velayudhan*, R. M. Akers1, B. P. Hudson1, A. Rowson-Baldwin1, R. C. Hovey1, and S. E. Ellis1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2University of California, Davis, 3Clemson University, Clemson, SC.


M149 Effects of increased milking frequency on milk fatty acid composition in early lactation dairy cows. S. L. Shields*, D. Sevier, J. E. Williams, S. Zaman, P. Rezamand, and M. A. McGuire, University of Idaho, Moscow.

M150 Energy deprivation inhibits protein synthesis in mammary epithelial cells through an AMPK- and mTOR-dependent pathway. S. A. Burgos* and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

M151 Effect of milking frequency (1 vs. 4x) on milk yield, composition and numbers of gene transcripts for alpha-lactalbumin and beta casein in milk. A. P. Alex*, J. L. Collier1, D.L. Hadsell2, and R. J. Collier1, 1University of Arizona, Tucson, 2Baylor, University, Houston, TX.


M153 Activation of mTOR signaling by insulin-like growth factor-I stimulates translation initiation in mammary epithelial cells. S. A. Burgos* and J. P. Cant, University of Guelph, Guelph, Ontario, Canada.

M154 An intact SREBP pathway is essential for the trans-10, cis-12 CLA-induced inhibition of de novo fatty acid synthesis in the murine lactating mammary gland. M. R. Foote*, K. J. Harvatine1, J. Monks1, M. C. Neville1, Y. R. Boisclair1, and D. E. Bauman2, 1Cornell University, Ithaca, NY, 2University of Colorado, Aurora.

M155 Low dosage oxytocin treatment induces milk ejection in dairy cows. C. J. Belo and R. M. Bruckmaier*, University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland.

M156 Effect of exogenous growth hormone and ovariectomy on protein expression of aromatase in prepubertal bovine mammary gland. B. P. Hudson*, S. E. Ellis*, and R. M. Akers1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Clemson University, Clemson, SC.

M158  Effects of a shortened dry period on milk production and composition in early lactating Holstein cows. S. Safa1, A. Heravi Moussavi2*, M. Danesh Mesgari1, A. Golian1, and A. Soleimani1,2, 1Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, 2Islamic Azad University-Kashmar Branch, Kashmar, Khorasan Razavi, Iran.


**Meat Science and Muscle Biology 1**


M163  Feedlot performance and carcass traits of Nellore, Simmental, Simbrasil and F 1 Simmental cows at the beginning of the free-range finishing period a. F. S. Parra1,2, S. R. Baldin1,2, C. L. Martins3, R. D. L. Pacheco4*, D. D. Millien1, R. S. Barducci1, L. M. N. Sarti1, T. M. Mariani1, J. P. S. T. Bastos1, M. D. B. Arrigoni1, and J. C. Hadlich1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil.

M164  Effects of vitamin D supplementation on carcass traits of Nellore and Canchim bullocks fed high concentrate diets. F. S. Parra1,2, S. R. Baldin1, M. D. B. Arrigoni1, C. L. Martins1, J. R. Ronchesel1, N. R. B. Consolo1, A. L. Campanini1, R. S. Barducci1, L. M. N. Sarti1, D. D. Millien1, R. D. L. Pacheco4*, D. Tomazella1, H. D. Rosa1, T. Leiva1, E. N. Andrade1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil.

M165  Interaction of dietary vitamin D3 and sunlight exposure on meat tenderness and color of Bos indicus cattle. A. R. Lobo Jr1, E. F. Delgado2*, G. B. Mourão2, A. Berndt3, and J. J. A. A. Demarchi2, 1Escola Superior de Agricultura, Piracicaba, SP, Brazil, 2Agência Paulista de Tecnologia do Agronegócio, Andradina, SP, Brazil.


M168  Evaluating the application of dual x-ray energy absorptiometry (DEXA) to assess dissecible fat and muscle from the 9–11th rib section of beef cattle. F. R. Ribeiro1, R. B. Dineiro2*, L. O. Tedeschi3, S. E. Marinho3, 1FMVZ/Unesp, Dracena, São Paulo, Brazil, 2Universidade de Caxias do Sul, Caxias do Sul, RS, Brazil.

M169  Age entering the feedlot and implant potency: I. Post-weaning-weaning and feedlot performance. P. Beck*1, B. Barham2, S. Gadberry1, J. Apple1, M. Miller1, and L. Hughes4, 1University of Arkansas, Hope, 2University of Arkansas Coop. Ext. Ser., Little Rock, 3University of Arkansas, Fayetteville, 4Texas Tech University, Lubbock.

M170  Age entering the feedlot and implant potency: II. Carcass quality, shear force and sensory panel characteristics. B. Barham*, P. Beck1, S. Gadberry1, J. Apple1, W. Whitworth1, and M. Miller1, 1University of Arkansas, Little Rock, 2University of Arkansas, Hope, 3University of Arkansas, Fayetteville, 4University of Arkansas, Monticello, 5Texas Tech University, Lubbock.


M172  Effects of dry-ageing on pork quality of vitamin E enhanced loins. M. Juarez*, W. R. Caine1, J. L. Aalhus1, M. E. R. Dugan1, N. Hidiroglou2, and B. E. Uttaro1, 1Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada, 2Health Products and Food Branch, Health Canada, Sir Frederick G. Banbury Research Centre, Ottawa, Ontario, Canada.

M173  Age at the beginning of the free-range fattening period affects meat quality of Iberian pigs. M. A. Latorre*, J. A. Rodríguez-Sánchez, and G. Ripoll, Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain.

M174  Effects of electrical stimulation and aging on beef tenderness of dairy cows. A. A. Souza1*, T. I. Ferreira2, and J. C. Hadlich1, 1UNIDERP/ANHANGUERA, Campo Grande, Mato Grosso do Sul, Brazil, 2AGRO, Campo Grande, Mato Grosso do Sul, Brazil, 3UNESP, Botucatu, Sao Paulo, Brazil.

M175  Relationship between raw breast meat color lightness values and functionalities of broiler fillets deboned six to eight hours postmortem. H. Zhuang* and E. Savage, ARS-USDA, Athens, GA.

**Nonruminant Nutrition**

**Feed Ingredients**

Characterization of protein structure of the new co-products from bioethanol production in western Canada using DRIFT Spectroscopy: Comparison among blend DDGS, wheat DDGS and corn DDGS, between wheat and wheat DDGS, and corn and corn DDGS. P. Yu*, D. Damiran, and W. Nuez Ortin, *Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*.


Combined usage of corn distillers solubles and corn steep water for liquid fed growing-finishing pigs. C. L. Zhu*, D. Wey, and C. F. M. de Lange, *University of Guelph, Guelph, ON, Canada*.

Comparison of drying methods for whole frozen fish commonly fed to marine mammals. S. M. Langowski1, A. W. White1, K. L. West1, K. S. Yamamoto2, and J. R. Carpenter*2, 1*Hawaii Pacific University, Honolulu, 2University of Hawaii at Manoa, Honolulu*.

Effects of feeding soybean meal from high protein or low oligosaccharide varieties of soybeans to weanling pigs. K. M. Baker*, B. G. Kim, and H. H. Stein, *University of Illinois, Urbana*.

The granulated barley provided during the finishing period improves the production cost, intramuscular fat percentage and oleic acid content in muscle from heavy pigs. A. Daza1, M. A. Latorre*2, G. Cordero3, A. Olivares3, and I. Fernández-Figares2, 1*Universidad Politécnica de Madrid, Madrid, Spain, 2Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain, 3Universidad Complutense de Madrid, Madrid, Spain*.

Nutritive utilization of protein and amino acids from raw cowpea flour (*Vigna unguiculata*) in growing rats. G. Kapravelou1, E. Nebot1, J. M. Porres1, and L. Babinszky*1, 1*Spanish Research Council, CSIC, Granada, Spain*.

Influence of sunflower seed meal on histological alterations of broiler chickens. S. Salari*, H. Nassiri Moghaddam, J. Arshami, A. Golian, and M. Maleki, *Ferdowsi University of Mashhad, Mashhad, Iran*.

Guar gum as a source of soluble non-starch polysaccharides for swine decreases nutrient digestibility and ammonia emission while increasing manure odor. W. Zhang1, E. van Heugten**1, T. van Kempen1**1, and V. Felliner1, 1*North Carolina State University, Raleigh, 2Provim, RIC, Brussels, Belgium*.


Influence of sunflower seed meal (SFSM) on body organ weights and blood parameters of broiler chickens. S. Salari*, H. Nassiri Moghaddam, J. Arshami, and A. Golian, *Ferdowski University of Mashhad, Mashhad, Iran*.

The effects of increasing the level of rapeseed meal in the diet of the growing-finishing pig on the growth performance and nitrogen and phosphorus excretion. P. McDonnell, S. Figat, J. J. Callan, and J. V. O’Doherty*, *Lyons Research Farm, University College Dublin, Newcastle, Co Dublin, Ireland*.

Effect of hydrothermally processed corn on fecal digestibility of energy in cannulated roosters. L. Babinszky* and J. Tossenberger, Kaposvár University, Kaposvár, Hungary.

Evaluation of blue mussel shells as an alternative dietary calcium source for laying hens. J. L. MacIsaac*1 and D. M. Anderson1, 1*Atlantic Poultry Research Institute, Truro, Nova Scotia, Canada, 2Nova Scotia Agricultural College, Truro, Nova Scotia, Canada*.

Feeding flax to late-pregnant and lactating sows: Effects on sow immunity and antibody transfer to their piglets. M. Lessard*, H. V. Pettit, A. Gigueré, and C. Farmer, *Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada*.

Changes in gut microbiota of broiler chicks fed distillers dried grains with solubles (DDGS) during a coccidial infection. V. Perez-Mendoza*, C. Jacobs1, C. Parsons1, J. Barnes1, M. Kuhlenschmidt1, M. Jenkins2, and J. Pettigrew1, 1*University of Illinois, Urbana, 2United States Department of Agriculture, Beltsville, MD*. 

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M196  Feeding flax to late-pregnant and lactating sows: Effects on fatty acid profiles, hormones and performances of sows and their litters. C. Farmer*, A. Giguére, M. Lessard, and H. V. Petit, Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.


M199  Changes in diversity and homogeneity of the gut microbiota of pigs fed distillers dried grains with solubles (DDGS) after an E. coli challenge. V. Perez-Mendoza*, J. Barnes*, C. Maddox*, J. Pluske*, and J. Pettigrew*, University of Illinois, Urbana; Murdoch University, Murdoch, WA, Australia.


M201  In vitro starch kinetics hydrolysis and fermentation of field peas (Pisum sativum). C. A. Montoya, P. Kish, and P. Leterme*, Prairie Swine Centre Inc., Saskatoon, SK, Canada.

M202  Ileal amino acid digestibility in dried distillers grains with solubles originating from wheat, corn or wheat-corn blend fed to growing pigs. Y. Yang*, E. Klare, B. A. Slominski, A. Brülé-Babel, and C. M. Nyachoti, University of Manitoba, Winnipeg, Manitoba, Canada.

M203  In vitro rabbit cecal fermentation patterns of four substrates: Glucose, cellobiose, microcrystalline cellulose and NDF separated from alfalfa hay. H. J. Yang*, G. Yue*, Y. C. Cao*, D. F. Zhang*, and J. Q. Wang*, China Agricultural University, Beijing, P. R. China; State Key Laboratory of Animal Nutrition, Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P. R. China.


M207  A spreadsheet program for making a balanced Latin square design. B. G. Kim* and H. H. Stein, University of Illinois, Urbana.


M210  The effect of different double choice feeding protocols on the measurement of feed preferences. D. Solà-Oriol*, E. Roura*, and D. Torrallardona*1, IRTA, Mas de Bover, Constanti, Spain; Lucta SA, Barcelona, Spain.

M211  Influence of the type of growth on the diet of two genotypes of quails in a floor housing system. D. Cardoso-Jiménez*, A. Z. M. Salem*1, R. Rojo-Rubio1, and A. Perez-Chaves1, Centro Universitario UAH-TEMASCATEPEC, Universidad Autónoma del Estado de México, Toluca-Tejupilco, Estado de México, México; Alexandria University, Alexandria, Egypt.


M213  Supplementation with phytase and xylanase can increase energy availability in swine diets containing corn distillers dried grains with solubles (DDGS). M. D. Lindemann*, G. A. Aggar*, G. L. Cromwell1, P. H. Simmins1, and A. Owusu-Asiedu1, University of Kentucky, Lexington; Southern Illinois University, Carbondale; Danisco Animal Nutrition, Marlborough, UK.
Methionine requirements for the preimplantation bovine embryo. L. Bonilla*1, D. Luchini2, E. Devillard3, and P. J. Hansen2,
1University of Florida, Gainesville, 2Adisseo USA, Inc., Alpharetta, GA, 3Adisseo France, SAS, Commentry, France.

Effect of exogenous insulin and fasting on estradiol production and growth hormone receptor (GHR) and insulin-like growth factor I (IGF-I) genes expression by the pre-ovulatory follicle of ewes. A. Schneider1, L. F. M. Pfeifer2, E. Schmitt1, J. W. Silva Neto1, L. T. Hax3, M. M. Antunes1, F. A. B. Del Pino1, G. R. Paludo1, and M. N. Corrêa1, 1Federal University of Pelotas, Brazil, 2University of Brasilia, Brazil.

TNFα and adipocyte-hepatic metabolism at drying off and during early lactation in dairy cows. H. A. van Dorland1, H. Sadri2, and R. M. Bruckmaier*1, 1University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland, 2Isfahan University of Technology, Department of Animal Science, Isfahan, Iran.

Early-weaning up-regulates the expression of sucrase-isomaltase in the jejunum of the piglet. D. Lackeyram*, T. Archbold, K. C. Swanson, and M. Z. Fan, University of Guelph, Guelph, ON, Canada.

Effect of propionate infusion on hepatic PEPCK and glucose-6-phosphatase expression in neonatal Holstein calves. S. S. Donkin*, E. Cedeño, and S. L. Koser, Purdue University, West Lafayette.

The Effects of supplemented diet with fish oil and canola oil during transition period to early lactation on follicular dynamics of Iranian Holstein dairy cows. T. S. Vafa, A. Heravi Mousavi*, A. Naserian, M. Danesh Mesgaran, R. Valizadeh, and A. Parand, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.

The effects of supplemented diet with fish oil and canola oil during transition period to early lactation on complete blood count of Iranian Holstein dairy cows. T. S. Vafa, A. Heravi Mousavi*, A. Naserian, M. Danesh Mesgaran, and R. Valizadeh, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.


Hematological profile of confined ewes fed corn silage. J. P. F. Silveira1, J. L. C. B. Reis*2, M. A. Factori2, D. H. Vieira3, V. L. Tierzo1, L. F. D. Medeiros3, and C. Costa4, 1São Paulo State University, Botucatu, SP, Brazil, 2University of Agrarian Sciences - University of Marília, Marília, SP, Brazil, 3Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, 4Rural Federal university of Rio de Janeiro, Seropedica, RJ, Brazil.

Effects of lactation and pregnancy on metabolic and hormonal responses of Holstein dairy cattle. I. M. Thompson*1, R. L. Cerri1, I. H. Kim2, A. D. Ealy3, P. J. Hansen1, C. R. Staples1, and W. W. Thatcher1, 1University of Florida, Gainesville, 2Chungbuk National University, South Korea.


Serum and anterior pituitary gland (AP) concentrations of IGF-I during an estradiol induced LH surge in gilts. N. M. Rasmussen*, C. E. Hostetler, and J. A. Clapper, South Dakota State University, Brookings.


Relationships between dry matter intake (DMI), plasma progesterone (P4), and liver catabolic enzymes in lactating dairy cows. O. G. Sa Filho*1,3, C. O. Lemley4, M. E. Wilson2, J. Hillegass1, J. L. M. Vasconcelos2, and R. W. Butler3, 1FMVZ/UNESP, Botucatu, SP, Brazil, 2West Virginia University, Morgantown, 3Cornell University, Ithaca, NY, 4University of Vermont, Burlington, VT.

Method development and preliminary evaluation of the potential for using erythrocyte membranes in the assessment of long-chain polyunsaturated fatty acid status in dairy cows. C. L. Preseault*1,2, J. Kraft1, H. M. Dann3, and A. L. Lock1, 1University of Vermont, Burlington, VT, 2William H. Miner Agricultural Research Institute, Chazy, NY.

Phylogeny and Endocrinology and Metabolism
Effects of BCS and level of concentrate feeding during early lactation on plasma concentrations of blood metabolites in pasture–fed dairy cows. F. Y. Obese*1,2, T. E. Stirling1, C. R. Stockdale1, K. L. Macmillan1, A. R. Egan1, and S. Humphrys1, 1CSIR Animal Research Institute, Accra, Ghana, 1School of Agriculture and Food Systems, the University of Melbourne, Melbourne, Victoria, Australia, 2School of Veterinary Medicine, the University of Melbourne, Werribee, Victoria, Australia, 3Department of Primary Industries, Kyabram, Victoria, Australia, 4Primegro Pty Ltd, Thebarton, South Australia, Australia.

M232
Metabolic profile of the hypocaloric dairy cows in an intensive grazing system in south of Brazil. E. Schmitt1,2, D. A. C. Hoffmann1, M. E. Lima1, T. dos S. Farofa1, M. A. Goulart1, M. S. Lopes1, P. Montagner1, R. T. França1, F. A. B Del Pino1, J. J. Loor2, and M. N. Corrêa1, 1Federal University of Pelotas, Pelotas, RS, Brazil, 2University of Illinois, Urbana.

M233
A comparison of physiological and endocrine parameters during the periestruent period in lactating dairy cows that did and did not conceive. A. K. Sanders*1, D. Ray1, C. H. Hamilton1, C. Tritsch1, M. E. Risley2, M. F. Smith3, and W. J. Silvia1, 1University of Kentucky, Lexington, 2University of Missouri, Columbia.

M234
Plant-based diets enriched with linseed oil or marine algae and organic selenium alter reproductive performance of broiler breeder hens over the reproductive season. C. Brèque*1,2, C. Coss1,2, C. Lessard1,2, R. Gervais2, D. Venne3, M. R. Lefrançois3, P. Y. Chouinard2, G. Vandenberg2, and J. L. Bailey1,2, 1Centre de recherche en biologie de la reproduction, Québec, QC, Canada, 2Département des Sciences Animales, Montréal, Québec, QC, Canada, 3Couvoir Scott L’ée, Scott Jonction, QC, Canada.

M235
Temporal changes in hepatic gene expression during the periparturient period of spring-calving beef cows on grazing conditions. A. L. Arassyano*1,2, R. Perez-Clariget1, G. Quintans1, P. Soca2, B. A. Crooker1, and M. Carriquiry1, 1School of Agronomy, UDELAR, Uruguay, 2INIA, Treinta y Tres, Uruguay, 3Department of Animal Science, University of Minnesota, St. Paul.

M236
Effect of short-term prepartum supplementation on reproduction of multiparous beef cows on grazing conditions. G. Quintans*1, G. Banchero1, G. Roig2, and M. Carriquiry1, 1INIA, Treinta y Tres, Uruguay, 2School of Agronomy, UDELAR, Uruguay.

M237
Endocrine and reproductive parameters of North American Holstein × New Zealand Holstein-Friesian crossbred cows on grazing conditions. A. Fernandez-Foren*1, M. Carriquiry2, V. Artegoitia2, D. Laborde3, and A. Meikle1, 1Veterinary School, UDELAR, Uruguay, 2School of Agronomy, UDELAR, Uruguay, 3Private consultant, Uruguay.

M238
Effect of short-term prepartum supplementation on milk production and calf performance of multiparous beef cows on grazing conditions. M. Carriquiry*1, G. Roig2, G. Banchero2, and G. Quintans2, 1School of Agronomy, UDELAR, Uruguay, 2INIA, Treinta y Tres, Uruguay.

M239
Effect of bovine somatotropin (bST), dietary fat, and day in milk (DIM) on hepatic mineral concentrations in Holstein cows. M. Carriquiry*1, W. J. Weber1, W. A. House2, and B. A. Crooker1, 1School of Agronomy, UDELAR, Uruguay, 2Department Animal Science, University of Minnesota, St. Paul, 3SDA-ARS, Ithaca, NY.

M240
Responses of physiological parameters in cattle to a short period of induced heat load. Y. Aharoni1, A. Brosh*2, E. Tahar1, and A. Abud1, 1VETERIX Ltd, Or Aqiva, Israel, 2Agricultural Research Organization, Ramat Yishai, Israel.

M241
Differential propionate effects on the mRNA expression of a putative beta-hydroxybutyrate sensitive receptor GPR109A in two adipose depot of goats. M. Mielenz* and H. Sauerwein, 1University of Bonn, Bonn, Germany.

M242
Effect of maternal nutrition and selenium (Se) supply on growth and thyroxine (T4) and triiodothyronine (T3) concentrations in female lambs. L. A. Lekatz*, J. J. Reed, T. L. Neville, D. A. Redmer, L. P. Reynolds, J. S. Caton, and K. A. Vonmahnne, 1Department of Animal Sciences, North Dakota State University, Fargo.

M243

M244
Effects of heat stress on glucose homeostasis and metabolic response to an endotoxin challenge in Holstein steers. R. P. Rhoads*1, S. R. Sanders1, L. Cole1, M. V. Skrzypek1, T. H. Elsasser1, G. C. Duff1, R. J. Collier1, and L. H. Baumgard1, 1University of Arizona, Tucson, 2USDA-ARS, Beltsville, MD.

M245
Impact of unsaturated fatty acid supply on the regulation of CLA-induced milk fat depression in lactating cows. M. J. de Veth1, J. M. Grinar2, V. Toivonen1, and K. J. Shingfield*, 1BASF-AG, Offenbach/Queich, Germany, 2University of Helsinki, Helsinki, Finland, 3MTT Agrifood Research Finland, Jokinen, Finland.
Production, Management and the Environment

Beef and Dairy

M246 Sexed-biased semen for nulliparous heifers: Effects on reproductive and lactational performances. F. Guagnini1, J. E. P. Santos2, J. R. Lima3, J. Fetrow4, and R. C. Chebel5,1. Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, 2Department of Animal Science, University of Florida, Gainesville, 3Department of Veterinary Population Medicine, University of Minnesota, Saint Paul.


M248 What percentage of Nellore (Bos indicus) bulls exhibit fertility-associated antigen on sperm membranes? J. C. Dalton4,1, L. Deragon4, and J. L. M. Vasconcelos5. University of Idaho, Caldwell, 2Alta Genetics Brazil, Uberaba, MG, Brazil, 3FMVZ-UNESP, Botucatu, SP, Brazil.

M249 Effect of dry period length on productive and reproductive parameters at subsequent lactation period of Holstein cows. D. R. Lozano1 and C. F. Aréchiga*2,1. Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguascalientes, México, 2Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México.

M250 Effect of total dissolved solids and sulfates in drinking water on growing heifers fed sorghum silage. J. I. Arroquy*1,2, M. Avila1, J. Saravia1, R. Ibañez1, and P. Fisolo1,1. INTA Santiago del Estero, Santiago del Estero, Argentina, 2Univ. Nacional de Santiago del Estero - Fac. Agronomía y Agroindustrias, Santiago del Estero, Argentina, 3CONICET, Santiago del Estero, Argentina.

M251 Non genetics effects on reproductive traits in Nellore female: I. Gestation length. D. H. Vieira1, V. C. Rodrigues2, L. F. D. Medeiros2, C. G. Barbosa1, J. P. F. Silveira1, V. L. Tierzo1, J. L. C. B. Reis2, and R. S. B. Pinheiro1. Center of Creation of A, Rio de Janeiro, RJ, Brazil, 2Rural Federal university of Rio de Janeiro, Seropedica, RJ, Brazil, 3São Paulo State University, Botucatu, SP, Brazil, 4University of Agrarian Sciences - University of Marília, Marília, SP, Brazil.

M252 Effects of differing levels of rumen degradable protein on nitrogen metabolism in dairy cows and environmental pollution. H. Rafiee*, University of Tehran, Tehran, Iran.

M253 PGF2α analog on uterine health and reproductive performance of dairy cattle. R. M. Santos*1, D. G. B. Demétrio2, C. C. Dias3, and J. L. M. Vasconcelos1,1. FAMEV-UFU, Uberlandia, MG, Brazil, 2FMVZ-UNESP, Botucatu, SP, Brazil.

M254 Effects of GnRH treatment 7 days prior to resynchronization on conception rates to previous and repeat inseminations. R. L. Nebel*1, J. M. DeJarnette2, and B. A. Meek2,1. Select Sires, Inc, Plain City, OH, 2Cache Valley/Select Sires, Logan, UT.


M257 Validation of right ruminal artery and vein as models of bovine foregut vasculature. J. L. Klotz*1, L. P. Bush1, and J. R. Strickland1,1. USDA-ARS, FAPRU, Lexington, KY, 2University of Kentucky, Lexington.

M258 Effects of a commercial product containing Morinda citrifolia extract on growth performance and health of calves with a high risk of developing bovine respiratory disease. M. S. Brown1, R. Godbee2, B. Coufal1, C. L. Maxwell1, J. O. Wallace1, and C. H. Ponce1, Feedlot Research Group, West Texas A&M University, Canyon, 2Morinda Agriculture, Provo, UT.

Ruminant Nutrition

By-product Feeds


M261 In situ ruminal protein degradation of whole corn or corn endosperm distiller grains. W. Z. Yang1, L. E. Armentano2, and Y. L. Li1, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2University of Wisconsin, Madison.

M263 Effects of feeding different combinations of stored wet corn distillers grains plus soluble (WDGS) on performance of lactating dairy cows. H. A. Ramirez Ramirez*, P. J. Kononoff, and A. M. Gehman, University of Nebraska Lincoln, Lincoln.


M265 The effects of replacing barley silage or barley grain with dried distillers grains plus solubles on productivity of lactating dairy cows. S. Z. Zhang*, G. B. Penner, and M. Oba, University of Alberta, Edmonton, AB, Canada.

M266 In vitro intestinal digestion of ruminal undegraded protein of distiller grain. Y. L. Li*, W. Z. Yang1, and L. E. Armentano2, 1Agriculture and Agri-Food Canada, Research Center, Lethbridge, AB, Canada, 2University of Wisconsin, Madison.

M267 Effects of diets containing elevated levels of modified wet corn distillers grains with solubles (DGS) on performance and carcass characteristics of beef steers. J. M. Carmack*, P. M. Walker1, R. L. Atkinson2, S. W. Reader2, and B. R. Wiegand3, 1Department of Agriculture, Illinois State University, Normal, 2Animal Science, Food and Nutrition, Southern Illinois University, Carbondale, 3Division of Animal Science, University of Missouri, Columbia.

M268 Effects of high levels of distillers grains on performance and carcass characteristics in steers. J. M. Carmack*, P. M. Walker1, R. L. Atkinson2, S. W. Reader2, and B. R. Wiegand3, 1Department of Agriculture, Illinois State University, Normal, 2Animal Science, Food and Nutrition, Southern Illinois University, Carbondale, 3Division of Animal Science, University of Missouri, Columbia.

M269 Effect of varying ratios of distiller grain to wheat grain in ethanol production on fermentation of ethanol by-product in batch culture. W. Z. Yang*, J. J. Mckinnon1, T. A. McAllister1, K. A. Beauchemin1, and D. J. Gibb1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2University of Saskatchewan, Saskatoon, SK, Canada.

M270 Effects of feeding glycerol on fermentation kinetics of alfalfa hay. N. A. Krueger*, R. C. Anderson2, L. O. Tedeschi3, W. K. Krueger4, and D. J. Nisbet1, 1USDA-ARS-Agriculture and Nutrition Research Unit, College Station, TX, 2Texas A&M University, College Station.

M271 Performance of post-weaned Holstein heifers fed grain mixes with glycerin as an energy source. G. Golombeski1, M. RaethKnight1, B. Ziegler1, R. Larson2, D. Ziegler3, H. Chester-Jones3, and J. Linn4, 1University of Minnesota, St. Paul, 2Hubbard Feeds, Mankato, MN, 3University of Minnesota, Southern Research and Outreach Center, Waseca.


M274 Response of dairy cows to the complete substitution of corn by crude glycerin. O. F. Zacaroni1, N. M. Lopez1, S. Siécola Júnior2, G. S. Dias Júnior2, L. L. Bitencourt2, B. F. Carvalho1, J. R. M. Silva2, R. A. N. Pereira3, and M. N. Pereira4, 1Universidade Federal de Lavras, Lavras, MG, Brazil, 2Centro Federal de Educação Tecnológica, Januária, MG, Brazil, 3Better Nature Research Center, Ijaci, MG, Brazil.

M275 Glycerol supplementation to corn silage- or cottonseed hull-based diets for lactating dairy cows. J. H. Shin*, S. C. Kim1, D. Wang1, A. T. Adesogan1, and C. R. Staples1, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department of Animal Science, Gyeongsang National University, Jinju, Gyeongsangnam, South Korea.

M276 The effects of feeding glycerol on rumen fermentation and bacteria. R. B. Potu*, A. A. AbuGhazaleh1, D. Hastings2, S. Abo El-Nor2, and S. Ibrahim3, 1Southern Illinois University, Carbondale, 2Egyptian National Research Center, Cairo, Egypt, 3North Carolina A&T State University, Greensboro.


M278 Effect of glycerol level in feedlot diets on animal performance. B. R. Ilse* and V. L. Anderson, Carrington Research Extension Center, North Dakota State University, Carrington.


M280 Feeding behavior of yearling bulls fed a finishing diet containing low pectin wet citrus pulp silage. J. O. Sarturi*, L. G. Nussio1, M. Zopollatto1, J. T. Vasconcelos2, and J. G. M. Munoz3, 1University of São Paulo, São Paulo, SP, Brazil, 2University of Nebraska, Scottsbluff.

M281 Feeding behavior of yearling bulls fed a finishing diet containing low pectin wet citrus pulp. J. O. Sarturi*, L. G. Nussio1, M. Zopollatto1, J. T. Vasconcelos2, and L. J. Mari1, 1University of São Paulo, São Paulo, SP, Brazil, 2University of Nebraska, Scottsbluff.
Ruminant Nutrition

Dairy


M286 Economic analysis of alfalfa hay inclusion in wet corn gluten feed based diets for lactating dairy cows. C. R. Mullins1, and B. J. Bradford, Kansas State University, Manhattan.

M287 Effect of alfalfa hay particle size and source of neutral detergent soluble carbohydrates on intake, chewing activity, ruminal fermentation and nutrient digestibility of midlactation cows. A. Asadi1, G. R. Ghorbani, M. Alikhani, and M. Bagheri, Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran.

M288 Differentiating effects of effective fiber sources on performance of lactating dairy cows. R. A. Starkey1, P. N. Gott, M. L. Eastridge, E. R. Oelker, A. R. Sewell, B. Mathew, and J. L. Firkins, The Ohio State University, Columbus.

M289 Effect of roughage to concentrate ratio on ruminal parameters and protein degradability in dairy cows. L. J. Erasmus1, W. A. van Niekerk1, H. Nienaber1, and P. H. Robinson1, 1University of Pretoria, Department of Animal and Wildlife Sciences, Pretoria, South Africa, 2University of California, Department of Animal Science, Davis.

M290 Effect of decreasing forage fiber in close-up cows diets on rumination time, DMI and subsequent lactation performance. A. Nekhah1, V. Keshavarz2, H. Amanloo3, M. Dehghan1, and M. Kazemi Bonchenuari1, 1Department of Animal Sciences, University of Tehran, Karaj, Iran, 2Department of Animal Sciences, University of Zanjan, Zanjan, Iran.

M291 Feed sorting of dairy cows receiving diets different in dietary fiber level. O. AlZahal1, M. S. Douglas, S. L. Greenwood, and B. W. McBride, University of Guelph, Guelph, ON, Canada.

M292 Corn bran vs. corn grain at two levels of forage: Intake and production responses by lactating dairy cows. C. Arndt1, L. E. Armentano1, and M. B. Hall1, 1Department of Dairy Science, University of Wisconsin, Madison, 2U.S. Dairy Forage Research Center, University of Wisconsin, Madison.

M293 Corn bran vs. corn grain at two levels of forage: Apparent digestibilities by lactating dairy cows. C. Arndt1, L. E. Armentano1, and M. B. Hall1, 1Department of Dairy Science, University of Wisconsin, Madison, 2U.S. Dairy Forage Research Center, University of Wisconsin, Madison.


M295 Effect of dietary concentrate level on rumen fermentation, digestibility, and nitrogen losses in dairy cows. M. Agle1, A. N. Hristov1, S. Zaman1, and C. Schneider1, 1University of Idaho, Moscow, 2Pennsylvania State University, University Park.

M296 Feeding dairy cows rolled barley grain treated with lactic acid and heat delays in situ DM disappearance and prevents development of sub-acid ruminal acidosis. Q. Zebeli1, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, University of Alberta, Edmonton, AB, Canada.

M297 Dietary energy source in primiparous dairy cows during the transition period: Blood metabolites, metabolic hormones and milk production. M. A. T. Artunduaga1, S. G. Coleho1, B. G. Campos1, A. M. Borges1, A. M. O. Lanza2, R. B. Reis2, H. M. Saturnino2, H. N. Da Costa2, and R. V. Sá Fortes2, 1Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, 2Human Resources on Agribusiness, ReHAgro, Belo Horizonte, Minas Gerais, Brazil.

M298 Corn endosperm type influences nutrient digestibility in lactating dairy cows. J. C. Lopes1, R. D. Shaver1, P. C. Hoffman1, M. S. Akins1, S. J. Bertsics3, H. Gencoglu1, and J. G. Coors1, 1Department of Dairy Science, University of Wisconsin, Madison, 2Department of Animal & Nutritional Sciences, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey, 3Department of Agronomy, University of Wisconsin, Madison.
M299 Performance of dairy cows fed extruded or hydrated and ensiled mature corn grain. L. L. Bitencourt1, S. Siécola Júnior1, L. Q. Melo1, N. M. Lopes1, V. A. Silveira1, I. R. Rios1, J. R. M. Silva2, R. A. N. Pereira1, and M. N. Pereira*1, 2Universidade Federal de Lavras, Lavras, MG, Brazil, 3Centro Federal de Educação Tecnológica, Januária, MG, Brazil, 4Better Nature Research Center, Ijací, MG, Brazil.

M300 Effect of starch infusion site on glucose rate of appearance (Ra) and digestibility of starch and nitrogen in dairy cows. F. Hassanat*, H. Lapierre, and D. R. Ouellet, Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

M301 The effects of different sources of nonstructural carbohydrates and addition of full fat roasted canola seed on milk production and composition in lactating cows. M. Sari, A. A. Naserian*, R. Valizadeh, and S. Salari, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

M302 Supplemental starch in postpartum dairy cow diets 1. Effect on productivity. B. L. Dyck*, L. Doepel1, and M. G. Colazo2, 1University of Alberta, Edmonton, AB, Canada, 2Alberta Agriculture and Rural Development, Edmonton, AB, Canada.


M305 Use of milk urea nitrogen(MUN) to improve dairy farm management. M. Nourozi*1,2, A. Heravi Moussavi3, and M. Abazari2, 1Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran, 2Department of Animal Science, Khorasan Razavi Agricultural and Natural Resources Research Center, Torogh, Mashhad, Iran.


M308 Effects of different levels of rumen degradable protein on rumen and plasma parameters in midlactation Holstein cows. H. Rafiee*, Aboureihan Campus, Tehran University, Tehran, Iran.

M309 Partial replacement of soybean meal by protected urea effects on milk yield and composition. V. L. Souza1, D. F. F. Silva1, P. R. B. Piekar ski2, C. P. Jesus2, M. N. Pereira2, and R. Almeida*2, 1Universidade Federal do Paraná, Curitiba, PR, Brazil, 2Colégio Agrícola Olegário Macedo, Castro, PR, Brazil, 3Universidade Federal de Lavras, Lavras, MG, Brazil.

M310 Effect of different ratios of ammonia nitrogen to peptide nitrogen on microbial nitrogen synthesis in dairy cows. A. Nikkhah*, M. Kazemi Bonchenari, K. Rezayazdi, M. Dehghan, and H. Kohram, Department of animal Sciences, Faculty of agronomy and animal sciences, University of Tehran, Karaj, Iran.

M311 Optimum ratio of ammonia nitrogen to peptide nitrogen in ruminal fluid for fiber digestibility and nitrogen utilization efficiency in dairy cows. M. Kazemi Bonchenari1, K. Rezayazdi1, M. Dehghan1, A. Nikkhah*3, H. Khalilvandi1, V. Keshavarz2, and F. Ghazian2, 1Department of Animal Sciences, Faculty of Agronomy and Animal Sciences, University of Tehran, Karaj, Iran, 2Department of Animal Sciences, University of Zanjan, Zanjan, Iran.

M312 Effect of whole cottonseed levels on ruminal parameters of dairy cows grazing elephant grass. J. Cesar Martinez*, F. Augusto Portela Santos, T. Vinhas Voltolini2, A. Vaz Pires2, and C. Maris Machado Brittar2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil.

M313 Effect of whole cottonseed levels on performance of dairy cows grazing elephant grass. J. Cesar Martinez*, F. Augusto Portela Santos, T. Vinhas Voltolini2, M. Antonio Penati2, and A. Mendonça Pedroso2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil.

M314 Effect of whole cottonseed processing on ruminal degradability of dairy cow grazing elephant grass. J. Cesar Martinez*, F. Augusto Portela Santos2, T. Vinhas Voltolini2, and A. Dias Pacheco Júnior2, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil.

M315 Effect of dietary protein on urea concentrations and preovulatory follicle characteristics in dairy cattle. U. Moallem*, R. Blank2, M. Zachut1,2, and A. Arieli2, 1ARO, Bet Dagan, Israel, 2Faculty of Agriculture, Rehovot, Israel.


M317 Comparison of optimal lysine and methionine concentrations in metabolizable protein estimated by the NRC (2001), CPM-Dairy (v.3.0.10) and AMTS.Cattle (v.2.1.1) models. N. Whitehouse*, C. Schwab1, T. Tylutki2, D. Luchini2, and B. Sloan1, 1University of New Hampshire, Durham, 2Integrated Solutions for Sustainable Agriculture, Cortland, NY, 3Adisseo, Atlanta, GA.
M318 Reevaluation of the breakpoint estimates for the NRC (2001) required concentrations of lysine and methionine in metabolizable protein for maximal content and yield of milk protein. C. Schwab*, N. Whitehouse, D. Luchini, and B. Sloan; University of New Hampshire, Durham, Adisseo, Atlanta, GA.

M319 Rumen microbial population shifts in dairy cattle experimentally induced with subacute ruminal acidosis (SARA). E. Khaipour*, S. Li, C. Plaizier, and D. O. Krause, Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.

M320 Molecular population analysis of Escherichia coli associated with subacute ruminal acidosis (SARA) in dairy cattle. E. Khaipour*, J. C. Plaizier, and D. O. Krause, Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.


M322 Estimation of herd level risk of subacute ruminal acidosis on four commercial dairies on the Priority P-One Program. K. Schneider*, D. Mertz, K. Mertz, and R. Breunig; Priority IAC, Manitowoc, WI; Agtech Products, Inc., Waukesha, WI.

M323 Use of magnesium exchanged natural zeolite as a source of ruminal buffer additive for lactating dairy cows. C. M. Dschaak*, J.-S. Eun, A. J. Young, and S. Peterson; Utah State University, Logan; Zeotech Corporation, Fort Worth, TX.

M324 Dietary cation-anion difference with calcium supplementation: Effects on metabolites and health of Holstein periparturient cows. W.-X. Wu* and J.-X. Liu; College of Animal Science, Guizhou University, Guiyang, China; Institute of Dairy Science, Zhejiang University, Hangzhou, China.


M326 Effect of β-carotene supply during close-up dry period on ovulation at the first follicular wave postpartum in dairy cows. C. Kawashima*, S. Nagashima, Y. Fujihara, F. J. Schweigert, K. Sawada, A. Miyamoto, and K. Kida; Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan; University of Potsdam, Potsdam-Rehbrücke, Germany; DSM Nutrition Japan K.K., Tokyo, Japan.

M327 Effect of prepartum diet on rumen bacterial adaptation to a lactation diet fed to dairy cattle. S. E. Stebulis*, D. M. Stevenson, G. J. M. Rosa, P. J. Weimer, and R. R. Grummer; University of Wisconsin, Madison; USDA-ARS US Dairy Forage Research Center, Madison, WI.

M328 Effect of feeding level on the sorting behavior of lactating dairy cows. E. K. Miller-Cushon and T. J. DeVries*; Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.


M331 Concentration of mammalian lignan enterolactone in milk of dairy cows fed different levels of flaxseed hulls. N. Gagnon*, C. Côrtes, C. Benchaar, and H. V. Pettit; Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

M332 Weekly excretion of the mammalian lignan enterolactone in milk of dairy cows fed flaxseed meal. N. Gagnon*, C Côrtes, and H. V. Pettit; Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.


M334 Performance and ruminal fermentation parameters of lactating dairy cows during hot environment. J. P. Wang, J. Q. Wang*; D. P. Bu, F. D. Li, X. K. Huo, T. J. Guo, H. Y. Wei, and L. Y. Zhou; Gansu Agricultural University, Lanzhou, Gansu, China; Chinese Academy of Agricultural Sciences, Beijing, China.
Ruminant Nutrition
Forages

M335 Efficiency of different chemicals in deactivation of phenolic compounds in Sainfoin (Onobrychis viciifolia Scop.). H. Khalilivandi-Behrozayar, M. Dehghan-Banadaki*, and K. RezaYazdi, Research Center of Excellence for Improving Sheep Carcass Quality and Quantity, Animal Science Department, University of Tehran, Karaj, Tehran, I.R. Iran.

M336 The effect of high sugar grass on nitrogen and methane output in cattle: A modeling approach. J. L. Ellis*; A. Bannink2, J. Dijkstra1, A. J. Parsons3, S. Rasmussen4, G. R. Edwards5, E. Kebreab6, and J. France*, 1Centre for Nutrition Modelling, Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 2Animal Sciences Group, Division Animal Production, Wageningen University and Research Centre, Lelystad, The Netherlands, 3Animal Nutrition Group, Wageningen Institute of Animal Sciences, Wageningen University, Wageningen, Then Netherlands, 4AgResearch, Palmerston North, New Zealand, 5Lincoln University, Lincoln, New Zealand, 6Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada.

M337 Lipolysis and biohydrogenation of forage species at vegetative and reproductive stages of growth. A. Cabiddu1, M. R. F. Lee*2, L. Salis1, N. D. Scollan3, and M. L. Sullivan3, 1AGRIS, Sardinia, Italy, 2Aberystwyth University, Wales, UK, 3USDA-DFRC, Madison, WI.

M338 Effects of maturity of alfalfa conserved as silage on intake, productivity, and rumen pools in lactating dairy cows. K. L. Kammes*, Y. Ying, and M. S. Allen, Michigan State University, East Lansing.

M339 Alfalfa silage length of cut interacts with feed intake to affect concentration of milk components in Holstein cows. K. L. Kammes*, Y. Ying, and M. S. Allen, Michigan State University, East Lansing.

M340 Protein fractionation of various whole crop silages, and effect of silage based TMR on fermentation characteristics and degradability in vitro, and ruminal degradability and whole tract digestibility of TMR by cattle. J. Shimokawa*1, G. L. Jin2, S. H. Choi1, B. J. Ji1, X. Z. Li1, and M. K. Song1, 1Department of Animal Science, Chungbuk National University, Cheongju, Chungbuk, Korea, 2Department of Animal Science, Yanbian University, Yanji, Jilin, China.


M343 As corn plants mature, NDF mass decreases. P. M. Walker1, J. M. Carmack*2, L. H. Brown2, and F. N. Owens3, 1Department of Agriculture, Illinois State University, Normal, 2Pioneer Hi-Bred International, a DuPont Business, Johnston, IA.


Teaching/Undergraduate & Graduate Education

M347 An introductory animal cell culture course for animal science, biomanufacturing and biotechnology programs. P. E. Mozdziak*1,2, J. N Petitte1,2, and S. Carson1, 1Biotechnology Program, North Carolina State University, Raleigh, 2Biomanufacturing Program, North Carolina State University, Raleigh.

M348 Justification of university equine extra-curricular activities. M. Nicodemus*, Mississippi State University, Mississippi State.

M349 A practical stem cell culture course for agricultural, life science, and engineering students. J. N. Petitte1,2, P. E. Mozdziak1,2, and S. Carson1, 1North Carolina State University, Biotechnology Program, Raleigh, 2North Carolina State University, Biomanufacturing Program, Raleigh.

M350 Reliability of item scores on end-of-semester departmental course evaluation. M. A. Wattiaux* and P. M. Crump, University of Wisconsin, Madison.

M351 Effect of instructor on use of an informal consumer sensory panel to teach students concepts related to beef palatability. J. A. Daniel*, S. E. Kitts1, and T. D. Pringle2, 1Berry College, Mount Berry, GA, 2University of Georgia, Athens.
Factors influencing student success in an introductory to animal science class. F. M. LeMieux*, T. H. Shields, and J. T. Compton, McNeese State University, Lake Charles, LA.

Introducing a “Nutritional Physiology Webinar” for animal scientists. K. J. Harvatin*, Penn State University, University Park.

Assessment of needs for teaching, research and extension for goat sector. S. Solaiman*, C. Hill, N. Gurung, O. Bolden-Tiller, and C. Okere, Tuskegee University, Tuskegee, AL.

Preferences and backgrounds of incoming students in animal sciences at Tuskegee University. O. U. Bolden-Tiller*, E. Bush, and S. Bruinton, Tuskegee University, Tuskegee, AL.

SYMPOSIA AND ORAL SESSIONS

Alpharma Beef Cattle Nutrition Symposium
Chair: Matt Hersom, University of Florida
Sponsor: Alpharma

9:30 AM Introduction


10:10 AM 10 Interesting but minor ingredients available for use in feedlot formulations. R. A. Zinn*, J. Salinas, and P. Garces, University of California, Davis.

10:45 AM 11 Changes and evolution of corn based co-products for beef cattle. L. Berger* and V. Singh, University of Illinois, Urbana.


Animal Health

Mastitis, Lameness, and Stress
Chair: Gina Pighetti, University of Tennessee, Knoxville
Sponsors: Elanco Animal Health and Pfizer Animal Health

9:30 AM 14 Validation of a novel in-line milk analysis system designed to measure SCC and milk components. H. Karp* and C. S. Petersson-Wolfe, Virginia Polytechnic and State Institute, Blacksburg.

9:45 AM 15 Reproduction and milk loss following clinical mastitis compared among JS vaccinates and controls. D. J. Wilson*, Utah State University, Logan.

10:00 AM 16 Relationships between rumen lipopolysaccharide and mediators of inflammatory response with milk fat production and efficiency in dairy cows. Q. Zebell, S. M. Dunn, and B. N. Ametaj*, University of Alberta, Edmonton, Alberta, Canada.

10:15 AM 17 Joint association of some Staphylococcus aureus genes with in-vitro biofilm formation and sub-clinical intramammary infection. B. V. Le Thanh1,3, C. L. Jacob2,3, S. Messier1,3, F. Malouin2,3, K. Pépin Gaudreau2, and D. Scholl1,3, 1University of Montreal, Saint-Hyacinthe, Quebec, Canada, 2University of Sherbrooke, Sherbrooke, Quebec, Canada, 3Canadian Bovine Mastitis Research Network, Saint-Hyacinthe, Quebec, Canada.

10:30 AM 18 Effect of flunixin meglumine treatment following parturition on cow health and milk production. T. F. Duffield1, H. Putnam-Dingwell1, D. Weary4, A. Skidmore6, L. Neuder5, W. Raphael4, S. Millman3, N. Newby1, and K. E. Leslie1, 1University of Guelph, Guelph, ON, Canada, 2University of British Columbia, Vancouver, ON, Canada, 3Iowa State University, Ames, 4Michigan State University, East Lansing, 5Intervet-Schering Plough, Desoto, KS.

10:45 AM 19 Use of dermal fibroblasts to identify cows with high and low innate immune response potential. S. Kandasamy* and D. E. Kerr, University of Vermont, Burlington.
11:00 AM 20 Effect of farm, housing and management practices on the occurrence of clinical mastitis and pathogen isolation. Y. B. Hunt2 and J. K. Margerison*, 1Massey University, Palmerston North, New Zealand, 2Plymouth University, Newton Abbot, UK.

11:15 AM 21 The effect of lameness in Holstein Friesian dairy cattle on live weight, milk yield, milk let down and milking duration. J. A. Hollis* and J. K. Margerison*, 1Massey University, Palmerston North, New Zealand, 2Plymouth University, Newton Abbot, UK.

11:30 AM 22 A comparison of measures of stress following administration of either lipopolysaccharide (LPS) or corticotropin-releasing hormone (CRH) to Brahman bulls and heifers. L. E. Hulbert*, J. A. Carroll, M. A. Ballou, J. W. Dailey, L. C. Caldwell, A. N. Loyd, N. C. Burdick, R. C. Vann, H. Welsh, Jr., and R. D. Randel, 1Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 2Texas AgriLife Research, Texas A&M System, College Station, 3Texas AgriLife Research, Texas A&M System, Overton, 4Department of Animal and Food Sciences, Texas Tech University, Lubbock, 5MAFES, Mississippi State University, Raymond.


12:00 PM 24 Use of rumen temperature for health monitoring in cattle. L. E. Sims*, T. K. Dye-Rose, C. L. Goad, B. P. Holland, L. O. Burciaga-Robles, D. L. Step, C. R. Krehbiel, and C. J. Richards, 1Department of Animal Science, Oklahoma State University, 2Department of Statistics, Oklahoma State University, 3Veterinary Clinical Sciences, Oklahoma State University.

12:15 PM 25 Relationship between milk fat depression and laminitis in early lactating Holstein cows. M. Vazirigohar*, A. Nejati Javaremi, and A. Nikkhah, University of Tehran, Karaj, Tehran, Iran.

**SYMPOSIUM**

**Bioethics**

*A Scientist’s Guide to Approaching Bioethics*

Chair: Janice Siegfroid, Michigan State University

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9:30 AM Introduction. Diane Van Hekken, Dairy Processing and Products Research, ERRC, ARS, USDA.

9:35 AM 26 Bioethical considerations of food animal products and production. W. R. Stricklin*, University of Maryland, College Park.

10:05 AM Discussion

10:10 AM 27 Thinking critically about bioethical issues. K. K. Schillo*, University of Kentucky, Lexington.

10:40 AM Discussion

10:45 AM 28 A pedagogical tool for scientists faced with ethical issues. C. C. Croney*, The Ohio State University, Columbus.

11:15 AM Questions and overall discussion

**Breeding and Genetics**

**Dairy Cattle Breeding I**

Chair: Kent Weigel, University of Wisconsin

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9:30 AM 29 Using veterinary and milk recording data for a genetic analysis of health traits. J. Moro-Méndez*, E. Bouchard, and R. I. Cue, 1McGill University, Ste-Anne-de-Bellevue, QC, Canada, 2Université de Montréal, Faculté de Médecine Vétérinaire, Saint-Hyacinthe, QC, Canada.

9:45 AM 30 Use of linear and threshold models for analysis of producer-recorded health data in Holstein cattle. T. F. O. Neuenschwander, F. Miglior**, J. Jamrozik, and L. R. Schaeffer, 1CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 2Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Canadian Dairy Network, Guelph, ON, Canada.

10:00 AM 31 Comparison of service-sire fertility evaluations formerly or currently available to the US dairy industry. H. D. Norman*, J. L. Hutchison, and J. R. Wright, Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD.
10:15 AM 32 Analysis of accounting for production in the genetic evaluation of direct herd life in Canadian Holsteins. A. Sewalem*1,2, G. Kistemaker1, and F. Miglior1,2, 1Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2Canadian Dairy Network, Guelph, ON, Canada.

10:30 AM 33 Estimates of residual feed intake in Holstein dairy cattle using an automated, continuous feed intake monitoring system. E. E. Connor*, J. L. Hutchison2, H. D. Norman2, and R. L. Baldwin, VI, 1USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, 2USDA-ARS, Animal Improvement Programs Laboratory, Beltsville, MD.

10:45 AM 34 Break

11:00 AM 35 Trends for monthly changes in days open in Holsteins. M. Pszczola*1,2, I. Aguilar1,3, and I. Misztal1, 1University of Georgia, Athens, 2Animal Breeding and Genetics Group, Wageningen University, Wageningen, the Netherlands, 3Instituto Nacional de Investigación Agropecuaria, Las Brujas, Uruguay.

11:15 AM 36 Effects of milk fat composition, DGAT1 and SCD1 on fertility traits in Dutch Holstein cattle. R. M. Demeter*1,2, G. C. B. Schoopen1, A. G. J. M. Oude Lansink1, M. P. M. Meuwissen2, and J. A. M. van Arendonk1, 1Animal Breeding and Genetics Centre, Wageningen University, Wageningen, the Netherlands, 2Business Economics Group, Wageningen University, Wageningen, the Netherlands.

11:30 AM 37 Deriving final score from linear traits for the Italian Holstein cattle. S. Bliffani, F. Canavesi*, and R. Finocchiaro, ANAFI, Cremona, Italy.

11:45 AM 38 Modelling technical parameters of individual extended lactation curves in Italian Holsteins. R. Steri1, E. L. Nicolazzi2, G. Gaspa1, F. Canavesi1, C. Dimauro1, and N. P. P. Maccio2, 1Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italia, 2Associazione Nazionale Allevatori Frisona Italiana, Cremona, Italia.

Breeding and Genetics
Molecular Genetics I
Chair: Curt Van Tassell, USDA-ARS
524

9:30 AM 38 Hybridization quality diagnostics using control probes on long-oligonucleotide microarrays: An application to the Pigoligoarray. J. P. Steibel*1, M. Wysocki2, V. D. Rilington3, A. M. Ramos1,3, J. K. Lunney3, and C. W. Ernst3, 1Michigan State University, East Lansing, 2ANRI, BARC, ARS, USDA, Beltsville, MD, 3Wageningen University, Wageningen, the Netherlands.

9:45 AM 39 Low density SNP chip for non-genotyped animals. H. Wang*1 and R. Rekaya1,2, 1Department of Animal and Dairy Science, 2University of Georgia, Athens.

10:00 AM 40 An approach to predict and manage Mendelian sampling variation based on dense SNP data. G. Abdel-Azim*, Genex Cooperative Inc., Shawano, WI.


10:30 AM 42 Break

10:45 AM 43 Transcriptional profiling during fetal skeletal muscle development of Piau and commercial pigs. B. P. Sollero*1,2, V. D. Rilington1, R. J. Tempelman1, S. E. F. Guimarães1, J. D. Guimarães1, M. S. Lopes1, N. E. Raney1, J. P. Steibel1, and C. W. Ernst1, 1Michigan State University, East Lansing, 2Federal University of Viçosa, Viçosa, MG, Brazil.

11:00 AM 44 Extent of linkage disequilibrium in purebred and crossbred beef cattle. D. Lu*, M. Sargolzaei2, M. Kelly1, G. Vander Voort1, Z. Wang2, J. Mah2, G. Plastow1, S. Moore2, and S. Miller1, 1University of Guelph, Guelph, Ontario, Canada, 2University of Alberta, Edmonton, Alberta, Canada.

11:15 AM 45 Construction of LD maps for SNPs linked to susceptibility loci. L. Gomez-Raya*, University of Nevada, Reno.

11:30 AM 46 Characterization of a whole-genome map of single nucleotide polymorphisms applied to two selection lines in British dairy cattle. G. Banos* and M. P. Coffey2, 1Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece, 2Sustainable Livestock Systems, Scottish Agricultural College, Edinburgh, Scotland, UK.
**Graduate Student Paper Competition**  
**ADSA-ASAS Northeast Section**  
**Chair: Kristen E. Goveni, University of Connecticut**  
513ab

9:30 AM 46  

9:45 AM 47  
Feeding anionic salts in the prefresh period, the addition of sodium bicarbonate to colostrum replacer and their effects on IgG absorption in the neonate. K. M. Morrill*, S. P. Marston, N. L. Whitehouse, and P. S. Erickson, *University of New Hampshire, Durham.

10:00 AM 48  
Intramammary infections in pasture-based dairy cows supplemented with barium selenate before calving. A. Ceballos*, J. Kruize*, I. R. Dohoo1, J. Sanchez1, H. W. Barkema*1, J. J. Wichtel1, and F. Wittwer1, 1Centre for Veterinary Epidemiologic Research, University of Prince Edward Island, Charlottetown, Prince Edward Island, Canada, 2Institute of Microbiology, Universidad Austral de Chile, Valdivia, Chile, 3Canadian Food and Inspection Agency, Charlottetown, Prince Edward Island, Canada, 4Department of Production Animal Health, University of Calgary, Calgary, Alberta, Canada, 5Institute of Veterinary Clinical Sciences, Universidad Austral de Chile, Valdivia, Chile.

10:15 AM 49  

10:30 AM 50  
Effects of level of concentrate supplementation on milk production and ruminal pH in lactating cows on pasture. G. R. Clevenger*, L. R. Tager, and K. M. Krause, West Virginia University, Morgantown.

10:45 AM 51  
Use of in vitro and in vivo tests to characterize gastrointestinal nematode anthelmintic resistance on sheep and goat farms in the mid-Atlantic U.S. E. K. Crook*1, D. J. O’Brien1, N. C. Whitley2, R. M. Kaplan3, and J. M. Burke4, 1Delaware State University, Dover, 2North Carolina A&T State University, Greensboro, 3University of Georgia, Athens, 4USDA, ARS, Booneville, AR.

11:00 AM 52  
Effects of cinnamaldehyde, eugenol, and capsaicin on rumen fermentation in continuous culture. L. R. Tager* and K. M. Krause, West Virginia University, Morgantown.

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**Graduate Student Paper Competition**  
**CSAS Graduate Student Oral Competition 1**  
**Chair: Luigi Faucitano, Agriculture and Agri-Food Canada**  
514

9:30 AM 53  
Plant-based diets enriched with linseed oil or marine algae and organic selenium modify sperm fertility parameters in broiler breeders over the reproductive cycle. C. Coss*1,2, C. Bégué3, R. Gervais3, C. Lessard1,2, D. Venne1, M. R. Lefrançois1, P. Y. Chouinard2, G. Vandenberg2, and J. L. Bailey1,2, 1Centre de recherche en biologie de la reproduction, Québec, Québec, Canada, 2Département des sciences animales, Université Laval, Québec, Québec, Canada, 3Couvoir Scott Liée, Scott Jonction, Québec, Canada.

9:45 AM 54  
The effect of two calving seasons on cow and calf performance in western Canada. L. C. Girardin*, H. A. Lardner2, A. D. Iwaasa1, S. L. Scott*2, and S. H. Hendrick1, 1University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Western Beef Development Centre, Lanigan, Saskatchewan, Canada, 3Agriculture and Agri-Food Canada - Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada, 4Agriculture and Agri-Food Canada - Brandon Research Centre, Brandon, Manitoba, Canada.

10:00 AM 55  

10:15 AM 56  
Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed varying dietary protein concentrations. D. Kiran* and T. Mutsvangwa, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

10:30 AM 57  
Comparison of NRC–2001 chemical approach with biological approach (in situ animal study) in the determination of digestible nutrients and energy values of dry distillers grains with solubles in ruminants. W. G. Nuez Ortin* and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.

10:45 AM 58  
Effect of butyrate absorption on the severity of subacute ruminal acidosis. G. B. Penner*, J. R. Aschenbach2, G. Gäbel1, and M. Oba1, 1University of Alberta, Edmonton, AB, Canada, 2Universität Leipzig, Leipzig, Germany.
11:00 AM 59  Comparison of wheat or corn dried distillers grains with solubles (DDGS) on performance and carcass characteristics of feedlot steers. L. J. Walter*, J. L. Alahus*, W. M. Robertson†, T. A. McAllister‡, D. J. Gibb‡, M. E. R. Dugan‡, N. Aldai†, and J. J. McKinnon†, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

11:15 AM 60  Effect of graded levels of wheat-based dried distillers grains with solubles on rumen fermentation in finishing cattle. R. M. Beliveau*†, 1 and J. J. McKinnon†, 1Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2University of Saskatchewan, Saskatoon, Canada.

11:30 AM 61  Impact of feed waste on the nutrition and economics of wintering beef cows. B. J. Yaremcio*, E. K. Okine†, M. Oba‡, and D. McCartney‡, 1Alberta Agriculture and Rural Development, Canada, 2University of Alberta, Canada, 3Agriculture and Agri-Food Canada, Canada.


12:00 PM 63  Fertility of Alpine goats following oestrus synchronisation with CIDR and artificial insemination with cryopreserved semen. M.-E. Marier*, F. Castonguay‡, M. Theriault‡, D. Cinq-Mars‡, C. Lessard‡, and J. L. Bailey‡, 1Centre de recherche en biologie de la reproduction, 2Département des sciences animales, Université Laval, Québec City, 3Dairy & Swine Research and Development Center, AAFC, Lennoxville.

Graduate Student Paper Competition
National ADSA Dairy Foods
Chair: Kanyanush J. Aryana, Louisiana State University Agricultural Center

9:30 AM 65  Structure-function relationship of exopolysaccharides from lactic acid bacteria in fermented milk. M.-C. Gentès*†, D. St-Gelais‡, and S. L. Turgeon‡, 1STELA Dairy Research Centre and Institute of Nutraceuticals and Functional Foods, Laval University, Quebec city, Quebec, Canada, 2Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, Quebec, Canada.


10:00 AM 67  Evaluation of heated milkfat flavor profile and its effect on buttery flavor in cheese. E. L. Harvey* and S. A. Rankin, University of Wisconsin, Madison.

10:15 AM 68  Are the physico-chemical properties of the casein micelle modified by ultrafiltration? M. A. Ferrer*‡, M. Alexander‡, and M. Corredig‡, 1University of Zulia, Maracaibo, Zulia, Venezuela, 2University of Guelph, Guelph, Ontario, Canada.

10:30 AM  Break

10:45 AM 69  Isolation of a whey fraction rich in α-lactalbumin from skim milk through microfiltration. B. Holland*†, J. Kacmar§, and M. Corredig§, 1University of Guelph, Guelph, ON, Canada, 2NCSRT, Raleigh, NC.

11:00 AM 70  Production efficiency of a serum protein (SP) reduced micellar casein concentrate (MCC) produced with polymeric spiral-wound microfiltration (MF) membranes. S. L. Beckman*, J. Zulewska‡, M. Newbold‡, and D. M. Barbano‡, 1Cornell University, Ithaca, NY, 2University of Warmia and Mazury, Olsztyn, Poland.

11:15 AM 71  Retention of vitamin D fortified emulsions in bench-top cheese. M. Tippets*†, S. Martini‡, C. Brothersen‡, and D. McMahon‡, 1Utah State University, Logan, 2Western Dairy Center, Logan, UT.

11:30 AM 72  Low fat Mozzarella cheese with improved baking and melting properties. R. Wadhwani* and D. J. McMahon, Utah State University, Logan.

11:45 PM 73  Effects of starch addition on a low-fat cheese model system. K. M. Larsen*†, D. J. McMahon‡, and W. R. McManus‡, 1Western Dairy Center, Logan, UT, 2Utah State University, Logan.

12:00 PM 524  Genotyping for strain-level differentiation of Bifidobacterium animalis ssp. lactis. J. R. Loquasto*†, E. P. Briczinski‡, A. M. Roberts‡, E. G. Dudley†, R. Barrangou§, and R. F. Roberts†, 1Pennsylvania State University, State College, 2University of Wisconsin, Madison, 3Danisco USA Inc., Madison, WI.

12:15 PM 752  An on-line light backscatter sensor at 980 nm for monitoring curd moisture and whey solids contents with a cooking step during syneresis in a cheese vat. M. J. Mateo*†, C. D. Everard‡, C. P. O'Donnell†, M. Castillo‡, F. A. Payne‡, and D. J. O'Callaghan‡, 1Teagasc, Cork, Ireland, 2University College Dublin, Dublin, Ireland, 3University of Kentucky, Lexington.
Graduate Student Paper Competition
National ADSA Production MS Oral
Chair: Mike McGilliard, Virginia Tech
513cd

9:30 AM 74 Effects of conjugated linoleic acid isomers on mammary gland development in BALB/cJ mice. J. M. Gloczicki*, J. Kraft1, A. L. Lock1, J. F. Trott1, and R. C. Hovey1, 1University of California, Davis, 2University of Vermont, Burlington.


10:00 AM 76 Comparison of real-time PCR and culture for detection and speciation of Mycoplasma species in bulk tank milk samples. A. Justice-Allen*1, G. Goodell2, J. Trujillo1, and D. Wilson1, 1Utah State University, Logan, 2Dairy Authority, Greeley, CO.

10:15 AM 77 Intermediates of linoleic acid biohydrogenation in ruminal batch cultures dosed with uniformly 13C labeled linoleic acid. C. M. Klein* and T. C. Jenkins, Clemson University, Clemson, SC.

10:30 AM 78 Effect of an exogenous fibrolytic enzyme or ammonia on fiber concentration, feed intake, digestibility, and ruminal pH of steers fed bermudagrass hay harvested at two maturity stages. J. J. Romero*, A. T. Adesogan, M. A. Zarate, O. C. M. Queiroz, J. Han, K. G. Arriola, C. M. Huisden, C. R. Staples, and M. Garcia, University of Florida, Gainesville.

10:45 AM 79 Supplemental starch in postpartum dairy cow diets: 2. Effects on reproduction. B. L. Dyck1*, M. G. Colazo1, D. J. Ambrose1, M. K. Dyck1, and L. Doepel1, 1University of Alberta, Edmonton, AB, Canada, 2Alberta Agriculture and Rural Development, Edmonton, AB, Canada.

11:00 AM 80 Accuracy of an on-farm blood test for pregnancy in dairy and beef cattle. J. C. Green*, D. H. Volkman1, S. E. Poock1, M. F. McGrath2, M. Ehrhardt1, A. E. Moseley2, and M. C. Lucy1, 1University of Missouri, Columbia, 2Monsanto Co., St. Louis, MO.


11:30 AM 82 Fecal and urinary estrogens in dairy heifers during the estrous cycle. H. A. Tucker*, K. F. Knowlton1, and N. G. Love1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2University of Michigan, Ann Arbor.

11:45 AM 83 Low progesterone concentration during the development of the first follicular wave impairs fertility of lactating dairy cows. A. C. Denicol1*, G. Lopes Jr1, L. G. D. Mendonça1, F. A. Rivera1, F. Guagnini1, R. V. Perez1, J. R. Lima1, R. G. S. Bruno1, J. E. P. Santos1, and R. C. Chebel1, 1University of California, Tulare, 2University of Florida, Gainesville.

Graduate Student Paper Competition
National ADSA Production PhD Oral
Chair: Matthew Lucy, University of Missouri
513ef

9:30 AM 84 Expression of inducible nitric oxide synthase is up-regulated by production of 1,25-dihydroxyvitamin D3 in bovine monocytes in response to toll-like receptor signaling. C. D. Nelson*1,2, D. C. Beitz1, T. A. Reinhardt2, and J. D. Lippolis2, 1Iowa State University, Ames, 2National Animal Disease Center, United States Department of Agriculture, Ames, IA.

9:45 AM 85 Regulation of bovine pyruvate carboxylase mRNA and promoter expression by heat stress. H. M. White*, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.

10:00 AM 86 Activation of AMP-activated protein kinase (AMPK) inhibits de novo fatty acid synthesis in bovine mammary epithelial cells. J. W. McFadden* and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.

10:15 AM 87 Evaluation of effects of fibrolytic enzyme application on the digestibility of corn silage, alfalfa hay, and two concentrates and complete diets under simulated ruminal and preruminal conditions. K. G. Arriola* and A.T. Adesogan, University of Florida, Gainesville.

10:30 AM 88 Comparison of a controlled-energy high-fiber diet fed throughout the dry period to a two-stage far-off and close-up dietary strategy. B. F. Richards1*, N. A. Janovick1, K. M. Moyses1, D. E. Beever1, and J. K. Drackley1, 1University of Illinois, Urbana, 2Richard Keenan & Co., County Carlow, Ireland.
10:45 AM 89 Effects of addition of live bacterial inoculants and glycerol to the diet of lactating dairy cows on apparent efficiency and milk yield during heat stress. J. Boyd*, J. W. West¹, J. Bernard¹, J. Loften², and D. R. Ware¹, ¹University of Georgia, Tifton, ²Nutrition Physiology Corporation, St. Cloud, MN.

11:00 AM 90 Subacute ruminal acidosis decreases acetate absorption across the isolated ruminal epithelia. G. B Penner*, J. R. Aschenbach¹, G. Gäbel¹, and M. Oba¹, ¹University of Alberta, Edmonton, AB, Canada, ²Universität Leipzig, Leipzig, Germany.

11:15 AM 91 Effect of feed bin stacking density on the feeding and standing behavior of postpartum dairy cows. P. D. Krawczel*¹, D. M. Weary¹, R. J. Grant¹, and M. A. G. von Keyserlingk¹, ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²The University of Vermont, Burlington, ³University of British Columbia, Vancouver, BC, Canada.


12:00 PM 94 Effects of maternal lineage on production and fertility traits of Holstein cattle. C. N. Vierhout*, S. P. Washburn, R. L. McCraw, and E. J. Eisen, North Carolina State University, Raleigh.

12:15 PM 95 Use of acaricides and gastrointestinal anthelmintics in developing countries: A case study among livestock farmers in Ghana. W. Addah*, J. Baah¹, and E. K. Okine¹, ¹University of Alberta, Edmonton, Alberta, Canada, ²Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada.

Nonruminant Nutrition
Feed Ingredients
Chair: Randy Walker, DPI Global
Sponsor: Danisco Animal Nutrition
518

9:30 AM 228 Prediction of DE content of common ingredients in grower pigs using an in vitro digestibility technique. P. R. Regmi*¹, N. S. Ferguson², A. Pharazyn², L. F. Wang², and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²Nutreco Canada, Guelph, ON, Canada.


10:00 AM 97 Canola meals from yellow-seeded Brassica napus and B. juncea have a higher digestible and net energy content in pigs than the meal from black-seeded B. napus. C. A. Montoya, K. Neufeld, P. Kish, and P. Leterme*, Prairie Swine Centre Inc., Saskatoon, SK, Canada.

10:15 AM 98 Chemical composition and nutritive value of yellow-seeded canola for broiler chickens. W. Jia*, B. A. Slominski¹, G. Rakow², and D. Hickling¹, ¹University of Manitoba, Winnipeg, MB, Canada, ²Agriculture and Agri-Food Canada, Saskatoon, SK, Canada, ³Canola Council of Canada, Winnipeg, MB, Canada.

10:30 AM 99 Effect of grinding on the digestible and net energy content of field peas (Pisum sativum) in growing pigs. C. A. Montoya, K. Neufeld, P. Kish, and P. Leterme*, Prairie Swine Centre Inc., Saskatoon, SK, Canada.


11:00 AM 101 Prediction of barley grain feed value for swine using near infrared reflectance spectroscopy (NIRS). M. L. Swift*, L. Oatway¹, R. T. Zijlstra¹, W. C. Sauer³, and J. H. Helm¹, ¹Alberta Agriculture and Rural Development, Lacombe, AB, Canada, ²University of Alberta, Edmonton, AB, Canada.

11:15 AM 102 Prediction of metabolizable energy value of meat and bone meal for swine using near infrared reflectance analysis. O. A. Olukosi* and O. Adeola, Purdue University, West Lafayette, IN.

11:30 AM 103 Nutritive value of distillers dried grains with solubles (DDGS) for poultry. A. Rogiewicz*, B. A. Slominski, M. Mogielenicka, C. M. Nyachoti, and K. M. Wittenberg, University of Manitoba, Winnipeg, Canada.

11:45 AM 104 Effects of distillers dried grains with solubles on the digestibility of energy, DM, AA, and fiber, and intestinal transit time in a corn-soybean meal diet fed to growing pigs. P. E. Urriola* and H. H. Stein, University of Illinois, Urbana.
Production, Management and the Environment
Environment
Chair: Karen Koenig, Agriculture and Agri-Food Canada
510bd


9:45 AM 106 Ammonia emissions from beef feedlot cattle fed corn-based backgrounds and finishing diets varying in protein concentration and source. K. M. Koenig*, S. M. McGinn, and K. A. Beauchemin, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

10:00 AM 107 Methane emissions from finishing beef cattle offered maize silages harvested at four different stages of maturity. E. Mc Geough*1,2, P. O'Kiely1, T. M. Boland3, K. J. Hart4, P. A. Foley5, and D. A. Kenny6, 1Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 2School of Agri., Food Sci. & Vet. Med., University College Dublin, Belfield, Dublin, Ireland.


10:30 AM 109 On-farm evaluation and demonstration of ammonia reduction best management practices (BMPs) for feedlots and dairies. N. M. Marcillac-Emberton*, J. Pritchett, J. L. Collett, and J. G. Davis, Colorado State University, Fort Collins.


11:00 AM 111 Modifying available grazing time to increase dairy cow urine capture. C. E. F. Clark*, K. L. M. McLeod1, C. B. Glassey1, and J. G. Jago2, 1DairyGH, Hamilton, Waikato, New Zealand, 2AgResearch, Palmerston North, Manawatu, New Zealand.

Ruminant Nutrition
Dairy 1
Chair: Allen Young, Utah State University
516c

9:30 AM 112 Production of angiopoietin-like protein 4 in ruminal tissue is decreased with increasing dietary fermentability. L. K. Mamedova*, G. B. Penner1, K. A. Beauchemin2, M. Oba3, and B. J. Bradford4, 1Kansas State University, Manhattan, 2University of Alberta, Edmonton, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada.

9:45 AM 113 Mammary transcriptomics response to milk fat-depressing or milk fat-enhancing diets in lactating dairy cows. G. Invernizzi*1,2, B. J. Thering1, D. E. Graugnard1, P. Plantoni1, M. A. McGuire2, G. Savoini2, and J. J. Loor3, 1University of Illinois, Urbana, 2University of Milan, Milan, Italy, 3University of Idaho, Moscow.

10:00 AM 114 Mammary glucose metabolism in response to energy and/or protein supply in lactating dairy cows. S. Lemosquet*1,2, F. Bardey1, H. Rulquin1, H. Lapierre1, and J. Guinard-Flament1, 1INRA, Rennes, France, 2Agrocampus ouest, Rennes, France, 3Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.


9:45 AM 128 Residual feed intake in Nellore heifers selected for growth. R. H. Branco¹, S. F. M. Bonilha¹, D. P. D. Lanna², L. A. Figueiredo¹, L. Calegare³, and A. G. Razook¹, ¹School of Veterinary Medicine, Faculty of Veterinary, UdelaR, Montevideo, Uruguay, ²Department of Animal Nutrition, Faculty of Veterinary, UdelaR, Montevideo, Uruguay, ³Nutron Alimentos LTDA, Toledo, Paraná, Brazil.

10:00 AM 129 Relationships between residual feed intake and apparent nutrient digestibility, in vitro methane producing activity and VFA concentrations in growing Brangus heifers. W. K. Krueger¹, G. E. Carstens¹, R. R. Gomez*, B. M. Bourg², P. A. Lancaster², L. J. Slay², J. C. Miller³, R. C. Anderson⁴, S. M. Horrocks⁵, N. A. Krueger⁵, and T. D. A. Forbes⁴, ¹Inter collegiate Faculty of Nutrition - Texas A&M University, College Station, ²Department of Animal Science - Texas A&M University, College Station, ³USDA, ARS, Food and Feed Safety Research Unit, College Station, TX, ⁴Texas Agrilife Research - Texas A&M University, Uvalde.


10:30 AM 131 Frequency of supplementation of a soyhull/corn gluten feed mix does not affect performance of growing cattle fed hay. M. E. Drewnoski* and M. H. Poore, North Carolina State University, Raleigh.

10:45 AM 132 Effect of energy source on leucine utilization and nitrogen retention in growing steers. K. S. Spivey*, E. C. Titgemeyer, and M. L. Jones, Kansas State University, Manhattan.

11:00 AM 133 Steer performance and digestibility when fed stocker diets with soyhull, corn gluten feed and distillers grain. G. M. Hill*, V. A. Corricker², D. J. Renney², and A. J. Nichols³, ¹The University of Georgia, Tifton, ²Texas AgriLife Ext. Ctr., Overton, TX.

Feeding dried distillers grains in lieu of standard range cubes to pregnant beef cows consuming low quality roughages improved economic returns with limited impacts on serum urea nitrogen or trace mineral status of the cows or their offspring. K. L. Swyers*, M. J. Jarosz†, L. W. Douglass‡, and S. L. Archibeque§, 1Colorado State University, Department of Animal Sciences, Fort Collins, 2University of Maryland, Department of Animal and Avian Sciences, College Park.

A meta-analysis evaluation of supplementing dried distillers grains plus solubles to cattle consuming forage based diets. W. A. Griffin*, V. R. Bremer†, T. J. Klopfenstein†, L. A. Stalker†, L. W. Lomas‡, J. L. Moyer‡, and G. E. Erickson§, 1University of Nebraska, Lincoln, 2West Central Research and Extension Center, North Platte, NE, 3Southeast Agricultural Research Center, Parsons, KS.


Effect of ZADO®, as enzymes from anaerobic bacterium, on extent of ruminal fermentation, nutrient digestibilities and average daily gain in steers. H. Gado* and B. E. A. Borhami‡, 1Ain-Shams University, Dept. of Animal Production, Faculty of Agriculture, Cairo, Egypt, 2Alexandria University, Dept. of Animal Production, Faculty of Agriculture, Alexandria, Egypt.

SYMPOSIUM
Teaching/Undergraduate and Graduate Education
Enhancing the Writing Experience
Chair: C. L. Hicks, University of Kentucky
512ae


9:35 AM Making the writing experience right. D. K. Aaron*, University of Kentucky, Lexington.


10:15 AM Discussion

10:20 AM Incorporating journals and journal writing into the teaching and learning process. A. Zimmerman*, The Ohio State University, Wooster.

11:20 AM Break

11:30 AM Incorporating writing assignments in large animal science courses. J. A. Sterle*, Texas A&M University, College Station.

11:40 AM Journal writing. C. L. Hicks*, University of Kentucky, Lexington.


12:00 PM Panel discussion. All participants.

SYMPOSIUM
ASAS-ADSA Cell Biology Symposium
Chair: B. W. Hess, University of Wyoming
Sponsors: ASAS, ADSA, USDA, and EAAP
511ad

10:00 AM Introductions. B. W. Hess.

10:05 AM Redox regulation of cysteine-dependent enzymes. R. P. Guttmann*, University of Kentucky, Lexington.


11:05 AM Mammalian epididymal glutathione peroxidases control the maintenance of sperm DNA integrity. E. Chabory, P. Vernet, R. Cadet, F. Saez, and J. R. Drevet*, GRED, Clermont Université, Aubiere, France.
### A theoretical approach to sperm preservation based upon mitochondrial energetics.
D. P. Froman*, Oregon State University, Corvallis.

### ADSA-SAD (Student Affiliate Division) Undergraduate Competition
**Dairy Foods**
**Chair: Larry Fox, Washington State University**
**520ad**

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<th>Time</th>
<th>Paper</th>
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<tbody>
<tr>
<td>11:00 AM</td>
<td>Consumer fluid milk choices: Balancing nutrition, safety, cost, and emotions. K. Bolen* and L. Timms, Iowa State University, Ames.</td>
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<tr>
<td>11:15 AM</td>
<td>Raw milk: The controversy continues. S. Stelly*, Louisiana State University, Baton Rouge.</td>
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<tr>
<td>11:30 AM</td>
<td>Human health benefits of bovine colostrum. P. F. Welch*, D. R. Winston, and R. E. James, Virginia Polytechnic Institute and State University, Blacksburg.</td>
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<tr>
<td>11:45 AM</td>
<td>Importance of conventional dairy products in young adult diets. K. M. Stomack* and E. L. Karcher, Michigan State University, East Lansing.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Risks associated with raw milk consumption. A. M. Harshbarger*, The Pennsylvania State University, University Park.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Defending the US milk supply with a novel bulk milk transportation security system. C. N. Gravatte* and C. D. Thompson, University of Kentucky, Lexington.</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>On farm pasteurization: Finding a niche market. J. T. Price*, Clemson University, Clemson, SC.</td>
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</tbody>
</table>

### Graduate Student Paper Competition
**ADSA Southern Section**
**Chair: Albert DeVries, University of Florida**
**513ab**

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper</th>
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<tbody>
<tr>
<td>11:30 AM</td>
<td>Phosphorus and other nutrient disappearance from plants containing condensed tannins using the mobile nylon bag technique. S. Pagán-Riestra*, J. P. Muir, B. D. Lambert, L. O. Tedeschi, and L. Redmon, Texas A&amp;M University, College Station, Texas AgriLife Research, Stephenville, TX, Texas AgriLife Extension, College Station, TX.</td>
</tr>
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</table>

### SYMPOSIUM
**Dairy Foods**
**Milk Protein Fractionation Symposium**
**Chair: Lloyd Metzger, South Dakota State University**
**Sponsor: DMI**
**513cd**

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<tr>
<th>Time</th>
<th>Paper</th>
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<tr>
<td>1:30 PM</td>
<td>Introduction to milk protein fractionation symposium. L. E. Metzger*, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.</td>
</tr>
<tr>
<td>1:40 PM</td>
<td>Global use, opportunities and challenges for dairy proteins. P. Tong*, Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.</td>
</tr>
<tr>
<td>2:05 PM</td>
<td>Isolation of serum proteins from milk. D. M. Barbano and J. Zulewska, Cornell University, Ithaca, NY, University of Warmia and Mazury, Olsztyn, Poland.</td>
</tr>
</tbody>
</table>

An integrated processing system to produce beta-casein, native whey protein and casein concentrates from whole milk. J. Lucey and K. Smith, \(1\) Department of Food Science, University of Wisconsin, Madison, \(1\) Wisconsin Center for Dairy Research, University of Wisconsin, Madison.

Charged ultrafiltration membranes for whey protein fractionation. M. Etzel* and S. Bhushan, University of Wisconsin, Madison.

Utilization of supercritical carbon dioxide to produce milk protein fractions. P. M. Tomasula*, L. M. Bonnaille, and P. X. Qi, Dairy Processing and Products Research Unit, USDA/ARS/ERRC, Wyndmoor, PA.

Wrap-up and closing. L. E. Metzger.

SYMPOSIUM
ADSA Southern Section Symposium
Dairy Replacement Health Challenges in the Southeastern U.S.
Chair: David Winston, Virginia Polytechnic Institute and State University

Advances in colostrum management. S. Godden*, S. Wells, J. Stabel, D. Haines, R. Bey, J. Fetrow, P. Pithua, and M. Donahue, \(1\) University of Minnesota, St. Paul, \(2\) USDA, ARS, National Animal Disease Center, Ames, IA, \(3\) University of Saskatchewan, Saskatoon, SK, Canada.

Development of vaccination programs that enhance heifer immune systems. G. Goodell, Dairy Authority, Greeley, CO.

Strategies to minimize the impact of heat stress on heifer health and performance. J. W. West*, University of Georgia, Tifton.

Differences in health and survivability between purebred and crossbred heifers. B. Cassell, Virginia Polytechnic Institute and State University, Blacksburg.

Producer’s perspective on heifer health challenges in the Southeast and strategies to manage them. B. Patrick, Veterinarian, GA.

ADSA Southern Section Business Meeting

ADSA-SAD (Student Affiliate Division) Undergraduate Competition
Dairy Production
Chair: Larry Fox, Washington State University

The impact of genomic selection on A.I. companies, today and tomorrow. K. L. Westaby* and L. H. Kilmer, Iowa State University, Ames.

Pre-planning considerations for on-farm dairy processing enterprises. E. A. Chaney*, University of Kentucky, Lexington.

Bovine genomics: Mapping the future of the dairy industry. V. Eubanks*, Clemson University, Clemson, SC.


Blood pregnancy tests as alternatives to transrectal examinations. N. J. Heim*, The Pennsylvania State University, University Park.
3:30 PM 175  Contracted tendons in calves. M. Reed*, Louisiana State University, Baton Rouge.

3:45 PM 176  The effects of breeding for increased milk production in dairy cattle on other productive traits. G. A. Carpenter* and E. L. Karcher, Michigan State University, East Lansing.

ADSA-SAD (Student Affiliate Division) Undergraduate Competition

Original Research
Chair: Larry Fox, Washington State University

520be

2:00 PM 177  Feeding brown midrib forage sorghum silage and wet corn gluten feed to lactating dairy cows. C. S. Heine*, 1 P. J. Kononoff2, J. F. Pedersen2, A. G. Geis1, and A. M. Gehman3, 1University of Nebraska, Lincoln, 2USDA-ARS Grain, Forage, and Bioenergy Research Unit, Lincoln, NE.

2:15 PM 178  Measuring the citrate content in milk, mammary epithelial cells, and blood using capillary electrophoresis. M. J. Howell* and R. Jimenez-Flores, California Polytechnic State University, San Luis Obispo.

2:30 PM 179  Effects of black hair coat color in neonatal Holstein bull calves. A. J. Krenek*, G. A. Holub, and J. E. Sawyer, Texas A&M University, College Station.

2:45 PM 180  The effect of TGF-β1 on cell proliferation in the bovine mammary gland during the dry period. K. Weiss*, L. DeVries, H. Dover, T. Casey, J. Liesman, M. VandeHaar, and K. Plaut, Michigan State University, East Lansing.


3:15 PM 182  Microbial growth in refrigerated colostrum over seven days. M. Beyer* and S. I. Kehoe, University of Wisconsin, River Falls.


4:00 PM 185  The effects of betaine on free choice water intake and vital signs related to heat stress of neonatal Holstein bull calves. J. L. Clark*, G. A. Holub, and J. E. Sawyer, Texas A&M University, College Station.


4:30 PM 187  Performance of weaning goats when fed a mixed concentrate with dried distillers grains compared to a pelleted concentrate. J. Popowski**, M. Raeth-Knight1, T. Walsh2, J. Linn1, and R. Larson2, 1University of Minnesota, St. Paul, 2Hubbard Feeds, Mankato, MN.

4:45 PM 188  The effects of in-vivo derived trophoblastic vesicles on corpus luteum lifespan and serum progesterone concentrations in dairy cattle. E. R. Waggoner*, J. L. Fain, and J. R. Gibbons, Clemson University, Clemson, SC.

Animal Health

Immunity and Swine Health

Chair: Jeffery Escobar, Virginia Polytechnic Institute and State University

Sponsors: Elanco Animal Health and Pfizer Animal Health

511cf

2:00 PM 189  Pea dietary fiber for adhesion and excretion of enterotoxigenic E. coli K88 to prevent intestinal colonization. P. M. Becker*, P. G. van Wikselaar, A. J. M. Jansman, and J. van der Meulen, Animal Sciences Group of Wageningen UR, Lelystad, the Netherlands.

2:15 PM 190  Health benefits of yeast derivates: In vitro and in vivo investigation. A. Ganner* and G. Schatzmayr, BIOMIN Research Center, Tulln, Lower Austria, Austria.


Influence of an *in vivo* endotoxin challenge on *ex vivo* phagocytic and oxidative burst capacities of bovine neutrophils. M. A. Ballou*, L. E. Hulbert*, L. R. Schwertner*, J. A. Carroll†, L. C. Caldwell‡, R. C. Vann‡, T. H. Welsh Jr.‡, and R. D. Randel‡, *Texas Tech University, Lubbock, Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, †Texas AgriLife Research, College Station, ‡Texas A&M System, Overton, §MAFES, Mississippi State University, Raymond*.


Genotypic profiling of enterococci isolated from bovine origin. B. A. Stewart**, T. H. Yang‡, J. S. Hogan‡, and C. S. Petersson-Wolfe‡, *Virginia Tech, Blacksburg, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster*.


**SYMPOSIUM**

**Bioethics**

**Working through Bioethical Issues in Practice**

**Chair:** Janice Siegford, Michigan State University

**Sponsor:** Monsanto

511be

2:00 PM  Introductions. J. Siegford, Michigan State University.

2:05 PM  Introduction of case exercises and working process

2:20 PM  Work on cases in small groups.

3:50 PM  Group presentations on working processes and conclusions

4:50 PM  Summary and discussion

**SYMPOSIUM**

**Breeding and Genetics**

**Whole Genome Selection - The New Frontier?**

**Chair:** Janice M. Rumph, Michigan State University

524

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

2:10 PM  National and international genomic evaluations for dairy cattle. P. M. VanRaden* and P. G. Sullivan‡, USDA Animal Improvement Programs Laboratory, Beltsville, MD, ‡Canadi...
<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:20 PM</td>
<td>Break</td>
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<tr>
<td>3:50 PM</td>
<td>Utilization of next generation sequencing technologies for development of a high-density pig SNP genotyping platform. R. P. M. A. Croomans*, M. A. M. Groenen¹, and L. B. Schook², Wageningen University, Wageningen, the Netherlands, University of Illinois, Urbana.</td>
</tr>
<tr>
<td>4:25 PM</td>
<td>Bioinformatics requirements to apply whole genome prediction in livestock. D. Garrick*, Iowa State University, Ames.</td>
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<tr>
<td>5:00 PM</td>
<td>Panel discussion</td>
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**SYMPOSIUM**

**Companion Animals**

**Dietary Supplements in Companion & Exotic Animal Nutrition - Use, Regulations & Safety**

**Chair:** Kelly Swanson, University of Illinois

**Sponsors:** Procter and Gamble Pet Care and International Ingredient Corp.

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<tr>
<td>2:00 PM</td>
<td>Introduction. Kelly Swanson.</td>
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<tr>
<td>2:10 PM</td>
<td>Navigating the FDA’s regulation of animal feed “supplements”. J. B. Murphy*, U.S. Food and Drug Administration’s Center for Veterinary Medicine, Rockville, MD.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>The big “S” supplementation in exotic animal diets. N. A. Irlbeck*, Colorado State University, Fort Collins, CO.</td>
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<tr>
<td>3:25 PM</td>
<td>Break</td>
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<tr>
<td>3:45 PM</td>
<td>From arthritis to zinc deficiency, veterinarians are increasingly recommending pet supplements. P. Brown*, Nutri-Vet LLC, Boise, ID.</td>
</tr>
<tr>
<td>4:10 PM</td>
<td>Who are we, what do we do and how can we help? W. Bookout*, National Animal Supplement Council, Valley Center, CA.</td>
</tr>
<tr>
<td>4:35 PM</td>
<td>2008 Corbin Award Winner: Opportunities in companion animal sciences. Gail Kuhlman, Procter &amp; Gamble Pet Care, Lewisburg, OH.</td>
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<tr>
<td>4:55 PM</td>
<td>Reception</td>
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**Food Safety**

**Chair:** Mandy Carr, National Cattlemen’s Beef Association

<table>
<thead>
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<th>Time</th>
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<tr>
<td>2:00 PM</td>
<td>Clostridium difficile in cattle and swine. R. Harvey*, FSSRU, ARS, USDA, College Station, TX.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Optimising fluorescence of feces as a real-time solution for the detection of fecal contamination on carcasses. M. R. F. Lee*, V. J. Theoblad¹, M. K. Theodorou¹, A. Veberg Dahl², F. Lundby², and J.-P. Wold², Aberystwyth University, Wales, UK, Nofima Mat, Ås, Norway.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Oral delivery systems for encapsulating bacteriophage targeted at E. coli O157:H7. K. Stanford¹, T. P. Stephens¹, T. A. McAllister¹, D. Niu¹, and R. P. Johnson¹, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, Dalian University of Technology, Dalian, China, Public Health Agency of Canada, Guelph, ON, Canada.</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>Effects of Aviplus on E. coli O157:H7 in pure culture and in mixed ruminal culture fermentations. T.R. Callaway*, E. Grilli¹, M. R. Messina¹, and A. Piva¹, Food and Feed Safety Research Unit, Agricultural Research Service, USDA, College Station, TX, DIMORFIPA, University of Bologna, Bologna, Italy.</td>
</tr>
</tbody>
</table>
3:30 PM 214 Control of *E. coli* O157:H7 in corn silage with inoculants under anaerobic and aerobic conditions. A. F. Pedrosa, T. Adesogan, O. M. C. Queiroz, and S. K. Williams. \textit{Brazilian Agricultural Research Corporation, Embrapa Cattle-Southeast, Sao Carlos, Sao Paulo, Brazil, Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida, USA.}

3:45 PM 215 Characterization of antimicrobial-resistant *Escherichia coli* from samples collected throughout processing of feedlot cattle at a commercial abattoir. T. W. Alexander, G. D. Inglis, L. J. Yanke, E. Topp, and T. A. McAllister. \textit{Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, Agriculture and Agri-Food Canada, London, Ontario, Canada.}

4:00 PM 216 Screening of class Ila bacteriocin-producing lactic acid bacteria from Chinese traditional fermented food by PCR based method. H. Yi, L. Zhang, Y. Tuo, X. Han, and M. Du. \textit{Harbin Institute of Technology, Harbin, Heilongjiang, China.}


Graduate Student Paper Competition
CSAS Oral Competition 2

Chair: Luigi Faucitano, Agriculture and Agri-Food Canada

514

2:00 PM 218 The effect of animal location during transit on heart rate of pigs transported to slaughter using two vehicle types. J. A. Correa, H. Gonyou, S. Berry, K. M. Searle, and A. H. Laarman. \textit{Laval University, Quebec, Quebec, Canada, Hybrid Turkeys, Kitchener, Ontario, Canada.}

2:15 PM 219 Utilization of electrolytes to encourage early feed and water consumption in weanlings. A. K. Gigiel, N. J. Lewis, and M. L. Connor. \textit{University of Manitoba, Winnipeg, Manitoba, Canada.}


2:45 PM 221 Heritability estimates of reproductive, growth and carcass traits of tropical pigs: A meta-analysis. E. C. Akanno, F. S. Schenkel, V. M. Quinton, R. M. Friendship, and J. A. B. Robinson. \textit{University of Guelph, Guelph, ON, Canada.}

3:00 PM 222 Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case, M. J. Kelly, S. P. Miller, and B. J. Wood. \textit{University of Guelph, Guelph, Ontario, Canada, Hybrid Turkeys, Kitchener, Ontario, Canada.}

3:15 PM 223 Effects of feeding solid feed on ruminal pH and expression of genes involved in ketogenesis in dairy calves during weaning transition. A. H. Laarman and M. Oba. \textit{University of Alberta, Edmonton, Alberta, Canada.}

3:30 PM 224 The threonine requirement in sows increases at day 30, 45 and 105 of gestation. C. L. Levesque, S. Moehn, P. B. Pencharz, and R. O. Ball. \textit{Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, Sick Children's Hospital, University of Toronto, Toronto, Ontario, Canada.}

3:45 PM 225 Energy and amino acid utilization in expeller-extracted canola meal fed to growing pigs. T. A. Woyengo, E. Kiarie, and C. M. Nyachoti. \textit{University of Manitoba, Winnipeg, Manitoba, Canada.}

4:00 PM 226 Calcium chloride and sodium nitrate as nutritional means to overcome the reduction in performance of pigs fed high potassium diets. J. Guimaraes, D. Wey, C. Zhu, and C. F. M de Lange. \textit{University of Guelph, Guelph, Ontario, Canada.}

4:15 PM 227 Protein turnover and heat production of sows varies at day 30, 45 and 105 of gestation. R. S. Samuel, S. Moehn, P. B. Pencharz, and R. O. Ball. \textit{Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.}

4:30 PM 228 Prediction of DE content of common ingredients in grower pigs using an in vitro digestibility technique. P. R. Regmi, N. S. Ferguson, A. Pharazyn, L. F. Wang, and R. T. Zijlstra. \textit{University of Alberta, Edmonton, AB, Canada, Nutreco Canada, Guelph, ON, Canada.}

Production systems to optimize growth and beef quality. I. Rush*, University of Nebraska, Lincoln.


Managing genetic antagonisms between economically important beef production traits and marbling. R. L. Weaber1 and R. M. Enns*2; 1University of Missouri, Columbia, 2Colorado State University, Fort Collins.


Introduction. Kevin Herkelman.


Mycotoxins in alternative ingredients. T. K. Smith*, University of Guelph, Guelph, ON, Canada.

Anti-nutritional compounds and other limitations to the use of alternative feed ingredients. H. H. Stein*, University of Illinois, Urbana.

Phytase and NSP-degrading enzymes for alternative feed ingredients. R. T. Zijlstra*1, E. Beltranena1,2, C. M. Nyachoti3, and S. W. Kim4, 1University of Alberta, Edmonton, AB, Canada, 2Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 3University of Manitoba, Winnipeg, MB, Canada, 4North Carolina State University, Raleigh.

Summary. Kevin Herkelman.

Effect of PRID administered 5-12 days post-insemination on progesterone levels and pregnancy risk in previously inseminated dairy cows. S. J. Scott*, K. E. Leslie, R. B. Walsh, J. S. Walton, and S. J. LeBlanc, University of Guelph, Guelph, ON, Canada.

Plasma hormones and energy metabolites in postpartum lactating (L) and nonlactating (NL) Holstein cows that either conceived or failed to conceive at first insemination. A. N. Brauch*1, J. C. Green1, J. P. Meyer1, A. M. Williams1, C. S. Okamura1, P. Taube1, L. Goetze1, and M. C. Lucy1, 1University of Missouri-Columbia, Columbia, 2Pfizer Animal Health, New York, NY.

Effect of lactation on plasma progesterone concentrations and early embryonic development in Holstein cows. J. C. Green*1, J. P. Meyer1, A. M. Williams1, A. N. Brauch1, C. S. Okamura1, P. Taube1, L. Goetze1, and M. C. Lucy1, 1University of Missouri, Columbia, 2Pfizer Animal Health, New York, NY.

Effects of resynchronization programs on fertility, progesterone and PAGs after insemination. I. M. Thompson*3, R. L. A. Cerri1, I. H. Kim2, J. A. Green2, J. E. P. Santos1, and W. W. Thatcher1, 1University of Florida, Gainesville, 2Chungbuk National University, South Korea, 3University of Missouri, Columbia.
2:00 PM 242 Fertility after timed artificial insemination in lactating dairy cows resynchronized using Double–Ovsynch or standard Ovsynch. J. O. Giordano*,1, M. C. Wiltbank1, S. Bas1, A. P. Cunha1, R. A. Pawlish1, J. N. Guenther1, and P. M. Fricke1, 1Department of Dairy Science, University of Wisconsin, Madison, 2Brodhead Veterinary Clinic, Brodhead, WI.

3:00 PM 243 Effect of parity on pedometer activity at estrus in dairy cows. S. J. Caldwell and G. E. Mann*, Division of Animal Sciences, School of Biosciences, University of Nottingham, Sutton Bonnington Campus, Loughborough, UK.

3:15 PM Break

3:30 PM 244 Effect of body condition score on milk yield, milk composition and reproductive competence during the service period of Holstein-Friesian dairy cattle. T. J. Hole2 and J. K. Margerison*2, 1Massey University, Palmerston North, New Zealand, 2Plymouth University, Seale Hayne, Newton Abbot, UK.


4:30 PM 247 Use of OVSYNCH and alternative protocols to synchronize estrus and ovulation in dairy cows managed in a seasonal grass-based system. M. M. Herlihy*1,2, M. A. Crowe2, M. G. Diskin3, and S. T. Butler1, 1University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Department of Animal Science, University of Nebraska-Lincoln, 3Teagasc Moorepark DPRC, Fermoy, Co. Cork, Ireland, 3SAFVM, University College Dublin, Ireland, 3Teagasc, APRC, Athenry, Co. Galway, Ireland.

Ruminant Nutrition
Feedlot, Byproduct Feeds

Chair: John Wagner, Colorado State University

516ab

2:00 PM 248 Effects of ruminally degradable N in diets containing wet corn distillers grains and steam-flaked corn on feedlot cattle performance and carcass characteristics. C. H. Ponce*1, M. S. Brown1, N. A. Cole2, C. L. Maxwell1, and J. C. Silva1, 1Feedlot Research Group, West Texas A&M University, Canyon, 2USDA ARS Conservation and Production Research Laboratory, Bushland, TX.

2:15 PM 60 Effect of graded levels of wheat-based dried distillers grains with solubles on rumen fermentation in finishing cattle. R. M. Beliveau*1,2 and J. J. McKinnon1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

2:30 PM 59 Comparison of wheat or corn dried distillers grains with solubles (DDGS) on performance and carcass characteristics of feedlot steers. L. J. Walter*1, J. L. Aalhus2, W. M. Robertson2, T. A. McAllister1, D. J. Gibb2, M. E. R. Dugan2, N. Aldai1, and J. J. McKinnon1, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

2:45 PM 249 Evaluation of lighter density fraction from dried distillers grains with solubles as a feedstuff for ruminants. J.M. Greene*, R. Srinivasan1, and B.J. Rude1, 1Animal and Dairy Sciences, Mississippi State University, Starkville, 2Agricultural and Biological Engineering, Mississippi State University, Starkville.

3:00 PM 250 Effects of grain processing method and use of dried corn distillers grains on beef carcass composition, heterocyclic amine concentration and fatty acid profiles of lean and lipid portions. P. L. Black*1, G. L. Parsons1, M. K. Shelor1, M. E. Dikeman1, K. K. Karges1, M. L. Gibson1, J. S. Smith1, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2Dakota Gold Research Association, Sioux Falls, SD.

3:15 PM 251 Optimal roughage level in finishing diets containing combinations of flaked corn and dried distiller’s grains with solubles. K. A. Miller*, M. K. Shelor, G. L. Parsons, and J. S. Drouillard, 1Kansas State University, Manhattan.

3:30 PM 252 The effect of corn or sorghum dried distillers grains + solubles on growth performance and carcass characteristics of beef steers. K. M. Wood*1, H. Salim1, P. L. McEwen2, J. B. Mandell1, S. P. Miller1, and K. C. Swanson1, 1Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada, 2Ridgetown Campus, University of Guelph, Ridgetown, Ontario, Canada.


4:00 PM 254 Effects on ruminal pH, hydrogen sulfide concentration, and feed intake when using wet distillers grains with solubles to adapt cattle to finishing diets compared to forage. K. M. Rolfe*, G. E. Erickson, T. J. Klopfenstein, and J. T. Vasconcelos, Department of Animal Science, University of Nebraska, Lincoln.
High sulfur content in distillers grains alters ruminal fermentation and diet digestibility by beef steers. S. Uwituze*, M. K. Shelor1, G. L. Parsons1, K. K. Karges2, M. L. Gibson1, L. C. Hollis1, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2Dakota Gold Research Assn, Sioux Falls, SD.

High sulfur content in distillers grains with solubles may be deleterious to performance and carcass quality of finishing steers. S. Uwituze*, M. K. Shelor1, G. L. Parsons1, K. K. Karges2, M. L. Gibson1, L. C. Hollis1, and J. S. Drouillard1, 1Kansas State University, Manhattan, 2Dakota Gold Research Assn, Sioux Falls, SD.

Evaluation of feedlot and carcass performance of steers fed different levels of ECORN™, a potential new feed product from ethanol plants. C. M. Godsey-Williams*, G. E. Erickson1, T. J. Klopfenstein1, M. Greenquist2, P. Guiroy2, C. Ibanez2, and J. Kazin3, 1University of Nebraska, Lincoln, 2Cargill Inc., Wayzata, MN, 3Renessen LLC., Wayzata, MN.

SYMPOSIUM
Ruminant Nutrition
Forage Digestibility Estimates; Obtaining and Applying Meaningful Values
Chair: JoAnne Knapp, Fox Hollow Consulting, LLC
Sponsor: Monsanto

Swine Species
Chair: Bradley V. Lawrence, Novus International Inc.

Birth weight implications for reproductive parameters in boars. F. R. C. L. Almeida*1, A. L. N. Alvarenga1, G. R. Foxcroft2, and H. Chiarini-Garcia1, 1Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, 2University of Alberta, Edmonton, Alberta, Canada.


Influence of seasonality of the growing-finishing period on carcass characteristics of heavy barrows and gilts. M. A. Latorre*, S. Calvo1, and L. Ariño2, 1Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain, 2Integraciones Porcinas SL, Teruel, Spain.

Artificial sweeteners enhance the capacity of the swine small intestine to absorb glucose. A. Moran*, D. Arora1, M. Al-Rammahi1, D. Batchelor1, E. Coulter1, N. Jones1, I. Ionescu2, D. Bravo2, and S. Shirazi-Beechey2, 1Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, 2Pancosma SA, Geneva, Switzerland.
Changes in expression of swine intestinal Na+/glucose cotransporter in response to increased dietary carbohydrates. A. Moran*, M. Al-Rammahi†, D. Arora†, D. Batchelor†, E. Coulter†, N. Jones†, C. Ionescu†, D. Bravo†, and S. Shirazi-Beechey†, 1Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, 2Pancosma SA, Geneva, Switzerland.

Individual piglet birth weight, sow parity, gestation length, number of fully formed pigs and within litter birth weight variation affect incidence of stillborns. J. S. Fix*, J. W. Holl†, W. O. Herring†, and M. T. See†, 1North Carolina State University, Raleigh, 2Smithfield Premium Genetics Group, Rose Hill, NC.


Cholecystokinin excited and sensitized porcine gastric mechanoreceptors responding to distension. W. L. Grovum*, W. R. Ellison, and W. W. Bignell, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada.

OTHER EVENTS

JDS-JAS Reviewer Workshop
513ab
2:00 PM–5:00 PM

Canadian Council on Animal Care Guidelines on
The care and use of farm animals in research, teaching and testing
Chair: Julie Dale, Canadian Council on Animal Care
513ef

Welcome and Introductions. M. von Keyserlingk1 and J. Dale2, 1University of British Columbia, 2Canadian Council on Animal Care.

Cattle. J. Rushen and A. M. de Passillé, Agriculture and Agri-Food Canada.

Sheep and Goats. K. Stanford, Alberta Agriculture and Rural Development.

Pigs. L. Connor, University of Manitoba.

Poultry. F. Silversides, Agriculture and Agri-Food Canada.

General wrap-up and discussion. J. Dale, Canadian Council on Animal Care.
Tuesday, July 14

POSTER PRESENTATIONS

Animal Health
Mastitis and Associated Microbiology

T1 Natural autoantibodies in milk and their role in the development of mastitis in dairy cows. A. T. M. Van Kneesel*, G. De Vries Reilingh, A. Lammers, B. Kemp, and H. K. Parmentier, Adaptation Physiology Group, Wageningen Institute of Animal Sciences, Wageningen University, Wageningen, the Netherlands.

T2 Psoriasisin expression in bovine udder is induced by E. coli infection. P. Regenhart*, W. Petzl, H. Zerbe, and H. Sauerwein, 1Institute of Animal Science, Bonn, NRW, Germany, 2Clinic for Ruminants, Munich, Bavaria, Germany.

T3 Innate immune responses in dairy cows and study of a promising candidate: Osteopontin. K. Alain, N. A. Karrow, C. Thibault, M. Lessard, and N. Bissonnette. 1Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada, 2Université de Sherbrooke, Sherbrooke, Québec, Canada, 3University of Guelph, Guelph, Ontario, Canada.


T5 Comparison of in vivo and in vitro mammary cell expression of selected inflammatory genes in response to α-linolenic acid. P. Rezamand*, B. P. Hatch, K. Parnell, K. M. Hunt, J. E. Williams, W. Price, and M. A. McGuire, University of Idaho, Moscow.

T6 Development of a multiplex-PCR detection assay for simultaneous identification of the major pathogens causing mastitis in dairy milk. B. Cressier, C. Thibault, and N. Bissonnette. 1Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada, 2Université de Sherbrooke, Sherbrooke, Québec, Canada.


T11 Effects of Mangifera indica peel extracts on Staphylococcus aureus mammary infections. S. Stella and D. Tedesco*, University of Milan, VSA Dep., Milan, Italy.


T14 Effects of CpG ODN adjuvant on the immune responses elicited by a quadrivalent mastitis vaccine in dairy cows. S.-C. Lee, J.-W. Lee, Graduate Institute of Animal Vaccine Technology, National Pingtung University of Science and Technology, Neipu, Pingtung, Taiwan, 2Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Neipu, Pingtung, Taiwan.

T15 Intramammary glucocorticoid treatment during LPS-induced mastitis. O. Wellinus, M. Saudenowa, and R. M. Bruckmaier*, University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland.
Breeding and Genetics
Dairy Cattle Breeding II and Rabbit Breeding

T16 Ketosis – Manageable by breeding strategies? F. Rehbock1, G. Freyer2, F. Klug3, and N. Vukasinovic*, 1Landesforschungsanstalt für Landwirtschaft und Fischerei M-V, Institut für Tierproduktion, Dummerstorf, Germany, 2FBN, Unit Genetics and Biometry, Dummerstorf, Germany, *Alexandrastr. 4, Graal-Müritz, Germany, *Newsham Choice Genetics, STL Research Center, Chesterfield, MO.

T17 Genetic parameters and breeding values estimated under heterogeneous variances of two groups for type records of Holstein cows in Japan. T. Baba*, Y. Masuda*, Y. Goto*, and M. Suzuki, 1Obihiro University of A and VM, Obihiro, Japan, 2The Holstein Cattle Association of Japan, Hokkaido branch, Sapporo, Japan.

T18 Estimation of genetic parameters for maturity of lactation using a test day model in Japanese Holsteins. Y. Masuda* and M. Suzuki, Obihiro University of Agriculture and Medicine, Obihiro, Japan.

T19 Bayesian analysis of random regression using B-splines to model test-day milk yield of Holstein cattle. A. B. Bignardi*1, L. El Faro2, G. J. M. Rosa3, F. F. Silva4, V. L. Cardoso5, P. F. Machado4, and L. G. Albuquerque3, 1Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil, 2Agência Paulista de Tecnologia dos Agronegócios, Ribeirão Preto, São Paulo, Brazil, 3University of Wisconsin, Madison, 4Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 5Universidade de São Paulo, Piracicaba, São Paulo, Brazil.

T20 Study on genetic evaluation for linear type traits in Holstein cows. D.-H. Lee*, S.-H. Oh*, and N. C. Whitley2, 1Hankyong National University, Ansung, Gyeonggi, South Korea, 2North Carolina A&T State University, Greensboro.

T21 Comparison of Swiss and New Zealand cows in a pasture-based milk production system. P. Kunz*, V. Piccand, and P. Thomet, Swiss College of Agriculture, 3052 Zollikofen, Bern, Switzerland.

T22 Udder health traits as related to economic losses in Friesian cattle. H. G. El Awady1 and E. Z. M. Oudah*, 1Kafir El Sheikh University, Kafir El Sheikh, Egypt, 2Mansoura University, Mansoura, Egypt.

T23 Comparing random regression models to analyse first lactation daily milk yield data in Murrah buffaloes by Bayesian inference. F. C. Breda Mello*, L. G. de Albuquerque1, R. F. Euclydes2, H. Tonhati1, and A. B. Bignardi1, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Faculdade de Ciências Agrárias e Veterinária / Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil.

T24 Genetic parameters estimation for milk yield of buffaloes Murrah breed using parametric functions. F. C. Breda*1, R. F. Euclydes2, L. G. de Albuquerque1, H. Tonhati1, and A. B. Bignardi1, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Faculdade de Ciências Agrárias e Veterinária / Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil.

T25 Estimation of heritability of monthly test day milk yield at different calving seasons in Holsteins of Khorasan province of Iran. R. Lotfi*1, H. Farhangfar*2, and A. Shoorideh3, 1Tarbiat Modares University, Tehran, Iran, 2Birjand University, Birjand, Iran, 3Jihade Agriculture of Razavi Khorasan, Mashhad, Iran.

T26 Genetic characteristics of energy balance for Iranian primiparous Holsteins using a fixed regression test day model. H. Farhangfar*3, R. Lotfi*1, and M. H. Fathi Nasrìi, 1Birjand University, Birjand, Iran, 2Tarbiat Modares University, Tehran, Iran.

T27 Estimation of genetic correlations among peak milk yield, energy balance and age at first calving for Iranian Holstein heifers. H. Farhangfar*4, R. Lotfi*1, and M. H. Fathi Nasrìi, 1Birjand University, Birjand, Iran, 2Tarbiat Modares University, Tehran, Iran.

T28 Mixed model analyzing of some environmental factors affecting average lactation somatic cell score in Iranian Holstein heifers. H. Farhangfar*1, A. Abedini, K. Shojaeian, and M. H. Fathi Nasrìi, 1Birjand University, Birjand, Iran, 2Zabol University, Zabol, Iran.

T29 Genetic association between male fertility and prolificacy after artificial insemination with semen subjected to limited screening. L. L. Tusell*, R. Rekaya*, M. López-Bejar*, M. García-Tomás*, O. Rafel*, J. Ramon*, and M. Piles*, 1Unitat de Cucintura, IRTA, Barcelona, Spain, 2University of Georgia, Athens, 3UBA, Barcelona, Spain.

T30 Breeding values of fat and protein content in inbred and outbred cows. J. Bezdicek*, J. Subrt*, R. Filipcik*, and J. Riha*, 1Agrovyzkum Rapotin Ltd., Rapotin, Czech Republic, 2MZLU v Brne, Brno, Czech Republic.


T32 Phenotypic and genotypic variation of bovine immune responses in Cohort dairy herds across Canada. K. A. Thompson*, N. Karrow1, K. Leslie1, M. Quinlton1, F. Miglior1, and B. A. Mallard1, 1University of Guelph, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada.

T33 Study on genetic parameters of conception rate and heat detection rate of NY Holsteins. C. Huang, S. Tsuruta*, I. Misztal, and T. J. Lawlor*, 1University of Georgia, Athens, 2Holstein Association USA Inc., Brattleboro, VT.
### Dairy Foods
**Dairy Foods Processing/Cheese/Dairy Micro**

**T43** Understanding and controlling flavor and color development resulting from non-thermal browning (NTB) in cheese. A. Lopez-Hernandez*, N. Van Epps, and S. A. Rankin, University of Wisconsin, Madison.

**T44** Transcriptomic analysis of Camembert cheese fungal activity. C. Viel*, F. Boileau, A. Thériault, and S. Labrie, Département des sciences des aliments et de nutrition, Centre de recherche en sciences et technologie du lait (STELA), Institut des neutraceuques et des aliments fonctionnels (INAF), Université Laval, Québec, QC, Canada.

**T45** Comparison of Hispanic cheeses from US and country of origin manufacturers. L. A. Jimenez-Maroto1, A. Lopez-Hernandez*,1, B. Maldonado2, and S. A. Rankin1, 1University of Wisconsin, Madison, 2Tecnológico de Monterrey, Campus Querétaro, Querétaro, México.

**T46** Partitioning of omega-3 fatty acids in Cheddar cheese curd and whey. C. Brothersen*, D. J. McMahon, and B. Pettee, Western Dairy Center, Utah State University, Logan.

**T47** Microbiological quality of raw milk utilized for small scale artisan cheese production. D. J. D'Amico* and C. W. Donnelly, University of Vermont, Burlington.

**T48** Effect of anhydrous milk fat, milk fat globular membrane and corn oil as the fat source in the AIN93 diet on the fecal microbiota in Fisher 344 rats. R. E. Ward*, D. Snow1, R. Jimenez-Flores2, and K. J. Hintze2, Nutrition, Dietetics and Food Sciences, Utah State University, Logan, 1Dairy Products Technology Center, Department of Agriculture, California Polytechnic State University, San Luis Obispo.

**T49** Beneficial effects of bovine colostrum acid protein on bone properties of ovariectomized rats. M. Du*, L. Zhang1, Z. Mu1, H. Yi1, and X. Han1, Harbin Institute of Technology, Harbin, Heilongjiang, China, 1Inner Mongolia Agricultural University, Hohhot, Inner Mongolia, China.

**T50** Comparison of commercially available RNA extraction methods for effective bacterial RNA isolation from milk. S. Secchi1, A. Serrano2, P. García-Nogales1, S. Gutiérrez3, and A. Aris*,1 Applied Research using OMICS Sciences, Barcelona, Spain, 2Institut de Recerca i Tecnologia Agroalimentàries, Barcelona, Spain, 3Centre de Recerca i Investigació de Catalunya, Barcelona, Spain.

T52 Expression profile analysis of intestinal cells effected by Lactobacillus acidophilus NCFM. M. Wang1, G. Zhang1, L. Yao1, Y. Zhou1, L. Han1, and Y. Jiang1,2, Key Lab of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China, National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China.

T53 Development of a Multiplex-PCR detection assay for simultaneous identification of the major mastitis causing pathogens in dairy milk. B. Cressier*, C. Thibault, and N. Bissonnette1,2, Université de Sherbrooke, Sherbrooke, QC, Canada, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.


T55 Growth-promoting activities of bovine and caprine caseinomacupeptide. G. Robitaille*, R. Ioannoni, and C. Jolicoeur, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

T56 Study of the genetic diversity of Geotrichum candidum. I. Alper* and S. Labrie, Département des sciences des aliments et de nutrition, Centre de recherche en sciences et technologie du lait (STELA) – Institut des nutraceutiques et des aliments fonctionnels (INAF), Université Laval, Quebec, QC, Canada.

T57 Effect of somatic cell count on milk composition. R. Noorbakhsh1, A. Mortazavi1, F. Shahidi2, A. F. Mehdikhani2, M. Ahoei2, and A. Heravi Moussavi1, Dept of Food Science and Technology, Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran, Dept of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran.

T58 Impact of Lactobacillus acidophilus NCFM surface protein expression on its binding properties toward the milk fat globule membrane. G. Brisson, H. F. Payken, E. Pettry, and R. Jimenez-Flores*, California Polytechnic State University, San Luis Obispo.

T59 Acid tolerance of Lactobacillus acidophilus LA-K as influenced by various pulsed electric field conditions. O. Cueva1 and K. Aryana*2,1, Louisiana State University, Baton Rouge, Louisiana State University Agricultural Center, Baton Rouge.

T60 Growth of Lactobacillus acidophilus LA-K as influenced by certain pulsed electric field conditions. O. Cueva1 and K. Aryana*2,1, Louisiana State University, Baton Rouge, Louisiana State University Agricultural Center, Baton Rouge.


T62 Bile tolerance of Lactobacillus acidophilus LA-K as influenced by certain pulsed electric field conditions. O. Cueva1 and K. Aryana*2,1, Louisiana State University, Baton Rouge, Louisiana State University Agricultural Center, Baton Rouge.


T64 Environmental scanning of bacteria with the potential to produceropy milk in a farm. A. Laubscher*, K. White1, A. Cano2, R. Cano2, and R. Jimenez-Flores1, Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, Biological Sciences Department, California Polytechnic State University, San Luis Obispo.

T65 Influence of growth medium composition on survival and storage stability and viability of lactobacilli during freeze-drying. M. I. Tudor, E. P. Cuesta-Alonso*, and S. E. Gilliland, Oklahoma State University, Stillwater.


T68 Influence of the sample pre-heating and time for reanalysis in the Total Bacteria Count of milk by flow cytometry. L. Clementino1,2, F. A. Pinto1,2, L. M. Fonseca1,2, J. F. Castro1, R. Rodrigues1,2, M. M. O. P. Cerqueira1,2, M. O. Leite1,2, C. S. P. Fonseca1, C. F. A. M. Penna1,2, and M. R. Souza1,2, Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, Laboratory of Milk Quality Analysis, Belo Horizonte, MG, Brazil.

T69 Methodology for differentiation of lactic acid bacteria in cheese made with probiotic adjunct cultures. C. J. Oberg*, L. Moyes1, C. Brothersen2, and D. J. McMahon2, Microbiology Department, Weber State University, Ogden, UT, Western Dairy Center, Utah State University, Logan.

T70 Use of supercritical fluid extraction to remove non-polar lipids from whey buttermilk powder. M. R. Costa1,2, M. L. Gigante2, and R. Jimenez-Flores1, Universidade Norte do Paraná, Londrina, Paraná, Brazil, Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, California Polytechnic State University, San Luis Obispo.
Effect of pH and ionic strength on heat-induced deposition of whey proteins at the surface of fat droplets in oil-in-water emulsions. M. Britten* and S. Lamotho, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

The impact of antioxidant addition on flavor stability of Cheddar whey and whey protein. I. W. Liaw*, H. Eshpari, P. S. Tong, and M. A. Drake, 1North Carolina State University, Raleigh, 2CalPoly University, San Luis Obispo, CA.


Production efficiency of a 95% serum protein (SP) reduced micellar casein concentrate (MCC) produced with ceramic microfiltration (MF) membranes. E. E. Hurt*, J. Zulewska, M. W. Newbold, and D. M. Barbano, 1Cornell University, Ithaca, NY, 2University of Warmia and Mazury, Olsztyn, Poland.

Functionality characterization of 65% and 95% serum protein (SP) reduced micellar casein concentrates (MCC): Concentration and drying effects. C. M. Beliciu*, J. Zulewska, M. Newbold, C. I. Moraru, and D. M. Barbano, 1Cornell University, Ithaca, NY, 2University of Warmia and Mazury, Olsztyn, Poland.

Food Safety

A modeling system to predict S. aureus growth and SEA production in milk. F. Zhao, X. Qu, X. Lv, L. Xiang, B. Yan, and Y. Jiang*, Northeast Agricultural University, Harbin, China.

Salmonella serotype shift during an endemic dairy infection. J. Van Kessel* and J. Karns, USDA-ARS, Beltsville, MD.

Determination of the mechanism(s) by which direct-fed microbials control Escherichia coli O157:H7 in cattle. L. M. Guillen*, S. McCoy, M. R. Bible, L. O. Burciaga-Robles, M. M. James, C. R. Krehbiel, and S. E. Gilliland, Oklahoma State University, Stillwater.

PCR analysis of pathogenic E. coli on three dairy farms in the northeastern US. J. Karns* and J. Van Kessel, USDA/ARS/BA/ANRI/EMFSL, Beltsville, MD.


Food crisis consumer information needs. K. E. Olson*, D. Pelzer, and S. Stevens, KEO Consulting, Schaumburg, IL, DMI, Rosemont, IL.

Forages and Pastures

Pastures and Grazing

Structure of Tanzania grass managed under different residual light area index at rotational stocking by goats. A. C. Ruggieri1,2, N. Lima Santos1,2, I. A. M. Teixeira, V. C. e Silva1, B. R. Vieira1, and E. B. Malheiros1, São Paulo State University, Jaboticabal, São Paulo, Brazil, Fundação de Amparo a Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.


Predicting dry matter intake of grazing Brahman bulls selected for high and low feed efficiency. A. D. Aguiar*, L. O. Tedeschi, F. M. Rouquette, Jr, T. D. A. Forbes, C. M. Hensarling, and R. D. Randel, Texas A&M University, College Station, Texas AgriLife Research, Overton, TX, Texas AgriLife Research, Uvalde, TX.

Summer forage species alters animal performance, carcass characteristics and fatty acid composition of grazing beef steers. J. R. Schmidt, J. G. Andrae, S. K. Ducket*, and M. Miller, Clemson University, Clemson, SC.


Characteristics of Tanzania (Panicum maximum) and Xaraés (Brachiaria brizantha) pastures under dairy cows grazing with two supplementation levels. C. A. M. Gomide, D. S. C. Paciullo, D. Vilela, and J. H. Bruschi, Embrapa Dairy Cattle Research Center, Juiz de Fora, MG, Brasil.
Graduate Student Paper Competition
CSAS Graduate Student Competition 2

T88 Characteristics of forages utilized by the Przewalski horse (Equus ferus przewalskii) in Hustai National Park, Mongolia. B. N. Petrukovich*, J. P. Stevens, and D. A. Christensen, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

T89 Timing of herbage allocation in a strip grazing organic system: Effects on performance and milk composition of lactating dairy cows. L. Baldoceda*1,2, G. Raggio1, R. Bergeron1, D. Pellerin1, and R. Berthiaume1,2, 1Université Laval, Québec, Québec Canada, 2Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada, Lennoxville, Québec, Canada, 3Campus Alfred Université de Guelph, Alfred, Ontario Canada.

T90 Performance of stocker cattle fed hay and protein supplements during the winter and grazed on wheat pasture during the spring. W. A. Phillips*, C. A. Bandyk1, and T. W. Geary1, 1USDA-ARS, El Reno, OK, 2Quality Liquid Feeds Inc., Dodgeville, WI, 3USDA-ARS, Miles City, MT.

T91 Perennial forage kochia for increased production of winter grazed pastures. L. K. Greenhalgh1, D. R. ZoBell*1, 1B. L. Waldron2, K. C. Olson3, A. R. Moulton1, and B. W. Davenport4, 1Utah State University, Logan, 2USDA-ARS, Logan, UT, 3South Dakota State University, Rapid City, 4USDA-NRCS, Tooele, UT.

T92 Seasonal distribution of minerals in grazed and ungrazed cool-season tame grass pasture. C. L. Wright* and A. J. Smart, South Dakota State University, Brookings.

T93 Nutritive value of standing mature Buffel grass (Cenchrus ciliaris) for dry season feeding of cattle in Northeastern Mexico. H. Bernal-Barragan*1,2, R. W. Blake3, D. J. R. Cherney1, and M. E. Van Amburgh1, 1Facultad de Agronomía UANL, Escobedo, N.L., México, 2Cornell University, Ithaca, NY.


T97 Nutritive value of the Tanzania grass managed under different residual LAI, at rotational stocking by goats. N. Lima Santos1,2, A. C. Ruggieri*1,2, I. A. M. Teixeira1, V. C. e Silva1, A. F. Campos1, and E. B. Malheiros1, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2Fundação de Amparo à Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.

T98 Effects of ruminally-degradable starch and ruminally-degradable protein levels on urea-nitrogen recycling, microbial protein synthesis, and nitrogen balance in beef heifers. K. Baker*1, J. J. McKinnon1, T. A. McAllister1, and T. Mutsvangwa1, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

T99 Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed diets varying in ruminally-fermentable carbohydrate. D. Kiran* and T. Mutsvangwa, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

T100 Effect of feed borne Fusarium mycotoxins on the performance of grain fed veal calves. L. M. Martin*, K. M. Wood1, P. L. McEwen2,3, T. K. Smith1, I. B. Mandell1, A. Yanniokir1, and K. C. Swanson1, 1University of Guelph, Guelph, Ontario, Canada, 2Ridgetown Campus, University of Guelph, Ridgetown, Ontario, Canada, 3Alltech, Nicholasville, KY.

T101 Effect of replacing barley grain with triticale-based dry distillers grains with solubles on lamb performance and nutrient digestibility. L. E. McKeown1,2, A. V. Chaves3, M. Oba1, T. A. McAllister1, and E. Okine1, 1University of Alberta, Edmonton, Alberta, Canada, 2Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada.

T102 Effect of bioethanol co-product type and bioethanol plant on situ degradation kinetics, effective degradability and rumen bypass of nutrient components. W. G. Nuez Ortin* and P. Yu, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

T103 Protein and carbohydrate fractions of new co-products of bioethanol production: Comparison among blend DDGS, wheat DDGS and corn DDGS, and between different bioethanol plants. W. G. Nuez Ortin* and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.
Influence of feeding increasing levels of dry or modified wet corn distillers grains plus solubles in whole corn grain-based finishing diets on performance and carcass traits in feedlot cattle. H. Salim**, A. C. de Queiroz, M. H. de Faria, P. V. R. Paulino, and G. R. Siqueira, **Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 1Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Effects of supplementing beef cows grazing low quality roughages with wheat dried distillers grains with solubles. A. Van De Kerckhove** and H. A. Lardner, University of Saskatchewan, Saskatoon, SK, Canada, Western Beef Development Centre, Humboldt, SK, Canada.


Effects of alfalfa hay on chewing behavior, rumen pH, and milk production for lactating dairy cows fed dried distillers grains plus solubles in place of barley silage. S. Z. Zhang*, G. B. Penner, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

**Growth and Development**

Genetic group and slaughter weight influence on carcass quantitative traits of feedlot cattle. R. Mello**, F. D. de Resende, A. C. de Queiroz, M. H. de Faria, P. V. R. Paulino, and G. R. Siqueira, **Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 1Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Physical carcass composition of crossbreed beef cattle slaughtered at different end points. R. Mello**, F. D. de Resende, A. C. de Queiroz, M. H. de Faria, G. F. Alleoni, and P. V. R. Paulino, **Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 1Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Chemical composition of HH section from crossbred beef bulls slaughtered at different body masses. R. Mello**, A. C. de Queiroz, F. D. de Resende, M. H. de Faria, G. R. Siqueira, and G. F. Alleoni, **Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 1Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.

Measurement of changes in body composition of piglets from birth to 4 kg using quantitative magnetic resonance (QMR). A. D. Mitchell**, G. Taicher, and I. Kovner, 1USDA, Agricultural Research Service, Beltsville, MD, 2Echo Medical Systems, Houston, TX.


Glucose metabolism in preterm (PT) and term (T) born neonatal calves. H. M. Hammon**, J. Steinhoff, S. Görs, C. C. Metges, and R. M. Bruckmaier, 1Institute for the Biology of Farm Animals (FBN), Dummerston, Germany, 2University of Bern, Bern, Switzerland.

Milk diet affects glucose status and postprandial hepatic glucose metabolism in neonatal calves. J. Steinhoff**, S. Görs, C. C. Metges, R. M. Bruckmaier, and H. M. Hammon, 1Institute for the Biology of Farm Animals (FBN), Dummerston, Germany, 2University of Bern, Bern, Switzerland.

Metabolic maturity at birth and neonatal lamb survival and growth. III. Association among pre-suckling plasma metabolic and endocrine factors and lamb growth to weaning. D. R. Miller**, R. B. Jackson, D. Blache, and J. R. Roche, 1Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia, 2University of Western Australia, Perth, WA, Australia.

Glucagon-like peptide-2 increases splanchic blood flow acutely in calves but loses effectiveness with chronic exposure. C. C. Taylor-Edwards**, D. G. Burrin, J. J. Holst, K. R. McLeod, and D. L. Harmon, 1University of Kentucky, Lexington, 2USDA/ARS Children’s Nutrition Research Center, Baylor College of Medicine, Houston, TX, 3The Panum Institute, University of Copenhagen, Copenhagen, Denmark.

Glucagon-like peptide-2 decreases small intestinal mass of calves. C. C. Taylor-Edwards**, D. G. Burrin, K. R. McLeod, and D. L. Harmon, 1University of Kentucky, Lexington, 2USDA/ARS Children’s Nutrition Research Center, Baylor College of Medicine, Houston, TX.


Linoleic acid changes fatty acid profiles and alters gene expression in bovine adipocyte cultures. A. P. Burns*, S. K. Duckett, S. L. Pratt, and S. E. Ellis, Clemson University, Clemson, SC.

T121 Effects of arginine supplementation to gilts during early gestation on fetal myogenesis. C. Kalbe*,1, M. Porm1, J. Bérand2, G. Bee2, and C. Rehfelt3, 1Research Institute for the Biology of Farm Animals, Dummerstorf, Germany, 2Agroscope, Liebefeld Posieux, Switzerland.


T124 Clofibrate treatment up-regulates hepatic gene expression encoding fatty acid oxidation and ketogenesis enzymes in liver of pigs during early postnatal development. K. Shim, L. Xi*, S. Jacobi, and J. Odle, North Carolina State University, Raleigh.

T125 Use of gas chromatography to measure stearoyl-CoA desaturase activity and substrate preference. J. A. Stamey*, C. A. Umberger, M. D. Hanigan, and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.

T126 Maternal weight and P8 fat amount affects IGFB2 expression in semitendinosus muscle tissue of the developing fetus. C. J. Fitzsimmons*1,2, R. Feldmann3, Z. A. Kruk1,3, S. Truran1, D. Lines1, D. Rutley2, and S. Hiendleder1,4, 1JS Davies Epigenetics and Genetics Group, Discipline of Agricultural and Animal Science, The University of Adelaide, Roseworthy Campus, Roseworthy, South Australia, Australia, 2Agriculture and Agri-Food Canada, Department of Agricultural, Food, and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada, 3Chungnam National University, Daejeon, South Korea, 4Research Centre for Reproductive Health, The University of Adelaide, Adelaide, South Australia, Australia.

T127 Fetal growth is substantially modulated by at least two different genetic loci in the middle part of bovine chromosome 6. A. Eberlein*, A. Takasuga4, K. Setoguchi5, R. Pfuhl6, K. Fliskowski7, R. Fries7, N. Klop9, K. Suhr8, R. Weikard1, and Ch. Kühn*, 1Research Institute for the Biology of Farm Animals, Dummerstorf, Germany, 2Shirakawa Institute of Animal Genetics, Fukushima, Japan, 3Cattle Breeding Development Institute of Kagoshima Prefecture, Kagoshima, Japan, 4Chair of Animal Breeding, Technische Universität München, Freising, Germany, 5Helmholtz Zentrum, Munich, Germany.

T128 Relationships between growth and metabolic programs heifers on two nutrition programs. F. Abeni*, L. Calamari2, G. Pirlo*1, and L. Stefanini3, 1CRA-FLC, Cremona, Italy, 2Istituto di Zootecnica, U.C.S.C., Piacenza, Italy, 3Azienda Sperimentale V. Tadini, Gariga di Podenzano, Italy.

T129 Luminal energy supply (but not substrate) affects expression of mRNA for three proteins capable of amino acid transport by ileal epithelium (but not duodenal or jejunal) of forage-fed growing beef cattle. S. F. Liao*, J. A. Boling, and J. C. Matthews, University of Kentucky, Lexington.


T133 Assisted reproductive technologies (ART) have a dramatic effect on cell proliferation in ovine fetal membranes (FM) during early pregnancy. P. P. Borowicz*, L. P. Reynolds1, L. R. Coupe1, G. Ptak2, R. Loi2, P. A. Scapolo2, A. Cuomo2, C. Palmieri2, and A. T. Grazulis-Bilska*, 1North Dakota State University, Fargo, 2Department of Comparative Biomedical Sciences, Faculty of Veterinary Medicine, University of Teramo, 64100 Teramo, Italy.

T134 SCD1 induction during early differentiation of bovine preadipocytes. L. Ma*, A. J. Lengi, and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg.

T135 Conjugated linoleic acid effects on adiposity are independent of spot 14 gene expression in mice. M. Hussein*, K. Harvatine, Y. Boisclair, and D. Bauman, Cornell University, Ithaca, NY.

T136 The effect of KemTRACE® chromium propionate supplementation on global gene expression in adipocytes of finishing pigs. L. Wonderling*, J. Hahn, M. Spurlock*, and A. Jourdan, 1Kemin Industries, Des Moines, IA, 2Iowa State University, Ames.


T138 Characterization of ovine fetal heart gene expression during fetal growth restriction. K. A. Partyka*, J. S. Barry3, R. V. Anthony2, and H. Han1, 1Colorado State University, Fort Collins, 2University of Colorado Health Sciences Center, Aurora.

T139 Development of a protocol for staining BrdU-labeled cells within cryosections of bovine mammary tissue that is suitable for subsequent transcriptome analysis. R. K. Choudhary*, K. M. Daniels1, C. Clover2, and A. V. Capuco1, 1University of Maryland, College Park, 2Bovine Functional Genomics Laboratory, USDA-ARS, Beltsville, MD.


Growth hormone does not stimulate IGF-I mRNA expression in bovine skeletal muscle, myoblasts, or myotubes. X. Ge and H. Jiang*, Virginia Polytechnic Institute and State University, Blacksburg.


Horse Species

Influence of extension on the stock-type western pleasure jog. M. Nicodemus* and J. Williams, Mississippi State University, Mississippi State.


Temporal variables of the Marsh Tacky intermediate gait. M. Nicodemus* and J. Beranger, Mississippi State University, Mississippi State, American Livestock Breeds Conservancy, Pittsboro, NC.


The evaluation of the miniature horse as a nutritional model for full size horses fed various levels of dietary fat. J. S. Pendergraft*, B. Gutierrez*, and M. J. Arns*, Sul Ross State University, Alpine, TX.


Meat Science and Muscle Biology 2


Wet distillers grains with or without solubles and vitamin E supplementation alter proximate and mineral composition of beef. L. S. Senaratne, C. R. Calkins*, and A. S. de Mello Jr., University of Nebraska, Lincoln.


Effect of slaughter end point on pH of beef carcasses from British or Continental versus Nellore crossbred cattle. R. Mello*, F. D. de Resende*, A. C. de Queiroz*, M. H. de Faria*, F. Maldonado*, and P. V. R. Paulino*, Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
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T158 Post-mortem variation in temperature of beef carcasses in relation to breed and slaughter end point. R. Mello*1, A. C. de Queiroz2, F. D. de Resende3, M. H. de Faria4, G. R. Siqueira1, and J. S. de Oliveira2, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil.

T159 Effect of breed and production system on the content of cis-9, trans-11 CLA in m. longissimus lumborum and m. semimembranosus of lambs. G. Davila El Rassi*1, V. Banskalieva1, and M. Brown1, 2M. Kerr Food and Agricultural Products Center, Oklahoma State University, Stillwater, 1USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.


T161 Feeding flaxseed to beef cows increases plasma omega-3 linolenic acid levels. M. L. He*1,2, Y.-H. Chung3, K. A. Beauchemin3, P. S. Mirm4, L. L. Aalhus5, M. E. R. Dugan4, and T. A. McAllister5, 1Agriculture & Ag-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Dept. of Animal and Poultry Sciences, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 3Agriculture & Ag-Food Canada Research Centre, Lacombe, Alberta, Canada.

T162 Grazing or concentrate feeding for 11 months prior to slaughter: Influence on colour and sensory characteristics of beef. A. P. Moloney*1,2, A. Black3, P. G. Dunne4, and F. J. Monahan5, 1Teagasc, Grange Beef Research Centre, Dunsany, County Meath, Ireland, 2Teagasc, Ashtown Food Research Centre, Ashtown, Dublin, Ireland, 3Agriculture & Ag-Food Canada Research Centre, Lethbridge, Alberta, Canada, 4Agriculture & Ag-Food Canada Research Centre, Lacombe, Alberta, Canada.

T163 The influence of forage diets and aging on beef palatability. T. Jiang*1, J. R. Busboom1, M. L. Nelson1, J. O’Fallon1, T. P. Ringkob2, D. Joos2, K. R. Rogers-Kle1, and K. Piper1, 1Washington State University, Pullman, 2University of Nevada, Reno.

T164 Influence of management systems on meat quality of heifers fed with different lipid supplements in the finishing phase. M. C. A. Santana*1, T. T. Berchielli2, R. A. Reis1, A. V. Pires2, G. Fiorenzi1, and M. A. A. Balsalobre1, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil, 3Bellman, Mirassol, São Paulo, Brazil.

T165 Hypocholesteremic effect of turmeric powder and sodium selenite in Ross broilers reared under heat stress conditions. A. Zeinali*1, A. Riasi2, H. Farhangfar1, and H. Ziaei3, 1Birjand University, Birjand, Iran, 2Agricultural Research Center, Birjand, Iran.

T166 Cloning and expression of porcine carboxypeptidase A1 for feed application. Y. Zhao1, H. Zhao1, J. C. Zhou1, X. J. Xia1, and X. G. Lei*1,2, 1Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya’an 625014, China, 2Cornell University, Ithaca, NY.

T167 Determination of optimal conditions for hydrolysis of conjugated deoxynivalenol in corn and wheat with trifluoromethanesulfonic acid. S.-T. Tran*, T. K. Smith, University of Guelph, Guelph, Ontario, Canada.

T168 Efficacy of a commercial purified phyllosilicate in preventing fumonisins toxicity in finishing pigs. C. A. Mallmann1, P. Dilkin1, L. Giacomini1, R. H. Rauber1, and J. Garcia-Sirera*, 1Universidade Federal de Santa Maria, Laboratorio de Analises Micotoxicologicas (LAMIC), Santa Maria, RS, Brasil, 2Special Nutrients, Miami, FL.


T170 Heterologous expression of recombinant porcine elastase 2 as a feed enzyme. Y. J. Zhang1, H. Zhao1, J. C. Zhou1, X. J. Xia1, and X. G. Lei*1,2, 1Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya’an 625014, China, 2Cornell University, Ithaca, NY.

T171 Expression and purification of porcine pancreatic carboxypeptidase B in a yeast system. Y. Liu1, H. Zhao1, J. C. Zhou1, X. J. Xia1, and X. G. Lei*1,2, 1Int. Ctr of Future Agriculture for Human Health, Sichuan Agri. Univ., Ya’an 625014, China, 2Cornell University, Ithaca, NY.


T175 Comparative effects of phytase derived from Escherichia coli and Aspergillus niger in laying hens. L. Yan*1, H. D. Jang1, S. M. Hong1, H. S. Kim1, Y. Hyun1, and I. H. Kim1, 1Dankook University, Cheonan, Choongnam, Korea, 2Seoul Feed, Co. LTD, Seoul, Korea.

T177  Effects of different dietary combinations of antibiotics, benzoic acid and probiotic for weaning pigs. G. F. Lopes1, L. Alebrante1, D. L. Santos1, G. G. Garcia2, A. A. Passos3, R. Balestrin3, and G. J. M. M. Lima4, 1Vitamix Animal Nutrition, 2Santa Maria Federal University, 3DSM, 4Embrapa.

T178  Effect of phytase supplementation on the calcium and phosphorus balance in adult cannulated ganders. J. Tossenberger1, L. Babinszky1, and D. Feuerstein1,2, 1Kaposvár University, Kaposvár, Hungary, 2BASF SE, Ludwigshafen, Germany.

T179  Genetic engineering of an Escherichia coli mutant phytase for thermostability does not affect the enzymatic efficacy in a diet for young pigs. L. E. Denmark, J. D. Weaver, K. R. Roneker, and X. G. Lei1, Cornell University, Ithaca, NY.


T181  Screening based on antibacterial and phytase activities of lactic acid bacteria towards their use as a chicken probiotic supplement. H. R. Taheri*, H. Moravej1, F. Tabanede2, M. Zaghari1, and M. Shivazad1, 1University of Tehran, Karaj, Tehran, Iran, 2National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.


T183  Evaluation of antimicrobial activity of organic acids against Salmonella typhimurium isolated from swine. M. R. Messina*, E. Grilli1, S. Albonetti1, and A. Piva1, 1DIMORFIPA, University of Bologna, Italy, 2DSPVPA, University of Bologna, Italy.

T184  Effect of Natuzyme supplementation on broiler performance in deficient standardized ileal threonine diets. S. Khalaji, M. Zaghari*, and M. Shivazad, University of Tehran, Karaj, Iran.

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Nutrients

T185  Effects of protein and sulfur AA concentration in diets fed to weaning pigs on growth performance and diarrhea incidence. T. C. S. Reis*, G. Mariscal-Landin1, P. E. Urriola1, and H. H. Stein1, 1Universidad Autonoma de Queretaro, Queretaro, Mexico, 2INIFAB CENID Fisiologica, Queretaro, Mexico, 3University of Illinois, Urbana.


T187  Apparent ileal digestibility of CP and amino acids in pigs fed sorghum-soybean meal diets supplemented with phytase. M. Cervantes*, E. Sánchez1, A. Morales2, A. Araiza1, W. Sauer1, M. Barrera1, and J. Yáñez2, 1ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2Universidad Autónoma de Tlaxcala, Tlaxcala, México.


T189  Effects of NCG or Arginine on immune function of intestinal mucosa in weaning period of piglets. X. Wu, Y. Gao, Y. Yin*, X. Zhou, R. Huang, Z. Tang, M. Geng, and T. Li, Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, China.


T192  Intestinal absorption of vitamin B2 in growing pigs. D. Prévétourd1, C. L. Girard1, F. Guay1, N. LeFloc’h1, and J. J. Matte1, 1Dairy & Swine R&D Centre, Agriculture & Agri-Food Canada, STN-Lennoisville, Sherbrooke, QC, Canada, 2Laval University, Quebec City, QC Canada, 3UMR 1079 SENAH, INRA, St-Gilles, France.

T193  Multivariate nonlinear mixed effect models for protein and lipid deposition in growing pigs. A. B. Strathe*1 and E. Kebreab2, 1University of Copenhagen, Copenhagen, Denmark, 2University of Manitoba, Winnipeg, Manitoba, Canada.
Impacts of zinc and arginine in the piglets diets at weaning on inflammatory reaction and antioxidant potential. N. Bergeron*, A. Hudon-Thibault, M. Roy, and F. Guay, Université Laval, Québec, Québec, Canada.

Meta-analytic study of phosphorus excretion in pigs. R. S. Dias*, J. Chen, J. Ellis, E. Kebrebä, S. Lopes, D. M. S. Vitti, M. Fan, and J. France, 1University of Guelph, Guelph, Ontario, Canada, 2University of Manitoba, Winnipeg, Manitoba, Canada, 3Universidad de León, León, Spain, 4Centro de Energia Nuclear na Agricultura, Piracicaba, São Paulo, Brazil.


Effect of betaine partially replacing dietary methionine on nutrient digestibility and on serum metabolites and enzymes of broiler chickens. H. Sun, W. R. Yang, Y. Wang, Z. B. Yang*, S. Z. Jiang, and G. G. Zhang, 1Shandong Agricultural University, Tai-an, Shandong, P. R. China, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, P.O. Box 3000, Lethbridge, AB, Canada.

Effects of decreased levels of crude protein in nursery diets on growth performance and diarrhea occurrence of pigs weaned at 21 days. C. J. Girotto Jr.*, F. F. Barbosa, P. F. Campos, P. C. Brustolini, and J. V. Moutinho, Federal University of Viçosa, Viçosa, Minas Gerais, Brazil.

Effects of decreasing nutrient density of diet on Cu and nutrient absorption in ileal tissue of broilers. B. E. Aldridge* and J. S. Radcliffe, Purdue University, West Lafayette, IN.

The effect of period and duration of feeding restriction on nitrogen balance in pigs. M. Richer-Lanciault, M. Roy*, J. F. Bernier, R. Fillion, M. Lessard, and F. Guay, Université Laval, Quebec, Quebec, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 3CDPQ, Quebec, Quebec, Canada.

Effects of feeding sodium selenite vs. selenium yeast as the selenium source for sows during late gestation. P. L. Shinde, P. F. Campos, P. C. Brustolini, and J. V. Mou, University of California - Davis, Tulare, University of Florida, West Lafayette, IN.

Efficacy of Cr (III) supplementation on growth, carcass composition, blood metabolites, and endocrine parameters in finishing pigs. M. Q. Wang*, Y. D. He*, and Z. R. Xu, 1Animal Science College of Zhejiang University, Hangzhou, Zhejiang, P. R. China, 2The Key Laboratory of Molecular Animal Nutrition, Ministry of Education, Hangzhou, Zhejiang, P. R. China.

Biochemical profile of broiler chicken supplemented with organic selenium (SelPlex®) in total replacement of inorganic selenium (sodium selenite). F. M. Gonçalves, M. N. Corrêa, M. A. Aneciuti, F. Rutz, and F. A. B. Del Pino, Federal University of Pelotas, Pelotas, RS, Brazil.


Antagonistic strains isolated from the porcine gastrointestinal tract. V. Klose*, K. Bayer, R. Bruckbeck, A. P. Loibner, and G. Schatzmayr, BOKU-University, Vienna, A-3430 Tulln, Austria, 2BIOMIN Research Center, A-3430 Tulln, Austria.

The effect of period and duration of feeding restriction on compensatory growth and global growth performances in pigs. M. Richer-Lanciault*, J. F. Bernier, R. Fillion, M. Lessard, and F. Guay, Université Laval, Quebec, Quebec, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 3CDPQ, Quebec, Quebec, Canada.

Citrulline as a parameter for villus atrophy in weaned piglets. L. der Kinderen*, H. Zwolschen, D. Bravo, A. Mul, and E. Bruininx, CCL Research, Veghel, The Netherlands, 2Cehove Landbouwbelang Voeders Nederland, Veghel, the Netherlands, 3Pancosma, Geneva, Switzerland, 4Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands.

Physiology and Endocrinology

Estrous Synchronization


Effect of reusing CIDRs on the pregnancy rate of beef cattle. W. A. Greene* and M. L. Borger, The Ohio State University, Wooster.
T212  Reproductive outcomes of beef heifers treated with various duration of CIDR exposure in a modified timed-AI protocol. A. Ahmadzadeh, D. Falk, D. Gunn, J. B. Hall, and B. Glaze; 1University of Idaho, Moscow, 2University of Idaho, R & E Center, Fort Hall, 3University of Idaho, R & E Center, Salmon, 4University of Idaho, R & E Center, Twin Falls.


T215  Use of eCG, hCG, or estradiol cypionate (ECP) after CIDR removal in Creole Rodeo multiparous cows. J. A. Ramirez-Godinez*, L. V. Beltran-Prieto, E. Santellano-Estrada, and A. Flores-Mariñelareña; Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, Mexico.

T216  Effect of body condition score on estrus expression, and AI and breeding season pregnancy rates in beef cows synchronized with progesterone supplemented protocols. R. Kasimanickam* and W. D. Whittier; Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg.

T217  Comparison of the CIDR Select and 5 day CO-Synch + CIDR protocols for synchronizing estrus in beef heifers. P. J. Gunn*, K. C. Culp, R. P. Arias, R. P. Lemenager, K. Heaton, S. Lake, and G. A. Bridges; 1Purdue University, West Lafayette, IN, 2Utah State University, Logan, 3University of Wyoming, Laramie.

T218  Effect of double prostaglandin injections in the Ovsynch® protocol on serum progesterone in cycling dairy cows. J. L. Fain*, E. R. Waggoner, and J. R. Gibbons; Clemson University, Clemson, SC.


T221  Follicular wave of the ovulatory follicle and not cyclic status influences fertility of dairy cows. R. S. Bisinotto*, R. C. Chebel*, and J. E. P. Santos; 1University of Florida, Gainesville, 2University of California Davis, Tulare.


T225  Effect of follicular replacement prior to ovsynch and use of somatotropin at insemination on pregnancy rate at first service of Holstein cows exposed to warm climate. D. R. Lozano* and C. F. Aréchiga; 1Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguasalientes, Aguasalientes, México, 2Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México.


T227  Effects of presynchronization with hCG 7 d prior to estrus synchronization and fixed-time AI (TAI) on fertility and concentrations of progesterone in suckled beef cows. G. Marquezeini*, C. R. Dahlen, S. L. Bird, B. J. Funnell, and G. C. Lamb; 1North Florida Research and Education Center, University of Florida, Marianna, 2Northwest Research and Outreach Center, University of Minnesota, Crookston, 3North Central Research and Outreach Center, University of Minnesota, Grand Rapids.

T228  Comparison of two protocols to achieve pregnancy to fixed-time artificial insemination (TAI) in suckled beef cows. S. E. Echternkamp*, W. G. Hays, S. A. Jones, and R. A. Cushman; USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.
T229 Relationship between follicular profiles and the superovulatory responses in cattle. H. Kohram* and H. Kermani Moakhar, Department of Animal Science, Faculty of Agriculture, Karaj, Tehran, Iran.

T230 Ovarian follicular dynamics during the estrous cycle in water buffalo. H. Kohram*1, G. Mohammadi2, and E. Dirandeh1, 1University of Tehran, Iran, 2Shahid Chamran University, Ahvaz, Khoozestan, Iran.

T231 The response to a progestin-based ovulation induction in anoestrous goats is enhanced by bovine somatotropin applied 5 days before the end of progestin treatment. A. M. Martinez, C. G. Gutierrez, Y. Dominguez, and J. Hernandez-Ceron*, Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, México.

T232 Ovarian response to different doses of eCG after synchronization of estrous and ovulation with CIDR during 14 days in the breeding season in goats. L. F. Uribe-Velásquez*1, M. I. Lenz Souza2, and J. H. Osorio1, 1University of Caldas, Manizales, Caldas, Colombia, 2Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.

T233 Origin and fate of preovulatory follicles after induced luteolysis at different stages of the luteal phase of the estrous cycle in ewes. L. F. Uribe Velásquez*1, M. I. Lenz Souza2, and M. Vélez Marín1, 1University of Caldas, Manizales, Caldas, Colombia, 2Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.

T234 Endocrine function and follicular growth in sheep treated with exogen progesterone. L. F. Uribe Velásquez*1, M. I. Lenz Souza2, and A. Correa Orozco1, 1University of Caldas, Manizales, Caldas, Colombia, 2Federal University of Mato Grosso do Sul, Campo Grande, MS, Brazil.

T235 Real time PCR quantification of mRNA expression in the corpus luteum of cows induced to ovulate following different hormonal treatments. P. Ponce Barajas*1,2, M. G. Colazo1, J. P. Kastelic1, M. K. Dyck1, and D. J. Ambrose1, 1Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 2University of Alberta, Dept of Agricultural Food and Nutritional Science, Edmonton, AB, Canada, 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Production, Management and the Environment
Dairy

T236 A stochastic decision support system tool for dairy expansion. J. Janowski* and V. E. Cabrera, University of Wisconsin, Madison.

T237 Airborne endotoxin concentrations at a large open lot dairy in Southern Idaho. R. S. Dungan and A. B. Leytem*, USDA-ARS, Kimberly, ID.

T238 Iodine levels in Canadian bulk-tank milk. S. I. Borucki-Castro*1, R. Berthiaume1, S. Turcotte2, A. Robichaud2, and P. Lacasse2, 1Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Health Canada, Food Directorate, Health Products and Food Branch, Longueil, QC, Canada.

T239 Sicilian dairy herd demographics with a focus on culling. D. Galligan*1, G. Azzaro2, A. Pozzebon2, S. Ventura2, and G. Licitra2, 1University of Pennsylvania, School of Veterinary Medicine, Kennett Square, 2CoRFiLaC, Regione Siciliana, Ragusa, Italy, 3D.A.C.P.A., University of Catania, Italy.

T240 The effect of pregnancy on milk fat percent. C. D. Dechow*1, J. E. Vallimont1, J. S. Clay2, and C. G. Sattler1, 1The Pennsylvania State University, University Park, 2Dairy Records Management Systems, Raleigh, NC, 3Select Sires, Inc., Plain City, OH.

T241 Effect of rumen protected niacin (NiaShure) supplementation during summer on milk production, and composition in lactating dairy cows. S. Emanuele*1 and D. Schoenbaum2, 1Balchem, New Hampton, NY, 2Akey, Lewisburg, OH.

T242 Effect of mixing before on-farm milk sampling on milk fat percent. M. Vazirigohar* and M. Dehghan Banadaki, University of Tehran, Karaj, Tehran, Iran.


T245 Deviation of reticular temperatures in association with mastitis and estrus. J. M. Bewley*1,2, M. E. Einstein1, M. W. Grott1, and M. M. Schutz1, 1Purdue University, West Lafayette, IN, 2University of Kentucky, Lexington.

T246 Effect of Gammulin supplementation in milk of dairy calves during the first 24 d of life on growth and health. G. Lopes Jr.*1, L. G. D. Mendonça1, S. Hayes2, and R. C. Chebel1, 1Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, 2APC Inc., Ankeny, IA.
Ruminant Nutrition

Additives

T249 Effects of capsicum extract on intake and performance of feedlot calves. A. L. Cardillo1, A. D. Giacarena1, C. Faverin1, G. A. Gagliastro1, J. M. Hernandez Vieyra2, and D. Colombo**1, 1INTA, Balcarce, Buenos Aires, Argentina, 2Universidad de Buenos Aires, Buenos Aires, Argentina, 3CONICET, Buenos Aires, Argentina, 4Pancosma, Geneva, Switzerland.

T250 Effect of a mixture of eugenol and cinnamaldehyde on milk production and composition of goats during the first five months of lactation. D. Bravo*1, N. Manteaux2, P. H. Doane3, Y. Senlis2, and M. Cecava3, 1Pancosma, Geneva, Switzerland, 2Pancosma, Geneva, Switzerland, 3Sanders Nutrition Animale, Bruz, France, 4ADM Research, Decatur, IL.

T251 Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini1, D. Bravo*2, S. Calsamiglia1, M. Rodriguez1, and A. Ferret1, 1Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma, Geneva, Switzerland.

T252 Effect of feeding eugenol on ruminal fermentation and carbohydrate digestion in the digestive tract of beef cattle fed finishing ration. W. Z. Yang*1, C. Benchaar2, B. N. Metata3, M. L. He4, and K. A. Beauchemin5, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3University of Alberta, Edmonton, AB, Canada.

T253 Effects of eugenol supplementation on ruminal fermentation, protozoa counts, and in situ ruminal degradation of soybean meal, grass/legume hay, and corn grain in dairy cows fed high- or low-concentrate diets. C. Benchaar*1, W. Z. Yang2, H. V. Petit1, and P. Y. Chouinard3, 1Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Université Laval, Département des Sciences Animales, Québec, QC, Canada.

T254 Effects of eugenol supplementation on feed intake, nutrient digestibility, nitrogen retention, milk production, and milk composition of dairy cows fed high- or low-concentrate diets. C. Benchaar*1 and P. Y. Chouinard2, 1Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, 2Université Laval, Départements des Sciences Animales, Québec, QC, Canada.

T255 Assessment of the potential of cinnamaldehyde, condensed tannins, and saponins to modify milk fatty acid composition of dairy cows. C. Benchaar*1 and P. Y. Chouinard2, 1Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, 2Université Laval, Département des Sciences Animales, Québec, QC, Canada.

T256 Screening the activity of medicinal plants or spices on in vitro ruminal methane production. H. Jahani-Azizabadi1, M. Danesh Mesgaran1, A. R. Vakili1, A. R. Heravi Moussavi2, and M. Hashemi1, 1Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, 2Research and Petroleum Engineering Center of Kermanshah, Kermanshah, Iran.

T257 Effects of cinnamaldehyde on rumen production and ruminal fermentation of medium and high-concentrate diets. C. Kamel1, H. M. R. Greathed2, M. L. Tejido3, M. J. Ranilla*4, M. E. Martinez1, C. Saro1, and M. D. Carro2, 1Faculty of Biological Sciences, University of Leeds, Leeds, United Kingdom, 2Departamento de Producción Animal, Universidad de León, León, Spain.

T258 Evaluation of plant extracts in natural-fed finishing cattle. N. A. Pyatt1, D. Bravo1, and P. H. Doane1, 1ADM Research, Decatur, IL, 2Pancosma Research, Geneva, Switzerland.

T259 Effect of yellow mustard glucosinolates on ruminal fermentation in vitro. R. A. Hristov1, A. N. Hristov2, S. Zaman1, and V. Borek3, 1Pennsylvania State University, University Park, 2University of Idaho, Moscow.

T260 Effects of Saccharomyces cerevisiae on ruminal pH and fermentation of Holstein dairy cows. Y.-H. Chung*1, L. Holsthausen1, N. Walker2, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Lallemand Animal Nutrition, Montréal, QC, Canada.

T261 Multiple study analysis of the effect of live yeast (Saccharomyces cerevisiae CNCM I-1077) on milk and milk component production and feed efficiency. M. B. de Ondarza1, C. J. Sniffen2, L. Dusser1, E. Chevaux1, J. Sullivan3, and N. Walker1, 1Paradox Nutrition, LLC, West Chazy, NY, 2Fencrest, LLC, Holderness, NH, 3Lallemand Animal Nutrition, Milwaukee, WI.
T262 Potential of yeast-supplemented barley based dairy cow diets. L. Holtshausen* and K. A. Beauchemin, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.


T266 Effects of live yeast on growth performances and meat quality of beef cattle fed fast or slow fermentable diets. A. Agazzi1, G. Invernizzi1, M. Feroni1, V. Vandoni1, C. A. Sgoifo Rossi1, G. Savoini*, V. Dell’Orto1, and E. Chevaux2, 1University of Milan, Milan, Italy, 2Lallemand, Bagnac, France.

T267 Effect of live yeast Saccharomyces cerevisiae (strain Sc 47) on ruminal nitrogen degradation in relation with varying levels of protein solubility. C. Julien1, J. P. Marden1, E. Auclair2, R. Moncoulon1, and C. Bayourthe*, 1Université de Toulouse, INRA, Castanet-Tolosan, France, 2Lesaffre Feed Additives, Marquette-Lez-Lille, France.

T268 Effect of live yeast dietary supplementation on growing calves performance and health. V. Bontempo*, A. Agazzi1, E. Chevaux2, V. Dell’Orto1, and G. Savoini, 1Dept Veterinary Science and Technologies for Food Safety, University of Milan, Italy, 2Lallemand SAS, Blagnac Cedex, France.

T269 Reduced carriage of Escherichia coli O157:H7 in cattle fed yeast culture supplement. L. Liou1, H. Sheng1, W. Ferens1, C. Schneider2, A. N. Hristov*, I. Yoon4, and C. J. Hovde1, 1Department of Microbiology, Molecular Biology and Biochemistry, University of Idaho, Moscow, 2Department of Animal and Veterinary Science, University of Idaho, Moscow, 3Department of Dairy and Animal Science, Pennsylvania State University, University Park, 4Diamond V Mills, Inc., Cedar Rapids, IA.


T273 Feedlot performance of Nellore and Brangus cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. D. D. Millen1,2, R. D. L. Pacheco1, M. D. B Arrigon1, C. L. Martins1, T. M. Mariani1, J. P. S. T. Bastos1, L. M. N. Sarti1, R. S. Barducci1, and S. R. Baldini1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil.

T274 The interaction of flaxseed hulls and monensin on feed intake, apparent digestibility, and milk composition of late-lactating dairy cows. C. Côrtes*1, D. C. da Silva1, R. Kazama1, N. Gagnon1, C. Benchara2, G. T. dos Santos1, L. M. Zeoula1,3, and H. V. Petit1, 1Agriculture and Agri-Food Canada, Quebec, Canada, 2Universidade Estadual de Maringa, Parana, Brazil, 3CNpq, Brazil.

T275 Feeding behavior of Nellore and Brangus cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. T. M. Mariani1,2, D. D. Millen1,2, R. D. L. Pacheco1, C. L. Martins1, J. P. S. T. Bastos1, R. S. Barducci1, L. M. N. Sarti1, R. S. Baldini1, D. Tomazella1, E. S. Ogawa1, F. S. Parra1, and J. R. Ronchesel1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil.

T276 Feedlot performance of Brangus cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. R. S. Barducci1,2, L. M. N. Sarti1, M. D. B Arrigon1, R. D. L. Pacheco*1, D. D. Millen1, C. L. Martins1, S. R. Baldini1, F. S. Parra1, J. R. Ronchesel1, D. Tomazella1, T. Leiva1, H. D. Rosa1, T. M. Mariani1, J. P. S. T. Bastos1, T. C. Putarovi1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2Apoio FAPESP, São Paulo, Brazil.

T277 Rumen papillae measurements of feedlot cattle fed monensin or polyclonal antibody preparation against lactate-producing rumen bacteria. L. M. N. Sarti1, R. S. Barducci1, D. D. Millen1, R. D. L. Pacheco1, M. D. B. Arrigon1, C. L. Martins1, S. F. Costa1, L. Q. Melo1, F. S. Parra1, J. R. Ronchesel1, D. Tomazella1, H. D. Rosa1, T. Leiva1, S. R. Baldini1, N. R. B. Consolo1, 1FMVZ/Unesp, Botucatu, São Paulo, Brazil, 2UFBA, Lavras, Minas Gerais, Brazil, 3Apoio FAPESP, São Paulo, Brazil, 4UD/Unesp, Dracena, São Paulo, Brazil.

T278 Influence of virginiamycin supplementation on ruminal fermentation and microbial populations of steers. T. J. Guo1, J. Q. Wang*, D. P. Bu1, J. P. Wang1, K. L. Liu1, D. Li1, S. Y. Luan1, and X. K. Huo1, 1Institute of Animal Science, State Key Laboratory of Animal Nutrition, Chinese Academy of Agricultural Science, Beijing, China, 2Xinjiang Agricultural University, Urumqai, China.
Combined use of ionophore and virginiamycin in Nellore steers fed high concentrate diets. A. J. C. Nuñez* 1,2, M. Caetano1, A. Feruloyl and acetyl esterase production of increasing levels of monensin on dairy cows in early lactation. G. F. Schroeder*1, B. D. Strang1, M. A. Shah1, M. A. Messman1, and H. B. Green2, *Cargill Animal Nutrition, Innovation Campus, Elk River, MN, 1Elanco Animal Health, Greenfield, IN.


Effect of monensin and propylene glycol on volatile fatty acid and rumen parameters in early lactation Holstein cows. H. Bahrami-Yekdangi, K. RezaYazdi, and M. Dehghan-Banadaky*, University of Tehran, Karaj, Tehran, I.R., Iran.

The interaction of flaxseed hulls and monensin on milk fatty acid composition of late-lactating dairy cows. C. Córtex*1, D. C. da Silva1,2, R. Kazama1,2, N. Gagnon1, C. Benchaa1, G. T. dos Santos1,2, L. M. Zeoula1,2, and H. V. Petit1, 1Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2Universidade Estadual de Maringa, Parana, Brazil, 3CNPq, Brazil.

Combined use of ionophore and virginiamycin in Nellore steers fed high concentrate diets. A. J. C. Nuñez*1,2, M. Caetano1, A. Berndt1, J. J. A. A. Demarchi1, P. R. Leme1, and D. P. D. Lanna1, 1ESALQ/USP, Piracicaba, SP, Brazil, 2FZEA/USP, Pirassununga, SP, Brazil, 3APTA Regional Extremo Oeste, Andradina, SP, Brazil.

Effects of an amylose inhibitor on rumen pH and feed intake of young Holstein heifers fed a 100% concentrate diet. A. Bach*,2, M. Devant*, A. Serrano1, and A. Aris*, 1ICREA, Barcelona, Spain, 2IRTA-Ruminant Production, Caldes de Montbui, Spain.

Effect of Bacillus subtilis natto on milk performance, ruminal fermentation, and microbial profile of dairy cows. L. F. Deng1, J. Q. Wang**, D. P. Bu2, K. L. Liu1, Y. M. Jiang1, Q. Chen1, P. Yu1, H. T. Zhang1, and J. K. Drackley*, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Agricultural Sciences, Beijing, China, 2University of Illinois, Urbana.

Probiotic effect of Bacillus subtilis (natto) on rumen bacterial diversity of weaning Holstein calves. P. Yu1, J. Wang*, D. Bu1, K. Liu1, D. Li1, and C. McSweeney1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing,China, 2CSIRO Livestock Industries, Queensland, Australia.


Effect of fibrolytic enzymes on ruminal fermentation and digestibility in steers fed a diet with sodium bicarbonate. O. D. Montaño-Valdez*1, J. M. Tapia Gonzalez2, G. Rocha-Chavez2, E. O. Flores-García2, and J. H. Avellaneda-Cevallos3, 1Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, México, 2Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán de Navarro, Jalisco, México, 3Universidad Técnica Estatal de Quevedo, Quevedo, Ecuador.

Effects of feeding a mixed enzyme on performance in Varamini male lambs. H. Baghershah*, K. Rezayazdi, and M. Dehghan-Banadaky, Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran.

Feruloyl and acetyl esterase production of an anaerobic rumen fungus Neocallimastix sp YQ2 and its potential in the hydrolysis of fibrous feedstuffs. Q. Yue1, H. J. Yang*, Y. C. Cao1, Y. H. Jiang1, and J. Q. Wang1, 1Department of Animal Nutrition and Feed Science, College of Animal Science and Technology, China Agricultural University,, Beijing, P.R. China, 2State key laboratory of Animal Nutrition, Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P.R., China.


Prebiotic performance in the prevention of acidosis of different substances using the ‘gas-in-vitro’ methodology in ruminal acidosis-like condition. A. R. Aldrovandi1, A. Britos1, S. Paz1, A. Molina1, C. Cajarville*, and P. Zunino2, 1Universidad de la República, Montevideo, Uruguay, 2Instituto de Investigaciones Biológicas Clemente Estable, Montevideo, Uruguay.

Effect of a prebiotic (AgrIMOS) and a probiotic (Levucell SB) on performance, health and fecal microflora of veal calves. K. Chong*, L. Phillip1, R. Cue1, and N. Walker1, 1McGill University, Montreal, QC, Canada, 2Lallemand, Animal Nutrition, Montreal, QC, Canada.

Effect of rumen-protected lysine (AminoShure™-L) on milk production and composition in dairy cows fed diets containing distillers dried grains. S. Emanuele*, P. Doane1, D. Putnam1, and M. Cecava1, 1Balchem, New Hampton, NY, 2ADM, Decatur, IL.

In vivo determination of lysine bioavailability of protected lysine in lactating dairy cows. M. D. Hanigan*, C. Vanderhoof1, S. Garbade2, O. Becvar2, C. A. Umberger2, and M. J. de Veth2, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Balchem Corporation, New Hampton, NY.

Supplementation of RuMin 8™ and urea on microbial crude protein, ammonia and volatile fatty acid concentrations in vitro. D. P. Bu1, X. Y. Li1, J. Q. Wang*, H. Y. Wei1, L. Y. Zhou1, and R. R. Rastani2, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2MSC, Campertaisville, IL.
T297  Effect of Optigen® on milk yield, composition, and component yields in commercial Wisconsin dairy herds. J. F. Inostroza*,1; R. D. Shaver2; V. E. Cabrera3, and J. M. Tricarico4, 1Department of Dairy Science, University of Wisconsin, Madison, 2Alltech Inc., Brookings, SD.

T298  Supplementation of grazing dairy cows with isopropyl ester of 2-hydroxy-4-methylthiobutanoic acid (HMBi). L. F. Greco*1,2, J. T. Neves Neto1, A. Moreira1, M. A. Penatti1, C. M. M. Bittar1, G. B. Mourao1, and F. A. P. Santos1, 1University of Sao Paulo, Piracicaba, Sao Paulo, Brazil, 2University of Florida, Gainesville.

T299  Effects of feeding 2-hydroxy-4-methylthio butanoic acid (HMTBa) and HMTBa chelated trace minerals on dairy cattle production. M. Gallardo1,2, G. Conti1, G. Castillo1, and S. Toffano*,1, 1Novus International Inc., Capital Federal, Buenos Aires, Argentina, 2EEA- Inta Rafaella, Rafaela, Santa Fe, Argentina, 3Universidad del Litoral, Esperanza, Santa Fe, Argentina.

T300  The impact of a blend of synthetic antioxidants [AGRADO® Plus] on milk fatty acids in dairy cows fed a high rumen unsaturated fatty acid load (RUFAL) diet. C. L. Preseault*1,2, J. Kraft1, G. R. Bowman2, H. M. Dann3, and A. L. Lock1, 1University of Vermont, Burlington, 2Novus International Inc., St. Charles, MO, 3William H. Miner Agricultural Research Institute, Chazy, NY.

T301  The effect of malic acid supplementation on diet digestibility and methane production by beef cattle fed a forage diet. S. M. Cobb, J. J. Michal, and K. A. Johnson*, Washington State University, Pullman.


T303  Effect of saponin extract supplementation on ruminal fermentation in continuous culture. J.-S. Eun*, C. M. Dschaak, F. H. Bhushan, Y.-M. Kim, and A. J. Young, Department of Animal Science, Oklahoma State University.


T306  Zipaterol hydrochloride impact on core body temperature, performance, and carcass characteristics of finishing steers. J. L. Wahrmund*,1, B. P. Holland1, C. R. Krehbiel1, M. N. Streeter2, D. A. Yates2, J. P. Hutcheson3, W. T. Nichols3, C. L. Goad4, and C. J. Richards5, 1Department of Animal Science, Oklahoma State University, Stillwater, 2Intervet/Schering-Plough, DeSoto, KS, 3Department of Statistics, Oklahoma State University, Stillwater.

T307  The effect of substituting fish oil in cow diets with DHA-micro algae on milk composition and fatty acids profile. R. B. Potu*,1, A. A. AbuGhazaleh1, and S. Ibrahim1, 1Southern Illinois University, Carbondale, 2North Carolina A&T University, Greensboro.

Ruminant Nutrition Efficiency

T308  Residual feed intake and feeding behavior of Nellore bulls selected for post-weaning weight. T. L. S. Corvino*,1, R. H. Branco2, A. Polizel Neto1, S. F. M. Bonilha2, L. A. Figueiredo2, and A. G. Razook1, 1Programa de Pós-graduação emZootecnia - UNESP, Botucatu, São Paulo, Brazil, 2CAPTA Pecuária de Corte - Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil.

T309  Effects of residual feed intake on carcass characteristics of Nellore bulls. S. F. M. Bonilha*,1, R. H. Branco2, G. F. Alleoni2, A. M. Castilhos3, L. A. Figueiro2, and A. G. Razook1, 1Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, SP, Brazil, 2Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Nova Odessa, SP, Brazil, 3Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu, SP, Brazil.

T310  Relationships between residual feed intake and internal organs of Nellore bulls. S. F. M. Bonilha*,1, R. H. Branco2, T. L. S. Corvino2, G. F. Alleoni2, L. A. Figueiro2, and A. G. Razook1, 1Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, SP, Brazil, 2Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu, SP, Brazil, 3Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Nova Odessa, SP, Brazil.

T311  Genetics of feed conversion efficiency: Using a dynamic metabolic model to investigate the patterns of nutrient flux in the most efficient dairy animals. C. Schachtschneider, J. L. Vierck, and J. P. McNamara*, Washington State University, Pullman.

T312  Associations between feed efficiency and gut microbial ecology and fermentation parameters in feedlot cattle. W. K. Krueger1,2, G. E. Carstens1,2, Z. D. Paddock1,2, T. R. Calloway1, R. C. Anderson1, N. A. Krueger1, V. Gontcharova1, S. E. Dowd2, R. R. Gomez3, and W. E. Pinchak1, 1Intercollegiate Faculty of Nutrition, Texas A&M University, College Station, 2Department of Animal Science, Texas A&M University, College Station, 3USDA, ARS, Food and Feed Safety Research Unit, College Station, TX, 4Medical Biofilm Research Institute, Lubbock, TX, 5Texas AgriLife Research, Texas A&M University, Vernon.
Proteomic analyses in beef cows with low and high maintenance energy requirements. M. J. Prado-Cooper*1,2, R. D. Madden1, J. W. Dillworth1, C. L. Bailey1, E. C. Wright1, C. R. Krehbiel1, D. L. Step1, and R. P. Wettemann3, 1Oklahoma Agricultural Experiment Station, Stillwater, 2Universidad Centroccidental, Barquisimeto, Lara, Venezuela.

Forage intake, rumen and blood variables, ultrasound and body measurements and behaviour in pregnant beef heifers differing in phenotypic residual feed intake. P. Lawrence*1,2, M. McGee1, D. Kenny2, D. H. Crews, Jr.,1, and B. Earley3, 1Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 2UCD School of Agriculture, Food Science and Veterinary Medicine, Belfield, Dublin, Ireland, 3Department of Animal Sciences, Colorado State University, Fort Collins, 4Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland.

**Ruminant Nutrition**

**Feedlot**

Fatty acid profiles and meat quality of steers finished in feedlot or on pasture. H. O. Patino*1, F. S. Medeiros1, K. C. Swanson2, and M. A. Sierra1, 1Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, 2Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

Nutrient digestibilities of Holstein steers fed diets containing different levels of nonforage fiber in a low forage diet. M. Mojtahedi, M. Danesh Mesgaran*, A. R. Heravi Moussavi, and A. Tahmasbi, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.


Ruminal pH profile of feedlot steers during a 3-week period from a high-forage to high-concentrate diet. L. Holthausen*, K. A. Beauchemin, and K. S. Schwartzkopf-Genswein, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Influence of processing method on comparative digestion of white corn vs. conventional steam-flaked yellow dent corn in finishing diets for feedlot cattle. A. Plascencia*1; M. Cervantes1, M. A. Lopez-Soto1, D. May1, and R. A. Zinn2, 1Universidad Autonoma de Baja California, Mexicali, Baja California, Mexico, 2University of California, Davis, El Centro.


Performance of steers fed a high energy oat as a replacement for barley or corn in growing and finishing diets. G. R. Zalinko*, B. G. Rossnagel1, V. J. Racz1, D. A. Christensen1, and J. J. McKinnon1, 1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, 2Department of Plant Sciences, University of Saskatchewan, Saskatoon, SK, Canada.

Effects of replacing barley with corn grain in finishing diets on VFA concentration and ruminal ammonia nitrogen of Holstein male calves. F. Fatehi, M. Dehghan-Banadaky*, K. Reza-Yazdi, M. Moradi-Shahrbak, and H. Bahrami, The University of Tehran, Karaj, Tehran, Iran.


Feeding soybean meal, urea or slow release urea (Optigen) to finishing Zebu cattle. R. Carareto*1, F. A. P. Santos1, G. B. Mourão1, D. F. A. Costa1, A. M. Pedroso1, J. A. D. Pacheco Junior1, and J. C. Martinez1, 1University of Sao Paulo, Piracicaba, São Paulo, Brazil, 2University of Queensland, St. Lucia, Brisbane, Australia, 3Faculdade de Ciencias Agrarias e Veterinarias, Jaboticabal, São Paulo, Brazil.

The effects of crude protein concentration and urea source on nitrogen metabolism in Holstein steers. V. B. Holder*1, S. Elkadi2, J. M. Tricarico1, E. Vanzant1, K. M. McLeod1, and D. L. Harmon1, 1Department of Animal and Food Sciences, University of Kentucky, Lexington, 2Alltech Biotechnology, Nicholasville, KY.

Feed intake by Nellore and Red Norte bulls finished in feedlot. O. R. Machado Neto1, M. M. Ladeira*1, T. M. Gonçalves2, L. S. Lopes1, R. L. Oliveira2, M. S. Bassi1, D. M. Oliveira2, J. S. Ribeiro1, and E. O. S. Saliba3, 1Federal University of Lavras, Lavras, MG, Brazil, 2Federal University of Minas Gerais, Belo Horizonte, MG, Brazil.
Ruminant Nutrition
Grass Cattle

T328 Nutrient balance and fermentative parameters of continuously cultured rumen fluid maintained with bermudagrass hay and supplied with additional soybean hulls and(or) corn. A. I. Orr* and B. J. Rude, Mississippi State University, Mississippi State.


T330 Growth performance and metabolism of cow-calf pairs receiving a high or low total non-structural carbohydrate diet with or without folic acid and vitamin B12 supplementation of the dams. J. Mercier*, C. L. Girard, D. Cinq-Mars, and R. Berthiaume, Département des Sciences Animales, Pavillon Paul-Comtois, Université Laval, Québec, QC, Canada, Agriculture et Agroalimentaire Canada, Centre de Recherche sur le Bovin Laitier et le Porc, Sherbrooke, QC, Canada.


T332 Growth performance and breeding soundness of Angus bulls fed FlaxLic*. A. C. Pesta* and J. S. Drouillard, Kansas State University, Manhattan.


T335 Effects of protein or fat supplements for finishing beef cattle grazing tropical grass during dry season. A. A. Souza*, T. I. Ferreira, C. F. Martins, and J. C. Hadlich, UNIDEF/ANHANGUERA, Campo Grande, Mato grosso do Sul, Brazil, IAGRO, Campo Grande, Mato grosso do Sul, Brazil, UNESP, Botucatu, Sao Paulo, Brazil.


Small Ruminant
Lactation, Physiology, Reproduction, Health


T339 Thyroid hormones and blood metabolites of dairy goats supplemented with dietary iodine. A. Nudda, G. Battaccone, G. Bomboi, B. Flores, and G. Pulina*, Dipartimento di Scienze Zootecniche, University of Sassari, Italy, Dipartimento di Biologia Animale, University of Sassari, Italy, Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.


T341 The effects of shearing on milk production traits and milk fatty acid profile in Sarda dairy ewes. S. P. G. Rassu, M. G. Manca, R. Boe, R. Rubattu, A. H. D. Francesconi, and A. Nudda*, Dipartimento di Scienze Zootecniche, University of Sassari, Italy.

T342 Goat colostrum chemical composition evolution during 7 h postpartum. D. Sanchez-Macias, N. Castro, J. Capote, I. Moreno-Indias, and A. Argüello*, Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.

T343 Somatic cell count in milk of goats enrolled in Dairy Herd Improvement Program in 2007. L. Zhang, G. R. Wiggans, J. Clay, R. LaCroix, J. Z. Wang, T. Gipson, and S. S. Zeng*, Langston University, Langston, OK, Agricultural Research Center of China, Changchun, Jilin, China, Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD, Dairy Records Management Systems, North Carolina State University, Raleigh, AgSource Cooperative Services, Verona, WI.
T344 Excretion pattern of aflatoxin M1 in milk of goats fed a single dose of aflatoxin B1. G. Battacone*1, A. Nudda2, M. Decandia2, A. Mazzette1, M. Acciaro1, and G. Pulina12, 1Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy, 2Agenzia AGRIS Sardegna, Sassari, Italy.

T345 Lamb production in the Northern Patagonia with or without winter supplementation. L. Villar*1, E. Pavan2, M. Zimerman1, C. Giraudo1, and F. Santini3, 1INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina, 2INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina, 1INTA-CIA Castelar, Hurlingham, Buenos Aires, Argentina.

T346 Relationship between body condition score and fertility of Saanen goats under intensive conditions. A. Ata*1, M. Saatci2, and M. S. Gulay3, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Burdur, Turkey, 2Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Animal Science, Burdur, Turkey, 3Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey.

T347 Preliminary results of a comparison between Texas Rambouillet sheep and Australian Merino F1 crosses. C. J. Lupton1, F. A. Pfeiffer*1, W. S. Ramsey2, M. Salisbury3, D. F. Waldron1, J. W. Walker1, and T. D. Willingham1, 1Texas AgriLife Research, San Angelo, 2Texas A&M University, College Station, 3Angelo State University, San Angelo, TX.

T348 Two seasonal lambing in spring and fall increases reproductive efficiency of range sheep flock. T. Wuliji*1, H. Glimp2, and T. Filbin3, 1University of Nevada, Reno, 2Rafter 7 Ranch, Yerington, NV.

T349 A daily exposure for 4 hours to the male effect is sufficient to induce ovulatory activity in goats. J. A. Delgadillo*1, M. Bedos1, J. A. Flores2, G. Fitz-Rodriguez1, and B. Malpaux2, 1Centro de Investigacion en Reproduccion Caprina, Universidad Autonoma Agraria Antonio Narro, Torreon, Coahuila, Mexico, 2Physiologie de la Reproduction et des Comportements, UMR 6175 INRA-CNRS-Universite de Tours-Haras Nationaux, Nouzilly, France.

T350 Estrus and mating response after estrus synchronization protocols in meat goats. J. L. Eierman*1, D. J. O’Brien2, E. K. Crook1, R. A. Barczewski1, and N. C. Whitley2, 1Delaware State University, Dover, 2North Carolina A&T State University, Greensboro.

T351 Complement system activity on goats, hemolytic assay possibilities. I. Moreno-Indias*1, A. Argüello1, N. Castro2, J. Capote2, A. Morales-delaNuez1, and B. Sim1, 1Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, 2Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain, 3Oxford University, Oxford, United Kingdom.


T353 Comparison of raw versus post-differentially corrected GPS collar fixes in free-ranging goats. T. A. Gipson*1, S. P. Hart1, and R. Heinemann2, 1American Institute for Goat Research, Langston University, Langston, OK, 2Kiamichi Forestry Research Station, Oklahoma State University, Idabel.


T355 Comparison of copper sulfate and copper oxide wire particles as an anthelmintic for goats. S. P. Hart* and Z. Wang, E Kika de la Garza American Institute for Goat Research, Langston, OK.


T357 Small ruminant producer gastrointestinal nematode (GIN) management survey. N. C. Whitley*1, R. M. Kaplan2, J. M. Burke1, T. H. Terrill1, J. E. Miller1, W. R. Getz2, S. Mobini3, E. Valencia4, and M. J. Williams5, 1North Carolina A&T State University, Greensboro, 2University of Georgia, Athens, 3USDA, ARS, Booneville, AR, 4Fort Valley State University, Fort Valley, GA, 5Louisiana State University, Baton Rouge, 6University of Puerto Rico, Mayaguez, PR, 7NRCS, Gainesville, FL.


T359 Natural plant anthelmintic fails to reduce internal parasites in meat goat kids. D. J. O’Brien1, K. K. Mathews*1, J. E. Miller2, N. C. Whitley1, E. K. Crook1, and J. L. Eierman1, 1Delaware State University, Dover, 2Louisiana State University, Baton Rouge, 3North Carolina A&T State University, Greensboro.
SYMPOSIA AND ORAL SESSIONS
    ADSA Foundation Scholar Lecture - Production
    Chair: Ashraf Hassan, South Dakota State University
    513ef


SYMPOSIUM
    Animal Health
    Emerging Foreign Animal and Zoonotic Diseases
    Chair: Gary Snowder, National Center for Foreign Animal and Disease Defense
    Sponsors: Elanco Animal Health and Pfizer Animal Health
    511cf

9:30 AM  Potential threat of foreign animal diseases to US agriculture. T. Beckham*, *Texas Veterinary Medical Diagnostic Laboratory, Texas A&M University System, College Station.*

10:30 AM  Preventing and detecting foreign animal diseases. T. McKenna*, *Wisconsin Veterinary Diagnostic Laboratory, Madison.*


Breeding and Genetics
    Genomic Evaluation
    Chair: Curt Van Tassell, USDA-ARS
    510ac


10:00 AM  Genetic evaluation including phenotypic, full pedigree and genomic information. I. Misztal**, A. Legarra**, and I. Aguilar, 'University of Georgia, Athens, 'INRA SAGA, 32326 Castanet-Tolosan, France.

10:15 AM  Transition of genomic evaluation from a research project to a production system. G. R. Wiggans**, P. M. VanRaden**, L. R. Bacheller, F. A. Ross, T. S. Sonstegard, G. te Meerman, and C. P. van Tassell, 'ARS, USDA, Beltsville, MD, 'University Medical Center Groningen and University of Groningen, Groningen, the Netherlands.

10:30 AM  Can you believe those genomic evaluations for young bulls? P. M. VanRaden, M. E. Tooker*, and J. B. Cole, *USDA Animal Improvement Programs Laboratory, Beltsville, MD.*

10:45 AM  Break


11:15 AM  Pair genetic predictions. J. B. Cole*, *Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.*

11:30 AM  Comparison of Student’s t, LASSO, and multiple shrinkage methods for the prediction of genomic breeding values. C. Maltecca* and J. P. Cassidy, *North Carolina State University, Raleigh.*

11:45 AM  Equivalent mixed model for joint genetic evaluation considering molecular and phenotypic information. N. Gengler* and F. Colinet, 'Gembloux Agricultural University, B-5030 Gembloux, Belgium, 'National Fund for Scientific Research, B-1000 Brussels, Belgium.
12:00 PM 284  Effect of estimation approach and number of QTLs in accuracies of genomic breeding values for simulated data. G. Gaspà1, E. L. Nicolazzi2, R. Steri1, C. Dimaro1, and N. P. P. Macciotta*1, 1Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italia, 2Istituto di Zootecnica, Università Cattolica del Sacro Cuore, Piacenza, Italia.

Companion Animals
Chair: Gail Kuhlman, Procter and Gamble Pet Care
Sponsors: Procter and Gamble Pet Care and International Ingredient Corp.
511ad

9:30 AM  Introduction. Gail Kuhlman.

9:40 AM  285  Protein quality differences exist among high quality mammalian, avian, and marine protein sources evaluated using avian assays. T. A. Faber*1, D. C. Hernot1, C. M. Parsons1, K. S. Swanson1, S. Smiley2, P. J. Bechtel1,2, and G. C. Fahey, Jr.1, 1University of Illinois, Urbana, 2University of Alaska, Fairbanks, Alaska, 3Agricultural Research Service, Fairbanks, Alaska.

9:55 AM  286  Total tract nutrient digestibility, fecal characteristics, and blood chemistry profiles of dogs as affected by alphacyclodextrin supplementation. M. A. Guevara*1, K. A. Garleb1, and G. C. Fahey1, 1University of Illinois, Urbana, 1Abbott Nutrition, Columbus, OH.

10:10 AM  287  Influence of dietary protein on fecal quality and colonic tight junction gene expression in Miniature poodles and German shepherds. J. Nery*1,2, V. Leray1, V. Biourge3, L. Martin1, H. Dumon1, and P. Nguyen1, 1École Nationale Vétérinaire de Nantes, France, 2University of Turin, Italy, 3Royal Canin, Aimargues, France.

10:25 AM  288  Identifying relationships of urinary 5-hydroxyindoleacetic acid, homovanillic acid and cortisol with behavioural display during social isolation in the domestic dog. M. J. Toscano*, C. Basse, E. Blackwell, J. W. S. Bradshaw, and R. Casey, DFAS, University of Bristol, Langford, UK.


10:55 AM  290  Colonic protein metabolites and microbial populations are altered in adult cats by consumption of cellulose, fructooligosaccharides, or pectin. K. A. Barry*, B. J. Wojcicki, I. S. Middelbos, B. M. Vester, K. S. Swanson, and G. C. Fahey Jr., University of Illinois, Urbana.

11:10 AM  291  Apparent macronutrient digestibility of four raw meat diets in African wildcats, jaguars, and Malayan tigers. K. R. Kerr*, A. Beloshpaka1, C. Dikeman2, S. Burke1, L. G. Simmons2, and K. S. Swanson1, 1University of Illinois, Urbana, 1Henry Doorly Zoo, Omaha, NE.

11:25 AM  292  Response of the somatotropic axis and growth rate in mule deer (Odocoileus hemionus) fed three different diets from birth to 68 weeks of age. G. A. Comeau*1, S. McCusker2, J. P. Richmond3, L. A. Shipley2, E. A. Koutsos1, and S. A. Zinn1, 1University of Connecticut, Storrs, 2Washington State University, Pullman, 3Mazuri Exotic Animal Nutrition, St. Louis, MO.

11:40 AM  293  Effects of zinc amino acid complex and iron amino acid complex on performance, health and pelt quality of weaning blue fox (Alopex lagopus). Y. Zhang1, H. Wei1, D. J. Tomlinson*2, and T. L. Ward1, 1Institute of Special Wild Animal and Plant Science, Jilin, China, 2Zinpro Corporation, Eden Prairie, MN.

SYMPOSIUM
CSAS Symposium
Nutrition - Behavior Interaction in Ruminants
Chair: Karen Schwartzkopf-Genswein, Agriculture and Agri-Food Canada
Sponsors: EAAP and Intervet/Schering-Plough Animal Health
517b

9:30 AM  Introduction


10:05 AM  295  Interactions of nutrition and behavior in dairy calves. J. K. Drackley*, University of Illinois, Urbana.
10:35 AM 296 Understanding the behavior of growing dairy heifers from a nutritional perspective. T. J. DeVries*, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.


11:35 AM 298 Grazing preferences in sheep and cattle: Implications for production, the environment and animal welfare. S. M. Rutter*, Harper Adams University College, Newport, Shropshire, United Kingdom.

12:05 PM Closing

**SYMPOSIUM**

**Forages and Pastures**

**Forage Management Strategies of Offset High Input Costs**

Chair: David Combs, University of Wisconsin

524

9:30 AM 299 Effects of biological N fixation and nutrient cycling on stocking strategies for cow-calf and stocker programs. F. Rouquette Jr.* and G. Smith, Texas AgriLife Research, Overton.


11:00 AM 301 Effects of grazing management on productivity of cow/calf and stocker cattle with an emphasis on utilization of stockpiled tall fescue. M. H. Poore* and M. E. Drewnoski, North Carolina State University, Raleigh.


**Growth and Development**

**Physiology of Growth In Vivo and In Vitro**

Chair: Erin Connor, USDA ARS, Beltsville

Sponsor: Elanco Animal Health

511be

9:30 AM 303 Modeling lifetime growth and feed efficiency in pigs. A. B. Strathe*, A. Danfaer1, and E. Kebreab2, 1University of Copenhagen, Copenhagen, Denmark, 2University of Manitoba, Winnipeg, Manitoba, Canada.

9:45 AM 304 Stimulation of skeletal muscle protein synthesis in neonatal pigs by long-term infusion of leucine is amino acid dependent. F. A. Wilson, A. Suryawan, M. C. Gazzaneo, R. A. Orellana, H. V. Nguyen, and T. A. Davis*, USDA/ARS Children’s Nutrition Research Center, Critical Care Med. Div., Dept. Pediatrics, Baylor College of Medicine, Houston, TX.


10:15 AM 306 Effect diet composition on precocious puberty and concentrations of IGF–1 in beef heifers. M. Maquivar*1, L. A. Souto1, D. E. Grum2, D. M. Halford2, S. C. Loerch3, A. V. Pires3, and M. L. Day4, 1The Ohio State University, Columbus, 2New Mexico State University, Las Cruces, NM, 3University of Sao Paulo, Piracicaba, Sao Paulo, Brazil.


10:45 AM 308 Physiological drivers of variation in feed efficiency in Red Angus-sired calves. C. M. Welch1, J. K. Ahola1, J. B. Hall1, J. I. Szasz1, L. Keenan1, and R. A. Hill1, 1University of Idaho, 2Red Angus Association of America.

11:00 AM 309 Effect of the beta-agonist RU-42173 on growth and body composition of bulls. D. P. D. Lanna*1, P. R. Leme2, F. G. F. Castro1, A. C. Vieira1, V. M. Quecini1, L. O. Tedeschi1, and L. L. Coustinho1, 1ESALQ/USP, Piracicaba, SP, Brazil, 2FZEA/USP, Pirassununga, SP, Brazil, 3Texas A&M University, College Station.


11:45 AM 312  Abundance of growth hormone secretagogue receptor in adipose tissue from beef cattle undergoing compensatory growth. J. S. Jennings*, J. A. Clapper, A. D. Weaver, and A. E. Wertz-Lutz, South Dakota State University, Brookings.

12:00 PM 313  Effect of Sirt1 on lipolysis and gene expression of adipose triglyceride lipase (ATGL) in porcine adipocytes. Y. Wang*, T. Shan, J. Guo, T. Wu, and C. Liu, The Key Laboratory of Molecular Animal Nutrition, Ministry of Education. Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang, China.

12:15 PM 314  Breed difference and regulation of porcine adipose triglyceride lipase (pATGL) and hormone sensitive lipase (HSL) by TNFα and insulin. T. Shan*, Y. Wang, T. Wu, C. Liu, and J. Guo, The Key Laboratory of Molecular Animal Nutrition, Ministry of Education. College of Animal Science, Zhejiang University, Hangzhou, China.


12:45 PM 223  Effects of feeding solid feed on ruminal pH and expression of genes involved in ketogenesis in dairy calves during weaning transition. A. H. Laarman* and M. Oba, University of Alberta, Edmonton, Alberta, Canada.

Lactation Biology 1
Chair: Wendie Cohick, Rutgers University
512ae

9:30 AM 316  Gene expression profile research of dairy goat mammary gland by Long-SAGE. H. Yan, C. Li, Q. Li*, and X. Gao, Northeast Agricultural University, Harbin, China.

9:45 AM 317  Selection of key gene related to development of mammary gland in dairy goat. C. Li, H. Yan, Q. Li*, and X. Gao, Northeast Agricultural University, Harbin, China.

10:00 AM 318  Epigenetic changes during functional differentiation of the mammary gland. M. Rijnkels*, C. Freeman-Zadrowski, and J. Hernandez, USDA/ARS Children’s Nutrition Research Center, Baylor College of Medicine, Houston, TX.


10:30 AM 320  Microarray analysis of gene expression profiles in dry period bovine mammary gland. X. Hou and Q. Li*, Northeast Agricultural University, Harbin, Heilongjiang, China.

10:45 AM  Break

11:15 AM 321  Palmitate affects larger gene networks in MACT cells compared with trans-10,cis-12-CLA or PPAR-gamma activation via Rosiglitazone. G. Invernizzi*, A. K. G. Kadegowda, M. Bionaz, G. Savoini, R. E. Everts, H. A. Lewin, and J. J. Loor, University of Illinois, Urbana; 2University of Milan, Milan, Italy.

11:30 AM 322  Energy metabolism in the development of dairy goat mammary gland. N. A. Zhang, Q. Li*, and X. Gao, Northeast Agricultural University, Harbin, Heilongjiang, China.

11:45 AM 323  Lactose synthesis in dairy goat mammary gland. X. Nan, Q. Li*, X. Gao, and B. Qu, Northeast Agricultural University, Harbin, Heilongjiang, China.

12:00 PM 324  Mammary expression of activating transcription factor 4 (ATF4) and tribbles homolog 3 (TRB3) is up-regulated during CLA-induced inhibition of milk fat synthesis in the dairy cow. K. J. Harvatine*, Y. R. Boisclair, and D. E. Bauman, Pennsylvania State University, University Park; 2Cornell University, Ithaca, NY.

12:15 PM 325  Lipid transporters and their regulators in the bovine mammary gland in relation to blood serum metabolites during pregnancy, involution, and lactation. O. Mani, M. T. Sorensen, K. Sejrsen, R. M. Bruckmaier*, and C. Albrecht, Institute of Biochemistry and Molecular Medicine, University of Bern, Bern, Switzerland; 2Department of Animal Health, Welfare and Nutrition, Aarhus University, Tjele, Denmark; 3Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.


10:00 AM 328 Effects of distillers grains on beef carcass quality and palatability. C. R. Calkins*, A. S. de Mello Jr., and L. S. Senaratne, University of Nebraska, Lincoln.

10:40 AM 329 Effects of various coproducts on beef consumer sensory and tenderness traits. G. P. Lardy* and R. J. Maddock, North Dakota State University, Fargo.

11:10 AM 330 By-product feeding effects on pork quality and carcass traits. J. D. Wood*, F. M. Whittington, and K. G. Hallett, University of Bristol, Langford, Bristol, UK.

11:50 AM Questions and answers

Nonruminant Nutrition
Amino Acids and Energy
Chair: Allen Pettry, Cal Poly State University
Sponsor: Evonik Degussa Corp.

518

9:30 AM 331 Birth order, birth weight, sow colostrum IgG, and pig IgG concentration and their effects on neonatal piglet survival. R. Cabrera*, X. Lin1, K. Shim1, T. Inskeep1, J. Campbell2, A. Moeser1, and J. Odle1, 1North Carolina State University, Raleigh, 2American Protein Corporation, Ankeny, IA.

9:45 AM 332 Efficacy of dietary amino acids to replace fish meal and whey protein on physiological changes in weanling pigs. Y. Zhao*, C. M. Ballou1, A. C. Chaytor1, R. L. Payne2, and S. W. Kim1, 1North Carolina State University, Raleigh, 2Evonik-Degussa Corp., Kennesaw, GA.

10:00 AM 333 Maximizing the use of supplemental amino acids in diets for 14-kilogram pigs. V. D. Naranjo*, T. D. Bidner1, R. L. Payne2, and L. L. Southern1, 1Louisiana State University Agricultural Center, Baton Rouge, 2Evonik-Degussa Corporation, Kennesaw, GA.

10:15 AM 334 Optimum isoleucine to lysine ratio in a barley and wheat based diet fed to starter pigs. J. Htoo*, C. Zhu2, and C. de Lange2, 1Evonik Degussa Canada Inc., Gibbons, AB, Canada, 2University of Guelph, Guelph, ON, Canada.

10:30 AM 335 Ileal digestibility of amino acids in low-Kunitz soybeans fed to weanling pigs. K. P. Goebel* and H. H. Stein, University of Illinois, Urbana.

10:45 AM 336 Amino acid digestibility and energy concentration in soybean meal produced from high protein, high digestible, or conventional varieties of soybeans and fed to weanling pigs. K. M. Baker* and H. H. Stein, University of Illinois, Urbana.

11:00 AM 337 Amino acid digestibility in corn and corn co-products fed to growing pigs. G. I. Petersen* and H. H. Stein, University of Illinois, Urbana.

11:15 AM 224 The threonine requirement in sows increases in late gestation. C. L. Levesque*, S. Moehn1, P. B. Pencharz2, and R. O. Ball1, 1Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, 2Sick Children’s Hospital, University of Toronto, Toronto, Ontario, Canada.

11:30 AM 227 Protein turnover and heat production of sows varies at day 30, 45 and 105 of gestation. R. S. Samuel*, S. Moehn1, P. B. Pencharz2, and R. O. Ball1, 1Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, 2Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.

11:45 AM 225 Energy and amino acid utilization in expeller-extracted canola meal fed to growing pigs. T. A. Woyengo*, E. Kiarie, and C. M. Nyachoti, University of Manitoba, Winnipeg, Manitoba, Canada.
12:00 PM  338  Net energy of distillers dried grains with solubles and high protein distillers dried grains fed to growing and finishing pigs. N. A. Gutieres*, D. Y. Kil, and H. H. Stein, University of Illinois, Urbana.


Production, Management and the Environment  Dairy  Chair: Tim Klusmeyer, Monsanto  Sponsor: Monsanto  510bd

9:30 AM  340  Short dry period: A new reality? Results from a long term field study. D. E. Santschi*, D. Lefebvre, C. L. Girard, and D. Pellerin, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Université Laval, Quebec, QC, Canada, 3Valacta, Ste-Anne-de-Bellevue, QC, Canada.

9:45 AM  341  Short dry period management improves peripartum ruminal adaptation in dairy cows. M. S. Jolicoeur*, A. F. Brito, D. Pellerin, D. Lefebvre, R. Berthiaume, and C. L. Girard, Université Laval, Québec, QC, Canada, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, Valacta, Ste-Anne-de-Bellevue, QC, Canada.

10:00 AM  342  Effect of a shortened dry period on the mammary gland physiology. P. Bernier-Dodier*, B. G. Talbot, and P. Lacasse, Université de Sherbrooke, Sherbrooke, QC, Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.


10:30 AM  344  Effects of soaking dairy cows at the feed line on dry matter intake and milk production in a tunnel ventilated barn equipped with evaporative pads located in a tropical climate, Thailand. D. V. Armstrong*, V. Wuthiranarith, M. J. LeBlanc, and J. F. Smith, University of Arizona, Tucson, Charoen Pokphand Group Co., Ltd., Bangkok, Thailand, Kansas State University, Manhattan.


11:00 AM  346  Environmental characteristics in cross-ventilated and naturally ventilated dairy barns in the upper Midwest USA. K. M. Lobeck, M. I. Endres, E. M. Shane, and K. A. Janni, University of Minnesota, St. Paul.

11:15 AM  347  Changes in body condition scores during the transition period in Holstein cows. J. Moro-Méndez*, H. Monardes, and R. I. Cue, McGill University, Department of Animal Science, Ste-Anne-de-Bellevue, QC, Canada.

11:30 AM  348  The association of level of milk production with reproductive performance. M. S. Campbell, K. Hand, D. F. Kelton, F. Miglior, S. J. LeBlanc, University of Guelph, Guelph, ON, Canada, Canadian Dairy Network, Guelph, ON, Canada, Dairy and Swine Research & Development Centre, Agriculture and Agri-Food Canada.

11:45 AM  349  Management practices associated with conception rate and service rate of lactating Holstein cows in large, commercial dairy herds. J. M. Schefers*, K. A. Weigel, N. B. Cook, C. L. Rawson, and N. R. Zwald, University of Wisconsin, Madison, Alto Genetics USA Inc., Watertown, WI.

12:00 PM  350  Pregnancy rates and herd turnover proportions after using a hormonal synchronization protocol in primiparous dairy cows in a California dairy. K. G. Gohary, S. S. Aly, D. C. Wagner, B. R. Hoar, V. M. Lane, and J. D. Rowe, William R. Pritchard Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California, Davis, Department of Veterinary Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis, Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis.

12:15 PM  351  Effect of days open in the previous lactation on the risk of culling or death around calving. P. J. Pinedo* and A. De Vries, University of Florida, Gainesville.
### Ruminant Nutrition

**Fat Supplementation**

**Chair: Paul Kononoff, University of Nebraska**

**516c**

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<th>Time</th>
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<tr>
<td>9:30 AM</td>
<td>352</td>
<td>Effective use of safflower seeds in early lactation diets with alfalfa hay and corn silage. A. Alizadeh¹, G. R. Ghorbani¹, M. Alikhani¹, H. R. Rahmani¹, and A. Nikkhah*, ¹Isfahan University of Technology, Isfahan, Iran, ²Zanjan University, Zanjan, Iran.</td>
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<td>10:00 AM</td>
<td>354</td>
<td>Effect of prepartum feed restriction and oilseed supplementation on peripartum cow metabolism. A. Hayirli*² and L. Doepel², ¹Atatürk University, Erzurum, Turkey, ²University of Alberta, Edmonton, AB, Canada.</td>
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<td>10:15 AM</td>
<td>355</td>
<td>Effects of duodenal infusion of linolenic acid on milk fatty acid composition in dairy cows. D. P. Bu¹, Khas-Erdene¹, J. Q. Wang*, H. Y. Wei¹, L. Y. Zhou¹, and J. K. Drackley¹, ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, ²Department of Animal Sciences, University of Illinois, Urbana.</td>
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<td>11:00 AM</td>
<td>358</td>
<td>Tracer studies in cultures of ruminal microorganisms reveal the formation of conjugated double bonds originating from biohydrogenation of ¹³C–labeled linolenic acid. Y. J. Lee, C. M. Klein, and T. C. Jenkins*, Clemson University, Clemson, SC.</td>
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<td>11:30 AM</td>
<td>360</td>
<td>Lactation performance of dairy cows supplemented with different oil sources. J. A. Ye¹, C. Wang**, H. W. Ye¹, B. K. Wang¹, H. Y. Liu¹, Y. M. Wang¹, Z. Q. Yang¹, and J. X. Liu¹, ¹Institute of Dairy Science, Zhejiang University, Hangzhou, P. R. China, ²School of Forestry and Biotechnology, Zhejiang Forestry University, Hangzhou, P. R. China, ³Hangzhou Zhengxing Animal Industries, Hangzhou, P. R. China.</td>
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<td>11:45 AM</td>
<td>361</td>
<td>Milk production and composition from cows with different levels of cashew nut in the diet. P. G. Pimentel¹, L. A. Leite¹, I. R. F. M. Veiga¹, and R. B. Reis*, ¹Animal Science Department, Federal University of Ceará, Brazil, ²Veterinary School, Federal University of Minas Gerais, Brazil.</td>
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<td>12:00 PM</td>
<td>362</td>
<td>Effect of dietary n-3 polyunsaturated fatty acids (PUFA) on gene expression of the insulin-like growth factor (IGF) system in the bovine uterus. G. S. Coyne*¹, D. A. Kenny², and S. M. Waters², ¹Animal Bioscience Centre, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, ²School of Agriculture, Food Science &amp; Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.</td>
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### Ruminant Nutrition 1

**Chair: John Wagner, Colorado State University**

**516ab**

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<td>9:30 AM</td>
<td>363</td>
<td>Oats grain as an alternative to corn in beef cattle diets. J. A. Marcenac¹, H. M. Arelowich*¹, M. F. Martinez¹, M. I. Amelia¹, and R. D. Bravo¹, ¹Dto. Agronomía-Universidad Nacional del Sur, ²Comisión de Investigaciones Científicas de la Provincia de Buenos Aires (CIC); CER20S, Bahía Blanca, Argentina.</td>
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<tr>
<td>10:15 AM</td>
<td>58</td>
<td>Effect of butyrate absorption on the severity of subacute ruminal acidosis. G. B. Penner¹, J. R. Aschenbach², G. Gäbel², and M. Oba¹, ¹University of Alberta, Edmonton, AB, Canada, ²Universität Leipzig, Leipzig, Germany.</td>
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Symposium: Small Ruminant Organic and Grass-Fed Small Ruminant Challenges and Opportunities
Chair: Joan Burke, USDA, ARS, Booneville, AR
Sponsor: AMPA
513cd

9:30 AM 374 Obstacles to organic and grass fed small ruminant production in the U.S. J. M. Burke*, USDA, Agricultural Research Service, Booneville, AR.

10:00 AM 375 Ecology as a model for organic dairy production. F. Thicke*, Radiance Dairy, Fairfield, IA.

10:30 AM 376 Successful organic dairy systems. K. J. Soder*, USDA-ARS, Pasture Systems & Watershed Mgmt. Research Unit, University Park, PA.

11:00 AM 377 Grass-fed management systems for profitable livestock production. S. K. Duckett* and J. G. Andrae, Clemson University, Clemson, SC.

11:30 AM Discussion

Dairy Foods
Danisco International Dairy Science Award Lecture
Chair: John Lucey, University of Wisconsin
Sponsor: Danisco
513ef

10:30 AM From udder to fridge: The impact of milk proteins and enzymes through the dairy chain. A. L. Kelly, University College Cork, Cork, Ireland.
Animal Behavior and Well-Being 1
Chair: Trevor DeVries, University of Guelph
511be

2:00 PM 378 Enriched colony cage for laying hens and the effects on behavioural and physiological parameters. N. J. Cook*, J. Feddes2, D. Korver1, D. B. Haley2, and J. S. Church3; 1Alberta Agriculture and Rural Development, Lacombe Research Centre, Lacombe, Alberta, Canada, 2University of Alberta, Edmonton, Alberta, Canada, 3Thompson Rivers University, Kelowna, British Columbia, Canada.

2:15 PM 379 Animal welfare indicators of Holstein bulls ring-castrated at three months of age. S. Marti1, A. Velarde2, J. L. de la Torre3, X. M. Manteca1, A. Aris3, A. Serrano3, and M. Devant1, 1Animal Nutrition, Management, and Welfare Group, Barcelona, Spain, 2IERTA, Barcelona, Spain, 3UBAB, Barcelona, Spain, 4CREA, Barcelona, Spain.

2:30 PM 380 Pain mitigation at time of castration improves performance and intake in feedlot bull calves. L. A. González1, K. S. Schwartzkopf-Genswein1, E. Fierth2, E. Janzen2, N. A. Caulkett2, T. A. McAllister2, D. B. Haley2, J. M. Stookey3, and S. Hendrick4, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2University of Calgary, Calgary, AB, Canada, 3University of Alberta, Edmonton, AB, Canada.

2:45 PM 381 Feeding behavior and weight gain of dairy calves in the post-weaning period. A. L. Stanton*, D. Kelton1, K. E. Leslie1, S. J. LeBlanc1, K. Hester1, and S. T. Millman2; 1University of Guelph, Guelph, Ontario, Canada, 2Iowa State University, Ames.

3:00 PM 382 Evaluation of the Pedometry Plus system for the detection of pedometric activity and lying behaviour in dairy cattle. J. H. Higgins2, A. E. Leslie1, S. T. Millman1, and D. F. Kelton1; 1University of Guelph, Guelph, Ontario, Canada, 2Iowa State University, Ames.


3:30 PM Break

3:45 PM 384 A comparison of the effects of two different Korral Kool1 systems on dairy cows in a desert environment. X. Ortiz*, J. Smith1, B. Bradford1, J. Harner1, and A. Oddy1; 1Kansas State University, Manhattan, 2NADA Al-Othman, Saudi Arabia.

4:00 PM 385 Effect of feedline soakers complementing Korral Kool systems on lactating dairy cows in a desert environment. X. Ortiz*, J. Smith1, B. Bradford1, J. Harner1, and A. Oddy1; 1Kansas State University, Manhattan, 2NADA Al-Othman, Al Ahsa, Saudi Arabia.


4:45 PM 388 Use of an automated sampler to assess bovine adrenal hormone response to transportation. N. C. Burdick1, 2, J. A. Carroll2, R. D. Randel3, S. T. Willard4, R. C. Vann2, C. C. Chase, Jr.5, D. A. Neuendorff6, A. W. Lewis7, J. W. Dailey1, L. E. Hulbert3, L. C. Caldwell1, 3, J. G. Lyons3, and T. H. Welsh, Jr.1; 1Texas AgriLife Research, Texas A&M System, College Station, 2USDA ARS Livestock Issues Research Unit, Lubbock, TX, 3Texas AgriLife Research, Texas A&M System, Overton, 4Mississippi State University, Mississippi State, 5MAFES, Mississippi State University, Raymond, 6USDA ARS Subtropical Agricultural Research Station, Brooksville, FL.

SYMPOSIUM
Animal Health
Animal Well Being: Tackling the Issue of Cow Longevity
Chair: Isis Mullarky, Virginia Polytechnic Institute and State University
Sponsors: Elanco Animal Health and Pfizer Animal Health
518

2:00 PM 389 New frontiers in mastitis research. S. C. Nickerson*, University of Georgia, Athens.

2:45 PM 390 Tackling the issue of cow longevity: Battling lameness. J. K. Shearer*, University of Florida, Gainesville.

3:30 PM 391 Increasing longevity by increasing reproductive efficiency in dairy cattle. M. C. Wiltbank*, University of Wisconsin, Madison.

4:15 PM 392 Improving longevity with new genetic models and marker assisted selection. K. A. Weigel*, University of Wisconsin, Madison.
SYMPOSIUM
ARPAS Symposium
Feed Management: ARPAS, NRCS, and the National Project
Chair: Randy Shaver, University of Wisconsin–Madison

511ad
2:00 PM Introductions. R. Shaver, University of Wisconsin, Madison.
2:15 PM 393 Feed management from perspective of national feed management project. J. H. Harrison*, R. A. White†, G. Erickson†, R. Koelsch, A. Sutton†, T. Applegate†, R. Burns†, and G. Carpenter†, 1Washington State University, Puyallup, 2University of Nebraska, Lincoln, 3Purdue University, Lafayette, IN, 4Iowa State University, Ames, 5USDA-NRCS, Washington, DC.
2:45 PM 394 Update on feed management from the perspective of USDA NRCS at the national and state levels. G. Carpenter*, USDA NRCS, Beltsville, MD.
3:15 PM 395 The Virginia feed phosphorus monitoring project. C. C. Stallings*, K. F. Knowlton, R. E. James, and M. D. Hanigan, Virginia Polytechnic Institute and State University, Blacksburg.
3:45 PM 396 Feed management: Northeast perspective on workshops, ARPAS certification and relationship with national feed management project and NRCS. V. Ishler*, C. Stallings, and R. Kohn, 1The Pennsylvania State University, University Park, 2Virginia Polytechnic and State University, Blacksburg, 3University of Maryland, College Park.
4:15 PM Wrap-up

SYMPOSIUM
Beef Species
Population Data Analyses to Evaluate Trends in Animal Production Systems
Chair: Alfredo DiCostanzo, University of Minnesota

516ab
2:00 PM Introduction. A. DiCostanzo.
2:05 PM 397 Enhancing management decisions in modern animal agriculture using population data and appropriate analytical methodology. P. D. Matzat*, J. Bargen, and W. J. Platter, 1Elanco Animal Health, Greenfield, IN, 2AgSpan, Overland Park, KS.
2:50 PM 398 An animal breeding approach to the estimation of genetic and environmental trends from field populations. D. Garrick*, Iowa State University, Ames.
3:20 PM Break
3:30 PM 399 Data collection and determination of factors affecting efficiency and profitability of beef cattle production systems. R. Jones and M. Langemeier*, 1Oklahoma State University, Enid, 2Kansas State University, Manhattan.
4:00 PM 400 Applications of population data analysis in on-farm dairy trials. M. Engstrom*, W. Sanchez, W. Stone, and N. R. St-Pierre, 1DSM Nutritional Products, Inc., Parsippany, NJ, 2Diamond V Mills, Cedar Rapids, IA, 3The Ohio State University, Columbus.
4:30 PM 401 Application of statistical process control techniques to monitor changes in animal production systems. A. De Vries*, University of Florida, Gainesville.

Breeding and Genetics
Dairy Breeding III - Parameter Estimation
Chair: Kent Weigel, University of Wisconsin

510ac
2:00 PM 402 Estimates of heritability of feed intake in Canadian Holsteins. J. Song*, J. F. Hayes, and R. I. Cue, McGill University, Macdonald Campus, Ste-Anne de Bellevue, Quebec, Canada.
2:15 PM 403 Heritability of body condition score and relationships with milk production traits in Canadian Ayrshires. S. Loker*, C. Bastin, F. Miglior, A. Sewalem, J. Fatehi, L. R. Schaeffer, and J. Jamrozik, 1CGIL, University of Guelph, Canada, 2Gembloux Agricultural University, Belgium, 3Agriculture and Agri-Food Canada, Canadian Dairy Network, Guelph, Canada.
2:30 PM 404  Effect of test-day records beyond 305 days in milk on variance components and 305-d estimated breeding values for production traits and somatic cell score of Canadian Holsteins. J. Bohmanova*1, F. Miglior2,3, and J. Jamrozik1, 1Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, Ontario, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Canadian Dairy Network, Guelph, ON, Canada.

2:45 PM 405  Genetic variability of test-day stearoyl coenzyme-A desaturase 9 activity. V. M.-R. Arnould*1, N. Gengler2,3, and H. Soyeurt1, 1Gembloux Agricultural University, Animal Science Unit, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

3:00 PM 407  Break


3:30 PM 407  Estimates of genetic parameters among body condition score and fertility traits in first-parity Canadian cows. C. Bastin*, S. Loker2, N. Gengler1,2, and F. Miglior1,2, 1Animal Science Unit, Gembloux Agricultural University, Gembloux, Belgium, 2CGIL, Dept. of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 3National Fund for Scientific Research, Brussels, Belgium, 4Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 5Canadian Dairy Network, Guelph, ON, Canada.

3:45 PM 408  The influence of genetic selection and feed system on milk production and fertility performance of spring-calving dairy cows. J. Coleman*1,2, K. M. Pierce1, D. P. Berry1, A. Brennan1, and B. Horan1, 1Teagasc, Moorepark Dairy Production Research Centre, Fermoy, Co. Cork, Ireland, 2UCD, School of Agriculture Food Science and Veterinary Medicine, Belfield, Dublin 4, Co. Dublin, Ireland.

4:00 PM 409  Consequence on reproduction of two feeding levels with opposite effects on milk yield and body condition loss in Holstein and Normande cows. E. Cutulic*1, L. Delaby1, G. Michel1, and C. Disenhaus1, 1INRA UMR1080 Dairy Production, Rennes, France, 2INRA UE326 Le Pin-au-Haras, Exmes, France.

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**Breeding and Genetics**

**Swine Breeding**

*Chair: Cathy Ernst, Michigan State University*

510bd

2:00 PM 410  Performance and carcass composition of pigs selected for residual feed intake on restricted and ad libitum diets. N. Boddicker*, D. Nettleton, N. Gabler, M. Spurlock, and J. C. M. Dekkers, Iowa State University, Ames.


2:30 PM 412  Longitudinal random regression analysis of growth and feed intake in selection lines for residual feed intake in Yorkshire swine. W. Cai*, H. Wu, and J. C. M. Dekkers, Iowa State University, Ames.

2:45 PM 413  Impact of genetic social interactions on relationships between average daily gain and feeding pattern in pigs. C. Y. Chen*, I. Misztal1, W. S. Tsutsui1, W. O. Herring1, J. Holl2, and M. Culbertson2, 1University of Georgia, Athens, 2Smithfield Premium Genetics Group, Rose Hill, NC.

3:00 PM 414  Genetic relationships of individual pig birth weight with weaning weight, off-test weight, feed intake, backfat and loin depth. J. S. Fix*, J. W. Holl, W. O. Herring2, J. P. Cassidy1, C. Maltecca1, and M. T. See1, 1North Carolina State University, Raleigh, 2Smithfield Premium Genetics Group, Rose Hill, NC.


3:30 PM 415  Breed differences in swine temperament and its phenotypic relationship with performance. C. L. Yoder*1, C. Maltecca1, J. P. Cassidy1, S. Price2, and M. T. See1, 1North Carolina State University, Raleigh, 2Ivey Spring Creek Farms, Goldsboro, NC.

3:45 PM 416  Genetic parameters for litter traits and piglet survival in Norsvin Landrace. B. Zumbach*, P. Madsen2, and B. Holm3, 1Norsvin, Hamar, Norway, 2Aarhus University, Tjele, Denmark, 3Norsvin USA, Rochester, MN.

4:00 PM 417  Marker assisted selection using simulated IGF2 gene in Canadian Landrace. M. Jafarikia*, B. Sullivan, and L. Maignel, Canadian Centre for Swine Improvement, Ottawa, ON, Canada.

4:15 PM 418  A DNA based test for evaluating and improving pork colour in Canadian pigs. B. Uttaro*, M. Jafarikia2, W. Van Berkel1, S. Wyss1, B. Sullivan2, and S. Chen3, 1Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada, 2Canadian Centre for Swine Improvement, Ottawa, Ontario, Canada, 3Western Swine Testing Association, Lacombe, Alberta, Canada, 4University of Guelph, Laboratory Services Division, Guelph, Ontario, Canada.
4:30 PM 419 Estimation of the IGF2 effect on backfat and lean muscle depth in Canadian Landrace. M. Jafarikia*, B. Sullivan, L. Maingel, and S. Wyss, Canadian Centre for Swine Improvement, Ottawa, ON, Canada.

4:45 PM 420 Proximal promoter of the pig HMGCR gene: Structural and functional study. A. Cánovas*, 1, R. Quintanilla*, 1, J. M. Reecy*, M. Marqués*, and R. N. Pena*, 1IRTA. Genetica i Millora Animal., Lleida, Spain, 2Iowa State University, Ames, 3INDEGA. Universidad de León, León, Spain.

Dairy Foods 1
Chair: Dave McCoy, DMI Inc.
513cd

2:00 PM 421 ADSA Pioneer: Value-added components derived from whey. W. Modler*, Agriculture Canada (formerly Centre for Food & Animal Research, Ottawa, Ontario, Canada), Kemptville, Ontario, Canada.

2:30 PM 422 Optimizing the recovery of protein during microfiltration of preconcentrated whey. C. Marella*, L. E. Metzger, and K. Muthukumarappan, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

2:45 PM 423 Nanoparticulation of denatured whey protein by pH–cycling. M. Britten*, J. Houde, and H. J. Giroux, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

3:00 PM 425 Use of whey protein fractions as a fat substitute for sausage. A. C. B. Ferreira1, W. L. M. Santos1, L. M. Fonseca*, 1, 2, and R. L. Bradley Jr.1, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 3University of Wisconsin, Department of Food Science, Madison.

3:15 PM 426 Influence of casein on flux and passage of serum proteins (SP) during microfiltration (MF) using polymeric spiral wound (SW) membranes at 50°C. J. Zulewska*, 1, M. Newbold2, and D. M. Barbano2, 1University of Warmia and Mazury, Olsztyn, Poland, 2Cornell University, Ithaca, NY.

3:30 PM 427 A non-pasta filata Mozzarella cheese making method using CO2: Cheese composition and yield. L. Li1, M. Newbold2, and D. M. Barbano*, 1South China University of Technology, Guangzhou, China, 2Cornell University, Ithaca, NY.

3:45 PM 428 A non-pasta filata Mozzarella cheese making method using CO2: Cheese functionality. L. Li1, M. Newbold2, and D. M. Barbano*, 1South China University of Technology, Guangzhou, China, 2Cornell University, Ithaca, NY.

4:00 PM 429 Caseins as molecular chaperones: Functional analysis and structural considerations. Y. H. Yong* and E. A. Foegeding, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh.

4:15 PM 430 Development and functionalities of milk protein-based paper glue. X. Chen1, 2, Y. L. Gao1, 2, L. H. Zhou1, and M. R. Guo*, 1University of Vermont, Burlington, 2Inner Mongolia Agriculture University, Huhhot, Inner Mongolia, China.

Dairy Foods
Dairy Foods/Cheese
Chair: Donald McMahon, Utah State University
Sponsor: European Association of Animal Production
513ef

2:00 PM 431 ADSA Pioneer: A century of predictive cheese yield formulas. D. B. Emmons*, Food Research Laboratory, Research Branch, Agriculture and Agri-Food Canada, Guelph, ON, Canada.

2:30 PM 432 Cheesemaking properties of camel chymosin. K. B. Quist*, M. Harboe, H. van den Brink, M. L. Broe, and M. W. Børsting, Chr. Hansen, Hørsholm, Denmark.

2:45 PM 433 Aggregation of casein micelles by combined rennet and acidification studied by rheology and diffusing wave spectroscopy: Effect of heat treatment. C. Cooper*, M. Alexander, and M. Corredig, University of Guelph, Guelph, ON, Canada.

3:00 PM 434 Improvement in the texture of low-fat Cheddar cheese by altering the manufacturing protocol. N. Bansal*, 1, N. Y. Farkye*, and M. A. Drake*, 1California Polytechnic State University, San Luis Obispo, 2North Carolina State University, Raleigh.

3:15 PM 435 Impact of grating and reforming on the texture of low fat/nonfat cheese. C. Akbulut*, 1, S. Govindasamy-Lucey*, 1, J. A. Lucey*, J. J. Jaeggi1, and M. E. Johnson1, 1Department of Food Science, University of Wisconsin, Madison, 2Wisconsin Center of Dairy Research, University of Wisconsin, Madison.
3:30 PM 436 Influence of brine concentration and temperature on composition, microstructure and yield of feta cheese, D. J. McMahon*1, M. M. Motawee2, and W. R. McManus1, 1Western Dairy Center, Utah State University, Logan, 2National Organization for Drug Control and Research, Cairo, Egypt.

3:45 PM 437 Impact of the addition of salts on the textural and rheological properties of nonfat cheese. J. A. Stankey*1, M. E. Johnson2, and J. A. Lucey3, 1University of Wisconsin, Department of Food Science, Madison, 2Wisconsin Center for Dairy Research, Madison.

4:00 PM 438 Comparison of mono- and poly-unsaturated fatty acid compositions between reduced-fat and full-fat goat milk cheeses during three months aging. W. Nouira1, Z. Guler2, J. H. Lee1, T. H. Terrill1, G. Kannan1, and Y. W. Park*, 1Fort Valley State University, Fort Valley, GA, 2Mustafa Kemal University, Hatay, Turkey.

4:15 PM 439 Development of various paneer based spreads. H. G. Ramachandra Rao* and H. Arun Kumar, Dairy Science College, Hebbal, Bangalore, Karnataka, India.

SYMPOSIUM

Growth and Development

Fetal Programming in Animal Agriculture

Chair: Rodney A. Hill, University of Idaho 517c

SYMPOSIUM

Growth and Development

Fetal Programming in Animal Agriculture

Chair: Rodney A. Hill, University of Idaho 517c

2:00 PM 441 Dam/grand-dam nutrition during pregnancy affects milk supply in offspring and reproductive performance in grand-offspring. H. T. Blair*, D. S. van der Linden, L. C. Davenport, P. R. Kenyon, C. M. C. Jenkinson, S. W. Peterson, D. D. S. Mackenzie, S. T. Morris, and E. C. Firth, National Research Centre for Growth & Development, Massey University, Palmerston North, New Zealand.

2:35 PM 442 Fetal programming of skeletal muscle development in ruminant animals. M. Du* and M. J. Zhu, University of Wyoming, Laramie.

3:10 PM 443 Programming of fetal fat and muscle: Natural and genetic fetal restriction and exogenous nutritional influences. G. J. Hausman*, USDA-ARS, Athens, GA.

3:45 PM 444 Epigenetic programming of behavior and physiology. M. Meaney*, McGill University, Montreal, Quebec, Canada.


Meat Science and Muscle Biology

Pork and Beef Quality

Chair: Kasey Maddock Carlin, North Dakota State University 514


2:15 PM 447 Effects of oxidized corn oil and synthetic antioxidant blend on pork quality and shelf-life. D. M. Fernández-Dueñas*1, L. W. Kutzler1, D. D. Boler1, S. F. Holmer1, J. Zhao1, R. J. Harrell2, J. Andrews2, M. Vazquez-Añon2, M. Ellis1, F. K. McKeith1, and J. Killefer1, 1University of Illinois, Urbana, 2Novus International Inc., St. Charles, MO.

2:30 PM 448 Impact of varying CO2 and O2 concentrations during stunning and carcass chilling conditions on pork quality traits. G. Bee*, M. Gerritzten2, M. Mull2, C. Biolley1, G. Guex1, B. Dougoud1, and C. Vonnez1, 1Agroscope Liebefeld Posieux, Research Station ALP, Posieux, Switzerland, 2Animal Sciences Group of Wageningen, Lelystad, the Netherlands.

2:45 PM 449 Using ultrasound technology to predict intramuscular fat of loin in live pigs and potential use in swine genetic improvement. L. Maignel*1, J.-P. Daigle1, and B. Sullivan1, 1Canadian Centre for Swine Improvement, Ottawa, ON, Canada, 2Centre de Développement du Porc du Québec, Québec, QC, Canada.

3:00 PM 450 The effects of restricted feeding and subsequent realimentation on pig carcass composition. C. Chaosap*, T. Parr, and J. Wiseman, Nottingham University, Loughborough, UK.
3:15 PM  
Break

3:30 PM  451  
Carcass traits of tropically adapted cattle when evaluated at different endpoints. S. W. Coleman*,1, D. G. Riley†, C. C. Chase Jr., M. F. Miller‡, J. C. Brooks*, D. D. Johnson*, W. A. Phillips†, and T. A. Olson, 1USDA ARS STAR, Brooksville, FL, 2Texas Tech Univ., Lubbock, 3Univ. Florida, Gainesville, 4USDA ARS GRL, El Reno, OK.

3:45 PM  452  
Sarcomere length influences postmortem proteolysis of Troponin-T in bovine muscle. S. J. Wells*, T. M. Nath, D. M. Wulf, and A. D. Weaver, South Dakota State University, Brookings.

4:00 PM  453  
Water access and the carcass characteristics of Holstein slaughter cows. K. D. Vogel*, J. R. Claus†, T. Grandin*, G. R. Oetzel†, and D. M. Schaefers, 1Colorado State University, Fort Collins, 2University of Wisconsin, Madison.

4:15 PM  454  
Growth and carcass characteristics of steers fed an omega-3-fatty acid-fortified supplement from flaxseed while on improved pastures and following feedlot finishing. R. C. Vann*, S. T. Willard‡, E. L. Schenck‡, J. M. Martin‡, K. Moulton‡, W. Holmes†, A. Brown†, B. Thomas†, T. E. Lawrence*, and M. S. Brown, 1MAFES-Brown Loam Exp. Stat., Mississippi State University, Raymond, 2Mississippi State University, Starkville, 3West Texas A&M University, Canyon.

4:30 PM  455  
Impact of feeding Fusarium graminearum-infested barley on meat quality and fatty acid profiles in beef steers. S. L. Scott*, D. L. McLaren†, H. C. Block†, M. E. R. Dugan†, Y. Wang†, and T. A. McAllister†, 1Agriculture and Agri-Food Canada, Brandon Research Centre, Brandon, MB, Canada, 2Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

4:45 PM  456  
Long-term supplementation with sunflower/fish oil-containing concentrates in a grass-based beef production system: Effects on colour and lipid stability during retail display. P. G. Dunne†, F. J. Monahan*, and A. P. Moloney*, 1Teagasc, Ashtown Food Research Centre, Ashtown, Dublin, Ireland, 2University College Dublin, Belfield, Dublin, Ireland, 3Teagasc, Grange Beef Research Centre, Dunsany, County Meath, Ireland.

SYMPOSIUM
Nonruminant Nutrition
Mineral-Mineral Interactions: Implications for Nutrition  
Chair: Scott Radcliffe, Purdue University  
Sponsor: Alltech  
524

2:00 PM  457  
Ionomics: Mineral nutrition, physiology, and interactions as a biological system. J. Fleet* and D. Salt, Purdue University, West Lafayette, IN.

2:40 PM  458  
Trace mineral interactions, known, unknown and not used. G. M. Hill* and J. E. Link, Michigan State University, East Lansing.

3:20 PM  459  
Macromineral interactions. J. S. Radcliffe*, Purdue University, West Lafayette, IN.

4:00 PM  460  

4:40 PM  461  
Summary. Scott Radcliffe.

Physiology and Endocrinology
Estrous Synchronization of Beef Cattle  
Chair: Ricardo C. Chebel, VMTRC-University of California Davis  
519

2:00 PM  460  
ASAS Early Career Achievement Award: Control of the estrous cycle for fixed-time artificial insemination (TAI) in beef cattle. G. C. Lamb*, North Florida Research and Education Center, University of Florida, Marianna. Sponsor: ASAS Foundation

2:35 PM  461  
Comparison of progestin-based protocols to synchronize estrus in prepubertal and estrous cycling beef heifers. N. R. Leitman, D. C. Busch, D. J. Wilson, D. A. Mallory, M. R. Ellersieck, M. F. Smith, and D. J. Patterson*, University of Missouri, Columbia.

2:50 PM  462  

3:20 PM 464 Comparison of follicular dynamics and hormone concentrations between the 7 d and 5 d CO-Synch + CIDR program in two-year old beef cows. G. A. Bridges*, M. L. Mussard2, L. A. Helser3, and M. L. Day2. 1Purdue University, West Lafayette, IN, 2The Ohio State University, Columbus, 3Select Sires Inc., Plain City, OH.


4:00 PM 466 Efficacy of the 5 day CO-Synch estrous synchronization protocol with or without the inclusion of a CIDR in beef cows. K. C. Culp*, R. P. Lenemanger2, M.C. Claeys1, P. J. Gunn1, M. Van Emon1, R. P. Arias1, S. L. Lake2, and G. A. Bridges1. 1Purdue University, West Lafayette, IN, 2University of Wyoming, Laramie.

4:15 PM 467 Efficacy of the 5 day CO-Synch estrous synchronization protocol with or without the inclusion of a CIDR in beef cows. K. C. Culp*, R. P. Lenemanger2, M.C. Claeys1, P. J. Gunn1, M. Van Emon1, R. P. Arias1, S. L. Lake2, and G. A. Bridges1. 1Purdue University, West Lafayette, IN, 2University of Wyoming, Laramie.

4:30 PM 468 Administration of human chorionic gonadotropin (hCG) 7 days after insemination of suckled beef cows. C. R. Dahlen*, S. L. Bird2, C. A. Martel1, K. C. Olson1, J. S. Stevenson1, and G. C. Lamb1. 1North Florida Research and Education Center, University of Florida, Marianna, 2Northwest Research and Outreach Center, University of Minnesota, Crookston, 3North Central Research and Outreach Center, University of Minnesota, Grand Rapids.

4:45 PM 469 Effect of used CIDR and FSH on estrus expression and pregnancy rate during low breeding season in Nili-Ravi buffaloes. N. Ahmad*, Z. Naseer1, E. Ahmad2, M. Mushtaq1, and J. Singh1. 1Department of Theriogenology, University of Veterinary & Animal Sciences, Lahore, Pakistan, 2Buffalo Research Institute, Pattoki, Pakistan. 1Department of Veterinary Biomedical Sciences, WCVM, Saskatoon, Canada.

Ruminant Nutrition
Feed Additives
Chair: Cathy Bandyk, Quality Liquid Feeds
Sponsors: Atlantic Dairy and Forage Institute and Diamond V Mills

516c

2:00 PM 470 Distillers grains-based diets with monensin supplemented with plant extracts: Effects on steer performance, carcass characteristics, and ruminal VFA concentrations. A. L. Shreck1, N. A. Pyatt2, L. L. Berger2, J. M. Dahlquist3, T. G. Nash1, and D. Bravo4. 1University of Illinois, Urbana, 2ADM Research, Decatur, IL, 3Pancosma, Geneva, Switzerland.

2:15 PM 471 Meta analysis of growing ruminants fed a mixture of eugenol, cinnamaldehyde and capsicum oleoresin. D. Bravo1, N. A. Pyatt2, H. P. Doane2, and M. J. Cecava3. 1Pancosma, Geneva, Switzerland, 2ADM Research, Decatur, IL.

2:30 PM 472 Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini1, D. Bravo1, S. Calsamiglia1, M. Rodriguez1, A. Ferret1, and G. Schroeder1. 1Universitat Autonoma de Barcelona, Barcelona, Spain, 2Pancosma, Geneva, Switzerland, 3Cargill, Elk River, MN.

2:45 PM 473 Essential oils may reduce the risk of ketosis in dairy goats carrying twins. S. Calsamiglia1, S. Cavini1, A. Bouattour1, A. Ferret1, and D. Bravo1. 1Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma, Switzerland.

3:00 PM 474 Effects of feeding an essential oil complex on whole tract nutrient digestion and productive performance of lactating dairy cows. M. B. Santos1,2, P. H. Robinson1, and P. W. Williams, 1University of California, Davis, 2CECAV-UTAD, Vila Real, Portugal, 3Advantec Associates, Davis, CA.

3:15 PM 475 Effects of an encapsulated combination of cinnamaldehyde and garlic oil on early and late lactating Red Simmental dairy cows. C. Kamel1, H. M. R. Greathead1, and P. W. Cardozo1. 1University of Leeds, Leeds, United Kingdom, 2Carotenoid Technologies, IQF Group, Tarragona, Spain.

3:30 PM 476 Yeast culture supplementation interacts with voluntary feed intake to affect ruminal starch digestion. Y. Ying* and M. S. Allen, Michigan State University, East Lansing.
3:45 PM 477 Effect of yeast culture on ruminal fermentation and nutrient utilization in dairy cows. A. N. Hristov*,1, G. Varga1, T. Cassidy2, M. Long1, K. Heyler1, C. J. Hovde2, and I. Yoon3, 1Pennsylvania State University, University Park, 1University of Idaho, Moscow, 2Diamond V Mills, Cedar Rapids, IA.

4:00 PM 478 Production response to soybean meal and methionine supplementation of corn silage-based diets in dairy cows. M. Gonzalez Ronquillo*,1, H. Nursy2, G. A. Broderick3, and A. P. Faciola4, 1Universidad Autonoma del Estado de Mexico, Toluca, Mexico, 2Yuzuncu Yil University, Van, Turkey, 3U.S. Dairy Forage Research Center, Madison, WI, 4University of Wisconsin, Madison.


4:30 PM 480 High-fat or low-fat distillers grains with dry or high-moisture corn in diets containing monensin for dairy cows. T. M. Owens*,1, A. R. Hippen1, K. F. Kalscheur1, D. J. Schingoethe2, D. L. Prentice3, and H. B. Green4, 1South Dakota State University, Brookings, 2Elanco Animal Health, Greenfield, IN.

4:45 PM 481 Effect of marine algae (ALG) on milk production characteristics and fatty acid (FA) composition in early lactating dairy cows. B. Vlaemincx*,1, M. Hostens2, G. Opsomer2, 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.

SYMPOSIUM
Ruminant Nutrition
Using Molecular Techniques to Advance Research in Ruminant Nutrition
Chair: Masahito Oba, University of Alberta
Sponsor: Atlantic Dairy and Forage Institute

2:00 PM 482 Introduction. Masahito Oba.

2:05 PM 483 Introduction to molecular techniques currently used in ruminant nutrition research. J. R. Knapp*, Fox Hollow Consulting, LLC, Columbus, OH.

2:30 PM 484 Integration of microbial profiling techniques to improve the efficiency of nutrient usage in ruminant production. J. L. Firkins* and Z. Yu, The Ohio State University, Columbus.

3:00 PM 485 Metagenomics of the rumen microbial ecosystem. D. Krause*, University of Manitoba, Winnipeg, Canada.

3:50 PM 486 Basal expression of 27 nucleoside and amino acid transporter mRNA by small intestinal epithelia of forage-fed growing beef steers is differentially affected by increased luminal substrate or energy supply. J. C. Matthews*, S. F. Liao, and J. A. Boling, Department of Animal and Food Sciences, University of Kentucky, Lexington.

4:25 PM 487 Molecular adaptations in transition dairy cows. J. J. Loor*, University of Illinois, Urbana.

Small Ruminant
Production, Management, Lactation
Chair: Bret Taylor, USDA-ARS, US Sheep Experiment Station

2:00 PM 487 Effects of kid genotype on carcass traits of meat goats from a three-breed diallel. R. Browning, Jr.*, W. Getz2, O. Phelps3, and C. Chisley4, 1Tennessee State University, Nashville, 2Fort Valley State University, Fort Valley, GA, 3USDA-AMS, Lakewood, CO, 4Southern Institute for Animal Breeding, Baton Rouge, LA.


2:45 PM 490 Comparison of body composition measurements in sheep using dual energy X-ray absorptiometry (DXA) in vivo and post mortem. A. M. Scholz*,1, C. Mendel2, P. V. Kremer1, E. Gruber1, A. Steiner2, K.-U. Goetz3, and M. Foerster4, 1Ludwig Maximilians University Munich, Livestock Center, Oberschleissheim, Bavaria, Germany, 2Bavarian State Research Center for Agriculture, Institute for Animal Breeding, Poing, Bavaria, Germany.

3:15 PM 492  Use of sodium dodecyl sulfate (SDS) as a microbicide in goat colostrum. A. Morales-delaNuez1, J. Capote2, M. C. Juste1, D. Sanchez-Macias1, N. Castro1, and A. Argüello**, 1Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, 2Instituto Canario de Investigaciones Agrarias, La Laguna, Tenerife, Spain.

3:30 PM 63  Fertility of Alpine goats following oestrus synchronisation with CIDR and artificial insemination with cryopreserved semen. M.-E. Marier*, F. Castonguay*, M. Theriault3, D. Cinq-Mars2, C. Lessard1,2, and J. L. Bailey1,2, 1Centre de recherche en biologie de la reproduction, 2Département des sciences animales, Université Laval, Québec City, 3Dairy & Swine Research and Development Center, AAFC, Lennoxville.


4:00 PM 494  Effect of lamb age on response to immunization. M. E. Gailor, J. Gavalchin, and M. L. Thonney*, Cornell University, Ithaca, NY.

4:15 PM 495  Control of Haemonchus contortus using three chemical classes of anthelmints and copper oxide wire particles in meat goat kids. M. Rothaug2, K. Andries*1, E. Sherrow1, and J. Burke3, 1Kentucky State University, Frankfort, 2Midway College, Midway, KY, 3USDA, ARS, Booneville, AR.

Teaching/Undergraduate and Graduate Education
Teaching Issues
Chair: Jodi Sterle, Texas A&M University
512ae

2:00 PM 500  Teaching a ‘dog lab’ in a traditional animal science department. G. M. Hill*, B. B. Snedegar, J. A. Snedegar, and J. E. Link, Michigan State University, East Lansing.

2:15 PM 496  Comparative development of critical thinking skills in animal science undergraduates who enroll in evaluation courses. L. M. White* and K. D. Layfield, Clemson University, Clemson, SC.

2:30 PM 497  Enhancing underrepresented, minority student learning through agricultural and natural resources based research. R. L. Stanko**, S. D. Nelson1, J. C. Laurenz2, and M. R. Garcia1, Texas A&M University, Kingsville, 1Texas AgriLife Research, Beeville, 2Eastern New Mexico State University, Portales.

2:45 PM 498  Teaching livestock production for niche markets. P. J. Lammers* and M. S. Honeyman, Iowa State University, Ames.


3:15 PM 501  Using companion animal classes to teach biology, nutrition, critical thinking and media literacy to animal sciences majors and across the University community. S. Rocco and J. P. McNamara*, Washington State University, Pullman.

3:30 PM 502  Innovative dairy teaching through a broad-based Dairy Consortium. G. R. Hagevoort**, M. A. Tomasewski2, and R. Collier1, 1New Mexico State University, Clovis, 2Texas A&M University, College Station, 3University of Arizona, Tucson.

3:45 PM 503  The Dairy Cattle Breeding Simulation Program (DCBSP 4.9), an interactive software to teach animal breeding principles and practices. J. Casellas1,2, A. Ahmadi3, R. A. Verdugo3, G. A. E. Gall3, and J. F. Medrano*, 1Genètica i Millora Animal, IRTA-Lleida, Lleida, Spain, 2Department of Animal Science, University of California, Davis.
Wednesday, July 15

POSTER PRESENTATIONS

Animal Health

W1  The economic impact of five dairy cattle clinical diseases as measured by the correlation between lactational incidence risk and the income over feed cost in Wisconsin dairy herds. M. C. Ruiz* and V. E. Cabrera, University of Wisconsin, Madison.

W2  Cows response to glucose tolerance test (GTT) and periparturient diseases: Preliminary study. G. Matteo*, C. Chiara, C. Mauro, and M. Massimo, Department of Veterinary Clinical Sciences. University of Padua, Legnaro, Padova (PD), Italy.

W3  Effect of modified yeast extract and HSCAS containing mycotoxin adsorbent on blood metabolites of dairy cows challenged with aflatoxin B1. M. R. Akkaya¹, M. A. Bal¹, F. Inanc Tolun¹, F. Bilge¹, Y. Atli¹, and V. Akay*²; ¹Kahramanmaras Sutcu Imam University, Turkey, ²Global Nutritech Ltd., Kocaeli, Turkey.

W4  Comparison of rectal and vaginal body temperatures in lactating dairy cows. L. A. Vickers*, M. A. G. von Keyserlingk², D. M. Veira³, D. M. Weary¹, and W. Heuwieser³, ¹Animal Welfare Program, Faculty of Land and Food Systems, University of British Columbia, Vancouver, British Columbia, Canada, ²Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany, ³Agriculture and Agri-Food Canada, Pacific Agriculture Research Station, Agassiz, British Columbia, Canada.

W5  Effects of prepartum dietary carbohydrate source on reproductive performance and metabolic disorders in Holstein cows during the periparturient period. H. R. Mirzaei Alamouti¹, H. Amanlou², K. Rezayazdi¹, and A. Towhidi³; ¹University of Tehran, Karaj, Tehran, Iran, ²Zanjan University, Zanjan, Iran.

W6  Expression of inducible nitric oxide synthase is up-regulated by production of 1,25-dihydroxyvitamin D3 in bovine monocytes in response to toll-like receptor signaling. C. D. Nelson¹, ²C. D. Beltz², T. A. Reinhardt², and J. D. Lippolis³; ¹Iowa State University, Ames, ²National Animal Disease Center, United States Department of Agriculture, Ames, IA.

W7  Factors affecting milk ELISA scores of cows tested for Johne’s disease. H. D. Norman¹, J. R. Wright*, and T. M. Byrem²; ¹Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, ²Antel BioSystems, Lansing, MI.

W8  Characteristics of milk ELISA results for Johne’s disease in US dairy cows. T. M. Byrem*, H. D. Norman¹, and J. R. Wright²; ¹Antel BioSystems, Inc., Lansing, MI; ²Animal Improvement Programs Laboratory, Beltsville, MD.

W9  Johne’s outreach survey. K. E. Olson*, KEO Consulting, Schaumburg, IL.

W10 Perceptions of and participation in a Johne’s control program. E. Hovingh*¹, K. E. Olson², and J. McDonald³; ¹Pennsylvania State University, University Park, ²KEO Consulting, Schaumburg, IL, ³University of Wisconsin, Madison.

W11 Relationship between lying patterns, feeding management, and udder health in lactating dairy cows. B. L. Kitts*¹, S. Dufour², D. T. Scholl³, and T. J. DeVries⁴; ¹Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada; ²Faculté de Medicine Vétérinaire, Université de Montréal, Saint-Hyacinthe, Quebec, Canada.

W12 Using gait score and resting behavior to detect hoof lesions in cows. N. Chapinal¹, A. M. de Passillé¹, D. M. Weary², M. A. G. von Keyserlingk², and J. Rushen*²; ¹Agriculture and Agri-Food Canada, Agassiz, BC, Canada, ²University of British Columbia, Vancouver, BC, Canada.

W13 Effect of metritis on health, fertility and milk production in two subsequent lactations in dairy cows. J. R. Lima*, J. E. P. Santos², and R. G. S. Bruno³; ¹University of California-Davis, Tulare, ²University of Florida, Gainesville.

W14 Effects of feeding menhaden fish meal or Ca salts of fish oil fatty acids on some cytokine genes expression and endometrial cytology in early lactating cows. A. Heravi Moussavi*¹, H. B. Roman², T. R. Overton³, D. E. Bauman⁴, W. R. Butler⁵, and R. O. Gilbert⁵; ¹Department of Animal Science and Excellence Center for Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, ²Cornell University, Ithaca, NY.

W15 Feeding dairy cows barley grain treated with lactic acid and heat modulated diurnal patterns of selected plasma metabolites. S. Iqbal, Q. Zebeli, A. Mazzolari, S. M. Dunn, and B. N. Ametaj*; ¹University of Alberta, Edmontont, Alberta, Canada.


W17 Effects of Bacillus subtilis on antioxidant capacity and immunity of broilers. Y. Dongyou, M. Xiangfei, Q. Yan, and L. Weifen*; ¹College of Animal Science, Feed Science Institute, Zhejiang University, Hangzhou, Zhejiang, China.

W18 Melamine residues in tissues of ducks fed diets containing graded levels of melamine. M. Lü*, L. Yan, J. Guo, Z. Sun, and S. Zhu; Research and Development Center, Liuhe Feed Co., Ltd., Qingdao, Shandong, China.
W21 Ameliorating effect of ascorbic acid on subacute endosulfan toxicity in male New Zealand White rabbits. F. S. Hatipoglu¹, O. Ozmen², A. Ata¹, T. Ileri-Buyukoglu¹, S. Sahinduran¹, F. Mor³, O. Yildiz-Gulay⁴, and M. S. Gulay⁴*, ¹Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Pathology, Burdur, Turkey, ²Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Burdur, Turkey, ³Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Biochemistry, Burdur, Turkey, ⁴Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Internal Medicine, Burdur, Turkey.

W22 Effect of autolyzed yeast on macrophage activation in vitro and performance of weaning piglets. A. Ganner*¹, S. Nitsch², and G. Schatzmayer¹, ¹BIOMIN Research Center, Technopark 1, Tulln, Austria, ²BIOMIN Holding GmbH, Industriestr. 12, Herzogenburg, Austria.

W23 Monitoring of the efficacy of SOP GOLD PIG on the reduction of the microbial load in an Italian commercial fattening piglet farm. G. Tacconi¹, A. Covarelli¹, and A. Zanierato*², ¹Veterinary Medicine Faculty, Department of Biopathological Science and Hygiene of Food and Animal Productions, Perugia, Italy, ²SOP Srl, Busto Arsizio, Italy.

W24 Effect of timing of Mannheimia haemolytica challenge following short-term exposure to bovine viral diarrhea virus type 1b on serum cytokine concentrations and muscle and fat gene expression changes in growing beef steers. L. Carlos-Valdez*¹, L. Burciaga-Robles¹, D. L. Step², R. W. Fulton³, A. W. Confer³, U. DeSilva¹, and C. R. Krehbiel¹, ¹Oklahoma State University, Department of Animal Science, Stillwater, ²Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater, ³Oklahoma State University, Department of Veterinary Pathobiology, Stillwater.

W25 Effect of time of ractopamine feeding on growth, carcass characteristics, and muscle biology of steers. M. Hill*¹, K. Chapalamadugu¹, C. Schneider¹, R. A. Hill², G. Gaylord², J. K. Ahola², C. W. Hunt³, J. Szasz³, and G. K. Murdoch³, ¹University of Idaho, Moscow, ²USDA-ARS/PWA/SGPGRU, Hagerman, ID, ³University of Idaho, Moscow.

W26 Residual feed intake in progeny of Nellore bulls. Y. B. Farjalla¹, C. U. Magnabosco¹, F. Manicardi¹, F. R. C. Araújo⁴, D. P. D. Lanna*¹, and R. D. Sainz², ¹Universidade de São Paulo, Piracicaba, São Paulo, Brazil, ²Embrapa Cerrados, Planaltina, Distrito Federal, Brazil, ³Guaporé Pecuária, Pontes e Lacerda, Mato Grosso, Brazil, ⁴Aval Serviços Tecnológicos, Uberaba, Minas Gerais, Brazil, ¹University of California, Davis.


W28 Carcass traits of beef heifers of different genetic groups finished with different concentrate allowance levels. S. F. Reis¹, E. J. Souza¹, J. F. Lage¹, R. A. A. Torres Júnior¹, S. C. Valadares Filho¹, L. F. Costa e Silva¹, L. F. Prados¹, and P. B. Benedeti¹, ¹Universidade Federal de Viçosa, Viçosa, MG, Brazil, ²EMBRAPA Beef Cattle Research Center, Campo Grande, MS, Brazil, ³Universidade Federal Rural de Pernambuco, Recife, PE, Brazil.

W29 Feedlot performance of cull cows fed using three systems. C. L. Wright*¹ and R. J. Maddock², ¹South Dakota State University, Brookings, SD, USA, ²North Dakota State University, Fargo.

W30 Impact of castration and weaning age on yearling carcass and meat quality. R. Berthiaume*¹, L. Faucitano¹, I. Mandell², S. Miller², and C. Lafrenière¹, ¹Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, ²University of Guelph, Guelph, Ontario, Canada, ³Agriculture and Agri-Food Canada, Kapuskasing, Ontario, Canada.

W31 Fatty acid profile of back fat and intramuscular fat from yak and Chinese Yellow Cattle. Y. S. Peng¹, M. A. Brown², and J. P. Wu¹, ¹Gansu Agricultural University, Lanzhou, Gansu, PRC, ²USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.

W32 Differences in hair coat shedding, calf weaning weight and BCS among Angus dams. K. A. Gray*, J. P. Cassady, and C. Maltecca, North Carolina State University, Raleigh.

W33 Age at first calving and longevity of Charolais cows. F. Szabó* and Z. Zsuppán, University of Pannonia, Keszthely, Hungary.

W34 Weaning performance of Charolais calves. F. Szabó*¹, A. Földösi¹, Z. Domokos², and S. Bene¹, ¹University of Pannonia, Keszthely, Hungary, ²National Association of Hungarian Charolais Breeders, Miskolc, Hungary.
Breeding and Genetics

Genomic Evaluation, Molecular Genetics, Statistical Methods, Sheep Breeding, and Swine Breeding

W35 Improving the profitability of beef from pastures: A case study of Tasmania’s Circular Head Beef Business Group. A. E. O. Malau-Adull1, J. D. Bruce1, B. Doonan2, and P. A. Lane1, 1School of Agricultural Science, University of Tasmania, Hobart, Tasmania 7001, Australia, 2Davey & Maynard Consultants, Davenport, Tasmania 7310, Australia.

W36 Value of genome-wide selection in Japanese dairy population. H. Ohmiya* and M. Suzuki, Obihiro University of Agriculture & Veterinary Medicine, Obihiro, Hokkaido, Japan.


W38 Genomic evaluation of Holstein cattle in Canada utilizing MACE proofs. F. S. Schenkel*, M. Sargolzaei, G. Kistemaker, G. B. Jansen, P. Sullivan, B. J. Van Doormaal, P. M. VanRaden, and G. R. Wiggans, 1University of Guelph, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada, 3Dekoppel Consulting, Chiaverano, TO, Italy, 4Agricultural Research Service-USDA, Beltsville, MD.

W39 Integrated software tools for genome-wide association analysis and genomic prediction in livestock. J. R. O’Connell*, University of Maryland School of Medicine, Baltimore.


W43 Investigation for increase reproduction rate with used of identification QTL associated with twining in Shall sheep. N. Hedayat-Ervigh*, S. R. Miraei-Asheri*, and A Nejati-Javaremi, University of Tehran, Karaj, Tehran, Iran.


W45 Analysis in silico and in vitro of caseinophosphopeptidases from different genetic variants. A. M. Caroli*, O. Bulgari, S. Chessa, D. Rignanese, D. Cocchi, and G. Tulipano, 1Dept. SBB, Brescia, Italy, 2Dept. VSA, Guelph, ON, Canada, 3University of California, Riverside.


W47 Development of a two-species cDNA microarray for transcriptional profiling of sow and dairy cow reproductive traits. M. F. Palín, D. Beaudry, M. Vallée, N. Bissonnette, B. D. Murphy, and H. V. Pettit, Agricultural and Agri-Food Canada, Sherbrooke, QC, Canada, 1Université Laval, Québec, QC, Canada, 2Université de Montréal, St-Hyacinthe, QC, Canada, 3University of Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada, 4Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada, 5Colorado State University, Fort Collins.

W48 Genome-wide analysis of QTL effects in Canadian Holstein cattle using empirical Bayes method. H. Li*, Z. Wang, P. Stothard, M. Sargolzaei, F. S. Schenkel, and S. Xu, 1University of Alberta, Edmonton, AB, Canada, 2University of Guelph, Guelph, ON, Canada, 3University of California, Riverside.

W49 Associations of single nucleotide polymorphisms in bovine fatty acid synthase gene with fat deposition and carcass merit traits in Hybrid, Angus and Charolais beef cattle. K. Islam*, M. Vinsky, R. Crews, E. Okine, S. S. Moore, D. H. Crews Jr.*, and C. Li, 1Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada, 2Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada, 4Colorado State University, Fort Collins.

W50 Association analyses of single nucleotide polymorphisms in bovine stearoyl-CoA desaturase and fatty acid synthase genes with fatty acid composition in commercial crossbred beef steers. C. Li, M. Vinsky, M. E. R Dugan, N. Aida, and T.A. McAllister, 1Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada, 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada, 3University of Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada.

W51 Validation and characterization of 1536 fat-related gene-specific SNPs in beef cattle. M. Vinsky*, K. Islam, P. Stothard, and C. Li, 1Agriculture and Agri-Food Canada, Lacombe Research Centre, 6000 C&E Trail, Lacombe, Alberta, Canada, 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.
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<td>Use of low density SNP chip for parental verification in US Holsteins.</td>
<td>S. Tsuruta¹, I. Misztal¹, and T. J. Lawlor¹, University of Georgia, Athens, Holstein Association USA Inc., Brattleboro, VT.</td>
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<td>W54</td>
<td>Using a repeated measurements mixed model to analyse some environmental factors affecting weight at different ages of Arabi sheep breed of Iran.</td>
<td>H. Farhangfar¹, B. Zinvari², M. B. Sayyadnezhad³, and I. Mirzaee⁴, Birjand University, Birjand, Azad University of Shooshtar, Shooshtar, Iran, Animal Breeding Centre, Karaj, Iran, Agricultural Jihad Organisation, Khuistan, Iran.</td>
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<td>W55</td>
<td>Improve reproduction with identification of polymorphism in FecXH gene in Shall sheep.</td>
<td>N. Hedayat-Evrigh*, S. R. Miraei-Ashtiani, and A. Nejati-Javaremi, University of Tehran, Karaj, Tehran, Iran.</td>
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<td>W57</td>
<td>Effect of vitamin E on chromatin integrity of ram epididymal sperm.</td>
<td>B. L. Sartini*, K. H. Peterssson, and M. Procopio, University of Rhode Island, Kingston.</td>
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<td>W58</td>
<td>Association of beta-lactoglobulin and prolactin genes with milk production in East Friesian sheep.</td>
<td>E. A. Staiger¹, M. L. Thoney², B. W. Buchanan³, and R. G. Mateescu⁴, Oklahoma State University, Stillwater, Cornell University, Ithaca, NY.</td>
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<td>W60</td>
<td>Genetic analysis of lean tissue growth and carcass traits in Large White swine.</td>
<td>T. M. Gonçalves¹, A. L. L. Costa¹, A. I. G. Oliveira¹, and M. C. A. M. Bink², University of Lavras, Lavras, Minas Gerais, Brazil, University of Wageningen, Wageningen, the Netherlands.</td>
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<td>W61</td>
<td>Factors affecting weaning-to-first service interval in a Landrace-Large White swine population in Northern Thailand.</td>
<td>C. Chansomboon¹, S. Koonawootritronir¹, M. A. Elzo³, and T. Suwanasopee³, Kasetsart University, Bangkok, Thailand, University of Florida, Gainesville.</td>
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<td>W62</td>
<td>Use of random regression models for the genetic analysis of weight gain from electronic swine feeders.</td>
<td>C. Y. Chen¹, I. Misztal¹, S. Tsuruta¹, B. Zumbach¹, M. Lukaszewicz¹, W. O. Herring¹, J. Holl¹, and M. Culbertson¹, University of Georgia, Athens, Norsvin, Hamar, Norway, Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Wolka Kosowska, Poland, Smithfield Premium Genetics Group, Rose Hill, NC.</td>
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**Dairy Foods**

**Dairy Products/Chemistry/Enzyme**

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<td>Calcium reduces DMH-induced large intestinal tumors in male Wistar rats.</td>
<td>K. Sivieri¹ and E. Rossi², Universidade Norte do Paraná-UNOPAR, Londrina, Paraná, Brasil, Universidade Estadual Paulista-UNESP, Araraquara, São Paulo, Brasil.</td>
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<td>W64</td>
<td>Effect of storage temperatures on ice cream quality.</td>
<td>J. Buyck* and R. Baer, South Dakota State University, Brookings.</td>
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<td>W65</td>
<td>Obtention of a dairy ingredient rich in milk fat globule membrane material from whey buttermilk.</td>
<td>M. R. Costa¹, R. Jiménez-Flores¹, and M. L. Gigante², Universidad de la República, Montevideo, Uruguay, Universidad Estadual de Campinas, Campinas, São Paulo, Brazil, California Polytechnic State University, San Luis Obispo.</td>
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<td>W66</td>
<td>Effect of pH on functional properties of regular and whey buttermilk powders.</td>
<td>M. R. Costa¹, R. Jiménez-Flores¹, and M. L. Gigante², Universidad de la República, Montevideo, Uruguay, Universidad Estadual de Campinas, Campinas, São Paulo, Brazil, California Polytechnic State University, San Luis Obispo.</td>
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<td>W67</td>
<td>Milk iodine concentration in goats supplemented with potassium iodide.</td>
<td>A. Nudda¹, F. Aghini-Lombardi², G. Battacone³, M. Decandia³, M. Frigeri³, and G. Pulsinelli³, Dipartimento di Scienze Zootecniche, University of Sassari, Italy, Dipartimento di Endocrinologia e Metabolismo, University of Pisa, Italy, Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.</td>
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<td>Antioxidant properties of milk protein dispersions preheated with various sugars.</td>
<td>H. J. Giroux*, J. Houde, and M. Britton, Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint-Hyacinthe, QC, Canada.</td>
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<td>W69</td>
<td>Main phospholipids content of sweet whey cream, butter and buttermilk.</td>
<td>M. R. Costa¹, R. Jiménez-Flores¹, and M. L. Gigante², Universidad de la República, Montevideo, Uruguay, Universidad Estadual de Campinas, Campinas, São Paulo, Brazil, California Polytechnic State University, San Luis Obispo.</td>
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<td>W70</td>
<td>Expression of milk-derived angiotensin-converting-enzyme-inhibiting peptide in Lactococcus lactis.</td>
<td>X. Han², L. Yao², M. Wang², D. Sun², B. Li², and Y. Jiang¹, National Dairy Engineering &amp; Technical Research Center, Northeast Agricultural University, Harbin, China, Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.</td>
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Improvement of emulsiﬁying properties of sodium caseinate by conjugation with maltodextrins through the initial step in the Maillard reaction. Y. Lu* and J. Lucey, University of Wisconsin, Madison.

Chemical composition, probiotic survivability and sensory property of goat’s milk kefir. Y. H. Bao1,2, G. P. Yu1,3, and M. R. Guo*, 1University of Vermont, Burlington, 2Northeast Forestry University, Harbin, Heilongjiang, China, 3Northeast Agricultural University, Harbin, Heilongjiang, China.

Optimizing the organoleptic and nutritional qualities of a dairy-based ready-to-eat food product. J. Heick*, M. Cleveland, H. Khalil, and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.


Shelf life of milk. C. A. Boeneke*, J. L. Vargas, and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

Inﬂuence of resistant starch on the characteristics of fat free plain yogurt. M. Moncada1, K. Aryana*2,1, M. Keenan2,1, R. Martin1,2, F. Greenway1, and N. Dhurandhar1, 1Louisiana State University, Baton Rouge, 2Louisiana State University Agricultural Center, Baton Rouge, 3Pennington Biomedical Research Center, Baton Rouge, LA.

Acceptability of yogurt containing resistant starch. K. Aryana*1,2, D. Olson2, M. Keenan1,2, R. Martin1,2, F. Greenway2, and N. Dhurandhar1, 1Louisiana State University Agricultural Center, Baton Rouge, 2Louisiana State University, Baton Rouge, 3Pennington Biomedical Research Center, Baton Rouge, LA.

Improving the quality of yogurt with modiﬁed whey protein ingredients. P. T. Matumoto-Pintro*, L. Rabiey, G. Robitaille, and M. Britten, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada.

Effect of starch spherulites on survival of bifidobacteria in the presence of acid or bile. S. Chittiprolu, R. F. Roberts*, and G. R. Ziegler, The Pennsylvania State University, University Park.

Determination of free fatty acid proﬁles of reduced-fat and whole goat milk cheeses aged for 3 months under refrigeration. W. Nouira1, Z. Guler2, and Y. W. Park*, 1Fort Valley State University, Fort Valley, GA, 2Mustafa Kemal University, Hatay, Turkey.

Heat stability of mixtures of different milk protein concentrates (40–90% protein) and whey protein concentrate (80% protein). Y. H. Yong* and E. A. Foegeding, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh.

Effect of processing on the structure and functional properties of milk phospholipids. S. Gallier*1,2, D. Gragson1, D. W. Everett1, and R. Jiménez-Flores1, 1Department of Food Science, University of Otago, Dunedin, Otago, New Zealand, 2Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, 3Department of Chemistry and Biochemistry, California Polytechnic State University, San Luis Obispo.

Investigation of self-assembly properties of a β-lactoglobulin tryptic peptide. M.-M. Guy*1,2, M. Tremblay2, N. Voyer3, S. Gauthier1,2, and Y. Pouliot1,2, 1Institute of Nutraceuticals and Functional Foods (INAF), Quebec City, QC, Canada, 2Dairy Science and Technology Research Center (STELA), Quebec City, QC, Canada, 3Protein function, Structure and Engineering Research Center (CREFSIP), Quebec City, QC, Canada.

Identiﬁcation of chemical components responsible for cardboard ﬂavor in whey proteins. M. E. Whitson*, R. E. Miracle, and M. A. Drake, North Carolina State University, Raleigh.


Binding afﬁnity of various strains of lactic acid bacteria to phospholipids found in buttermilk. M. Cleveland* and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.

Non-casein nitrogen analysis of microﬁltration and ultraﬁltration retentate. H. Zhang1,2 and L. E. Metzger1,2, 1Midwest Dairy Foods Research Center, Brookings, SD, 2South Dakota State University, Brookings.

Effect of processing and refrigerated storage on isoflavone and stachyose contents of yogurt fortified with non-germinated or germinated whole soy powder. U. Nsofor* and Z. Ustunol, Michigan State University, East Lansing.

The effect of pH and whey protein nitrogen (WPN) on the heat stability of medium heat nonfat dry milk powders. V. Sikand*1,2, E. Ng1, S. Gualco1, A. Hui1, P. S. Tong1, and J. H. Walker1, 1Dairy Products Technology Center, Cal Poly State University, San Luis Obispo, 2Statistics Department, Cal Poly State University, San Luis Obispo.

Dietary milk fat globule membrane (MFGM) reduces the incidence of aberrant crypt foci (ACF) in Fisher-344 rats. K. J. Hintze*, D. Snow1, R. Jimenez-Flores2, J. Campbell1, and R. E. Ward1, 1Department of Nutrition and Food Sciences, Utah State University, Logan, 2Dairy Products Technology Center, Department of Agriculture, California Polytechnic State University, San Luis Obispo.
W92 Codon optimization of bovine prochymosin gene and its expression in Kluyveromyces lactis. F. Zhen*1 and Z. Lanwei, 1College of Food Science, Northeast Agricultural University, Harbin, Heilongjiang Province, China, 2College of Food Science and Technology, Harbin Institute of Technology, Harbin, Heilongjiang Province, China.

W93 Effect of carbon dioxide addition on refrigerated raw milk proteolysis. P. C. B. Vianna, M. T. Ruiz, and M. L. Gigante*, State University of Campinas, Campinas, SP, Brazil.

W94 Expression of bovine trypsin in Lactococcus lactis. L. Yao1, X. Han2, X. Qu2, B. Li2, Y. Jiang2, and Y. Jiang*1,2, 1National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China, 2Key Lab of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.

W95 Effect of the protein fractions of the milk serum, alpha-lactalbumin and beta-lactoglobulin, on the Escherichia coli O157:H7 colonization in the intestinal mucosa of mice. J. P. Teixeira1, N. Silva1, L. M. Fonseca*1,2, and R. L. Bradley Jr.1, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Preventive Veterinary Medicine, Belo Horizonte, MG, Brazil, 3Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 4University of Wisconsin, Madison.

Extension Education

W96 Effects of heat mount detectors, season, breed, and lactation on reproductive efficiency in summer and winter of dairy cows marked with chalk. J. A. Pennington*1 and Z. B. Johnson2, 1University of Arkansas, Little Rock, 2University of Arkansas, Fayetteville.

W97 Improving IPM of house flies at commercial dairy operations through pest monitoring and determination of nuisance threshold. G. E. Higginbotham*1, L. N. Pereira1, and A. C. Gerry2, 1University of California Cooperative Extension, Fresno, 2California State University-Fresno, Fresno.

W98 Pizza Ranch is an educational tool to teach fourth graders about proper nutrition and where food originates. J. A. Pennington* and J. Buffalo, University of Arkansas Cooperative Extension Service, Little Rock.

W99 Economic importance of some traits of dairy cattle. F. Szabó* and Z. Fekete, University of Pannonia, Keszthely, Hungary.


W103 Description of Kentucky dairy management systems and producer demographics. R. A. Russell* and J. M. Bewley, University of Kentucky, Lexington.

W104 Characterization of the decision making behavior of Kentucky dairy producers. R. A. Russell* and J. M. Bewley, University of Kentucky, Lexington.

W105 A Spanish language artificial insemination school for Idaho dairy employees. J. C. Dalton*1, K. S. Jensen2, M. Chahine3, and M. de Haro Marti4, 1University of Idaho, Caldwell, 2University of Idaho, Marsing, 3University of Idaho, Twin Falls, 4University of Idaho, Gooding.


W107 TMR feeder schools in English and Spanish. R. J. Norell*1, M. Chahine2, and M. E. de Haro Marti3, 1University of Idaho, Idaho Falls, 2University of Idaho, Twin Falls, 3University of Idaho, Gooding.


W109 The integration of beef cattle into a peanut and cotton crop rotation that involves a perennial grass: A farm scale demonstration. R. O. Myer*1, D. Zhao2, K. S. Balkcom3, C. L. Mackowiak2, J. L. Foster1, D. L. Wright1, J. J. Marois1, J. A. Howe2, G. C. Lamb1, A. R. Blount1, and M. K. Maddox1, 1University of Florida, Marianna, 2Auburn University, Headland, AL.

**Forages and Pastures**

**Silages**

W113 Relationship of corn silage dry matter content to density in bunker silos. K. E. Griswold, J. M. Craig, and S. K. Dinh, \(^1\)Penn State Cooperative Extension, Lancaster, \(^2\)Penn State Cooperative Extension, Dauphin.


W115 Selection of bacterial strains to improve ensiling of alfalfa under sub-optimal conditions. S. Hansen, A. Smith, and T. Rehberger, Agtech Products Inc., Waukesha, WI.

W116 Effect of additive inclusion on dry matter loss of sugarcane silage. L. Borgatti, A. Conrado, J. Pavan Neto, P. Meyer, C. Mariano, and P. Rodrigues, \(^1\)University of São Paulo, Pirassununga, São Paulo, Brazil, \(^2\)Brazilian Institute of Geography and Statistics, Pirassununga, São Paulo, Brazil.

W117 Effects of microbial inoculants and dry matter content at harvest on the fermentation, aerobic stability and digestion of NDF of two corn silage hybrids. M. C. Santos, L. T. Tattt, M. C. Der Bedrosiang, W. Hu, O. G. Pereiranga, L. A. Williams, M. A. Gilinsky, and L. Kung Jr, \(^1\)University of Delaware, Newark, \(^2\)Universidade de São Paulo, Piracicaba, SP, Brazil, \(^3\)Universidade Federal de Viçosa, Vicsa, MG, Brazil.

W118 Using molecular techniques to identify and differentiate bacterial species and strains used in commercial silo inoculants. N. D. Walker, M. E. Quintino Cintorna, R. Schmidt, and R. Charley, \(^1\)Lallemand Animal Nutrition, Montreal, Quebec, Canada, \(^2\)Lallemand Animal Nutrition, Milwaukee, WI.

W119 Sorghum forage as an alternative to corn silage in dairy cows feeding. S. Colombini, G. Galassi, G. M. Crovetto, and L. Rapetti, \(^1\)University of Milan, Milan, Italy.

W120 Nutritive value and fermentation profile of sorghum silages with urea and two storage periods. F. E. P. Fernandes, R. Garcia, A. J. V. Pires, O. G. Pereira, and C. S. Fernandes, \(^1\)Federal University of Viçosa, Viçosa, MG, Brazil, \(^2\)State University of Bahia, Itapetinga, BA, Brazil, \(^3\)Fepemig, Belo Horizonte, MG, Brazil.

W121 Elephantgrass with and without wilting, added of cassava meal in silage production. R. Garcia, A. C. Oliveira, A. J. V. Pires, O. G. Pereira, and F. E. P. Fernandes, \(^1\)Federal University of Viçosa, Viçosa, MG, Brazil, \(^2\)State University of Bahia, Itapetinga, BA, Brazil.

W122 Effects of ensiling corn and sorghum silages under normal or adverse conditions on long chain fatty acids. B. C. do Amaral, S. C. Kim, O. F. Zacaroni, A. T. Adesogan, and C. R. Staples, \(^1\)University of Florida, Gainesville, \(^2\)Gyeongsang National University, Jinju, South Korea.

W123 Nutritive value of corn hybrids for silage production according to the maturity stage. M. Zopolla, L. G. Nussio, J. O. Sarturi, G. B. Mourão, A. P. Duarte, C. M. M. Bittar, and V. P. Santos, \(^1\)University of Sao Paulo/ESALQ, Piracicaba, SP, Brazil, \(^2\)University of Nebraska, Lincoln, \(^3\)Apta Regional, Assis, SP, Brazil.

W124 Nutritional quality of sunflower silage associated with additives. R. H. de Tonissi e Buschinelli de Goes, K. A. de Souza, E. S. Myagi, R. A. Patussi, K. C. da Silva Brabes, A. C. Martinez, C. O. de Abreu, E. R. de Oliveira, and D. D. Alves, \(^1\)Universidade Federal da Grande Dourados, Dourados, Mato Grosso do Sul, Brazil, \(^2\)Universidade Estadual de Maringá, Umuarama, Paraná, Brazil, \(^3\)Universidade Federal de Goiás, Goiânia, Goiás, Brazil, \(^4\)Universidade Estadual de Montes Claros, Januária, Minas Gerais, Brazil.

W125 In situ dry degradation coefficients of whole crop barley silage treated with \(Lactobacillus plantarum\) or mixed with \(Pediococcus pentosaceus\) plus \(Propionibacter freundii\). M. Vatandoost, M. Danesh Mesgaran, A. Heravi Mousavi, and A. R. Vakili, Ferdowsi University of Mashhad, Mashhad, Iran.

W126 The effect of propionic acid or propionate ammonium on chemical composition and in situ dry matter degradation of whole crop barley silage. M. Vatandoost, M. Danesh Mesgaran, A. Heravi Mousavi, and A. R. Vakili, Ferdowsi University of Mashhad, Mashhad, Iran.

W127 Antioxidant activity and white blood cells on plasma of lambs fed with Manzarina. H. E. Rodríguez-Ramírez, C. Rodríguez-Muela, R. Bocourt-Salabarria, C. Chávez-Hernández, O. Ruiz-Barrera, C. Hernández-Gómez, R. Jasso-Ibarra, and C. Holguín-Licón, \(^1\)Universidad Autónoma de Chihuahua, Chihuahua, México, \(^2\)INIFAP, Campo Experimental Delicias, Delicias, Chihuahua, México, \(^3\)Instituto de Ciencia Animal, Habana, Cuba.
W128 Inoculant-treated corn silage quality and performance of lactating cows. A. Ghaempour1, G. R. Ghorbani1, M. Khorvash2, and A. Nikkhah*1, 1Isfahan University of Technology, Isfahan, Iran, 2Zanjan University, Zanjan, Iran.

W129 Fitted models for description of cumulative gas production profiles from silages of sunflower and corn. R. Mello*1, A. L. R. Magalhães2, F. C. Breda1, A. J. Regazzi1, A. C. de Queiroz1, and J. L. Nörnberg4, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Universidade Federal Rural de Pernambuco - Unidade Acadêmica de Garanhuns, Garanhuns, Pernambuco, Brazil, 3Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 4Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil.

W130 Nitrogenous compounds and fermentation characteristics of king grass - leucaena silages. T. Clavero* and R. Razz, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.


W132 Biomin® BioStabil Mays enhanced the fermentation and the aerobic stability of corn silage under tropical laboratory conditions. A. A. Rodríguez*1, Y. Acosta-Aragón2, and E. Velcya3, 1University of Puerto Rico, Mayaguez, PR, 2Biomin GmbH, Austria.

International Animal Agriculture

W133 Dairy farm milk quantity, quality, and revenue within a private organization in Central Thailand. S. Yeamkong1, S. Koonawoottritrin1, M. A. Elzo*2, and T. Suwanasopee1, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.

W134 Hormonal profile in superovulated buffalo heifers using pFSH and LH. A. M. Osman* and S. H. Shehata, Assiut University, Assiut, Egypt.

W135 Semen quantity and quality of dairy bulls raised in tropical Central Thailand. T. Kongnoi1, S. Koonawoottritrin1, M. A. Elzo*2, and T. Suwanasopee1, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.

W136 Effect of proportion of females on number of piglets born alive and pre-weaning growth traits in Pietrain swine in Thailand. T. Punsanit1, S. Koonawoottritrin1, T. Suwanasopee1, and M. A. Elzo*2, 1Kasetsart University, Bangkok, Thailand, 2University of Florida, Gainesville.


W139 Elaboration of ruminant supplements with byproducts and residues of bio-ethanol produced on farm settings. H. O. Patino*1, B. P. Ospina2, E. C. Mallmann3, and A. Roa4, 1Dep. Zootecnia,UFRGS, Porto Alegre, RS, Brazil, 2Latin American and Caribbean Consortium to support Cassava Research and Development, CLAYUCA, Cali, Valle del Cauca, Colombia, 3Usinas Sociais Inteligentes, USI, Porto Alegre, RS, Brazil, 4Soil Net LLC, Madison, WI.

W140 Factors affecting milk production in Brazil. R. P. Lana*1,2, G. Guimarães1,2, A. V. Guimarães1, and M. A. Santos1, 1Universidade Federal de Viçosa - Ufv, Viçosa, MG, Brazil, 2Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq, Brasília, DF, Brazil.

W141 Bulk tank milk quality in Brazil - 2007/2008. L. M. Fonseca*1,2, R. Rodrigues1,2, M. M. O. P. Cerqueira1,2, M. O. Leite1,2, M. R. Souza1,2, and C. F. A. M. Penna1,2, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil.

W142 Multivariate analysis applied to milk quality evaluation in Brazil. A. M. G. Oliveira1,2, L. M. Fonseca*1,2, I. B. M. Sampaio1, and Célia L. L. F. Ferreira1, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 3Federal University of Viçosa, Viçosa, MG, Brazil, 4LANAGRO, Ministério da Agricultura, Pecuária e Abastecimento, Pedro Leopoldo, MG, Brazil.

W143 Azidiol in tablet form as a preservative for milk quality analysis. J. F. Castro1, L. M. Fonseca*1,2, R. Rodrigues1,2, and C. S. P. Fonseca3, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil.
W144 Effect of dietary medicinal plants or an organic acid on ileal nutrient digestibility of Ross broiler chickens. H. Ziae1*, M. Bashtani2, M. A. Karimi Torshizi1, H. Farhangfar3, H. Naeemipour2, and A. Zeinali2, 1Agricultural Research Center, Birjand, Iran, 2Birjand University, Birjand, Iran, 3Tarbiat Moades University, Tehran, Iran.

W145 Effect of a dietary herbal medicine and an organic acid on bone characteristics of Ross broiler chickens. H. Ziae1*, M. Bashtani2, M. A. Karimi Torshizi1, A. Zeinali2, H. Naeemipour2, and H. Farhangfar3, 1South Khurasan Agricultural and Natural Resources Researches Center, Birjand, Khorasan, Iran, 2Birjand University, Birjand, Khorasan, Iran, 3Tarbiat Moades University, Tehran, Iran.

W146 The effect of ractopamine and ileal digestible lysine levels on growth performance and carcass characteristics of finishing pigs. D. Fontes3, E. C. Almeida1, E. T. Fialho1, M. A. Zangeronimo1, N. O. Amaral1, L. M. Pereira, Jr., and P. B. Rodrigues1, 1University Federal of Lavras, Lavras, MG, Brazil, 2University Federal Minas Gerais, Belo-Horizonte, Brazil.


W149 Effects of ginger root powder on growth performance and antioxidative status of broiler chickens. G. F. Zhang1, Z. B. Yang*, Y. Wang2, W. R. Yang1, X. Y. Zhao1, and S. Z. Jiang1, 1Shandong Agricultural University, Tai-an, Shandong, China, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 3Tsinghua University, Beijing, China.


W151 The effect of dietary laminarin and fucoidan in the diet of the weaning piglet on performance, selected faecal microbial populations and volatile fatty acid concentrations. P. McDonnell and J. V. O’Doherty*, Lyons Research Farm, University College Dublin, Newcastle, Co Dublin, Ireland.

W152 Acanthopanax senticosus extract improved growth performance and antioxidative capacity in weaned piglets. X. Wu1, F. Y. Yan1, Y. L. Yin1, 1X. F. Kong1, T. J. Li1, R. L. Huang1, and L. X. Chen1, 1The Chinese Academy of Sciences, Changsha, China, 2Guang An Biological Technique Company, China.

W153 Weaned piglet responses to Escherichia coli K88+ oral challenge when receiving yeast fermentation products: growth performance and gastrointestinal measurements. E. Kiarie*, S. Bhandari1, M. Sco1, 1University of Manitoba, Winnipeg, MB, Canada, 2Diamond V, Cedar Rapids, IA.


W156 Effects of dietary wild-ginseng adventitious root meal on growth performance and meat quality in broiler chicks. H. D. Jang*, E. J. Han1, W. K. Jeon1, K. Y. Paek2, S. D. Lee3, J. C. Park4, and I. H. Kim1, 1Dankook University, Cheonan, Choongnam, Korea, 2Chungbuk University, Cheongju, Chungbuk, Korea, 3Korea Institute of Oriental Medicine, Daejeon, Korea, 4National Institute of Animal Science, RDA, Cheonan, Choongnam, Korea.

W157 Effects of the Chinese herb extract supplementation on growth performance, blood characteristics and meat quality in growing-finishing pigs. T. X. Zhou1, J. S. Yoo1, J. P. Wang, L. Yan, and I. H. Kim, Dankook University, Cheonan, Choongnam, Korea.

W158 Effects of anion emission rock powder supplementation on growth performance, nutrient digestibility, blood characteristic and fecal gas emission of weanling pigs. J. H. Lee1, J. S. Yoo1, H. D. Jang, and I. H. Kim, Dankook University, Cheonan, Choongnam, Korea.

W159 Effects of delta-aminolevulinic acid and antibiotics on the growth performance, nutrient digestibility, hemato logical status, and immune responses of weanling pigs. J. P. Wang1, J. S. Yoo1, J. H. Lee1, R. Noble2, S. H. Oh2, and I. H. Kim1, 1Dankook University, Cheonan, Choongnam, Korea, 2North Carolina A&T State University, Greensboro.


W167 Effects of dietary supplementation of Blacton™ on growth performance of pigs from weaning through finishing phases. K. Bregendahl and M. Z. Fan*, University of Guelph, Guelph, Ontario, Canada.


W169 Different enzymatic activities of sixty-two isolated lactic acid bacteria of chicken digestive tract. H. R. Taheri*, H. Moraveji, F. Tabandeh, M. Zaghari, and M. Shivaazad, University of Tehran, Karaj, Tehran, Iran, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.


W174 Effects of Pediciococcus acidilactici and Saccharomyces cerevisiae boulardii on the ileal microbiota of piglets two weeks after weaning. J.-P. Brousseau*, F. Beaudoin, D. Roy, and M. Lessard, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, University Laval, Quebec, Canada.


W176 Plant active compounds or extracts can be effective as antioxidants in vitro. C. Ionescu*, J. Seppey, D. Bravo, M. Grogg, X. Simonnet, N. Marcon, and A.-F. Grogg, Pancosma, Geneva, Switzerland, Médiplant, Conthey, Switzerland, HESSO, Sion, Switzerland.


W178 Effects of feeding Lathyrus sativus on broiler performance. M. Eslami* and B. Ahmadipour, Ramin Agricultur and Natural Resources University, Ahwaz, Khouzestan, Iran.

W179 Effects of dietary Biomate (Artemisia, Acanthopanax and garlic) on performance in lactating sows. S.-M. Hong*, M.-J. Kim, M.-B. Cho, B.-U. Yang, M.-J. Kim, I.-H. Kim, and S.-H. Oh, Dankook University, Cheonan, Chungnam, South Korea, North Carolina A&T State University, Greensboro.
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W180  Effects of dietary probiotics of endospores and complex enzyme supplementation on growth performance in pigs. M. J. Kim*, B.-U. Yang1, M.-B. Cho1, M.-J. Kim1, S.-M. Hong1, J.-H. Kim1, T. Barrios2, and S.-H. Oh2, 1Dankook University, Cheonan, Chungnam, South Korea, 2North Carolina A&T State University, Greensboro.


W183  Effects of natural clay enterosorbent on vulva sizes and reproductive organ weights of postweaning female pigs fed zearalenone contaminated diets. Z. B. Yang*, S. Z. Jiang1, W. R. Yang1, H. Zao1, C. C. Chen2, and F. Chi1, 1Shandong Agricultural University, Taian, Shandong, PRC, 2Chaoyang University Technology, Taichung, Taiwan, ROC, 3Amlan International, Chicago, IL.

W184  Effects of natural clay enterosorbent on nutrient digestibility of postweaning female pigs fed zearalenone contaminated diets. Z. B. Yang*, S. Z. Jiang1, W. R. Yang1, H. Zao1, C. C. Chen2, and F. Chi1, 1Shandong Agricultural University, Taian, Shandong, PRC, 2Chaoyang University Technology, Taichung, Taiwan, ROC, 3Amlan International, Chicago, IL.

W185  Evaluation of the efficacy of a commercial purified phylosilicate to reduce the toxicity of zearalenone + deoxynivalenol in gilts. K. Bond1, C. K. Maune1, J. R. Stoltz2, and D. Zaviezo*, 1Special Nutrients, Miami, FL.


Production, Management and the Environment General


W209 Arrangements of Acacia decurrens, Acacia melanoxylon, and Alnus acuminata as silvopasture systems in a high tropic ecosystem. A. Conde*, L. L. Betancourt, C. J. Jaramillo, A. Umaña, D. Barrera, and D. R. Chamorro, Universidad de La Salle, Bogotá, Colombia, Corpoica, Bogotá, Colombia.

W210 Influence of Acacia mangium on soil chemical characteristics in a silvopastoral system in northwestern Venezuela. T. Clavero* and R. Razz, Centro de Transferencia de Tecnología en Pastos y Forrajes, Universidad del Zulia, Maracaibo, Estado Zulia, Venezuela.

W211 Discrimination and classification of the new co-products from bio-energy production using infrared spectroscopy with multivariate techniques-AHCA and PCA: Comparison among blend DDGs, wheat DDGs and corn DDGS and between wheat and wheat DDGs, and corn and corn DDGS. D. Damiran and P. Yu*, College of Agriculture and Bioresources, Oregon State University, Corvallis, Oregon State University, Corvallis.


W213 Copper and zinc accumulation in dairy production systems. T. Downing*, K. Stiglbaumer, M. Gamroth, and J. Hart, Oregon State University, Corvallis.

The effects of management and environmental factors on broiler breeder performance in Iran. H. Hosain*, M. Moradi Shahrbabak*, A. Noshari, M. Zaghari, and M. B. Zandi, 1, 1Tehran Azad University, Karaj Tehran Iran, 1University of Tehran, Karaj Tehran Iran, 1Young Researchers Cloob, Sanandaj Kurdistan Tehran.

Effects of stocking rate of weaned to finishing pigs on bermsudgrass ground cover. S. Pietrosemoli*, J. T. Green, and R. Vibart, 1Animal Science Department, North Carolina State University, Raleigh, 2Crop Science Department, North Carolina State University, Raleigh, 3AgResearch Limited, Grasslands Research Centre, New Zealand.

Suckling effect on the survival of crossbreed goats kids at weaning. L. F. D. Medeiros, D. H. Vieira, C. A. Oliveira, D. F. Guerson, G. M. Fagundes, J. P. F. Silveira, R. S. B. Pinheiro, V. L. Tierzo, and J. L. C. B. Reis*, 1Rural Federal university of Rio de Janeiro, Seropedica, RJ, Brazil, 2Center of Creation of Animals of Laboratory, Rio de Janeiro, RJ, Brazil, 3São Paulo State University, Botucatu, SP, Brazil, 4University of Agrarian Sciences, University of Marília, Marília, SP, Brazil.


Black soldier fly larvae grown on cow manure. M. Chahine*, M. E. de Haro Martí, S. St Hilaire, O. Pozo, and R. E. Sheffield, 1University of Idaho, Twin Falls, 2University of Idaho, Gooding, 3Idaho State University, Pocatello, 4Louisiana State University, Baton Rouge.

Ruminant Nutrition
Dairy Calves
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The influence of parity, sex and twinning on birth weight of Holstein calves. M. H. Fathi Nasri* and H. Farhangfar, Department of Animal Science, The University of Birjand, Iran.


Effect of milk replacer carbohydrate source on performance and health of dairy calves. J. K. Bernard* and A. F. Kertz, 1University of Georgia, Tifton, 2ANDHIL LLC, St. Louis, MO.

Impact of glycerol in milk replacer on dairy calf performance. M. Raeth-Knight*, J. Linn, R. Larson, and J. Salzer, 1University of Minnesota, St. Paul, 2Hubbard Feeds, Mankato, MN.

Effect of group penning on dairy calf performance. D. Carr* and A. Chestnut, Vigortone Ag Products, Hiawatha, IA.

Relationship between immunoglobulin G intake and serum immunoglobulin G concentrations in calves fed titrated levels of immunoglobulin G in colostrum replacers. J. M. Campbell*, J. C. Gawthrop, A. W. Riad, L. E. Russell, S. K. Hayes, J. D. Quigley, and J. D. Crenshaw, 1APC, Inc., Ankeny, IA, 2CalfCare, North Manchester, IN.

Effects of protein sources in calf milk replacers on growth and fecal score of dairy calves. S. Y. Luan, J. Q. Wang, D. P. Bu, H. T. Zhang, Z. F. Zhou, and A. F. Kertz, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, 2ANDHIL LLC, St. Louis, MO.

Effects of combining hydrolyzed wheat gluten and spray dried plasma in calf milk replacer (CMR) on calf performance. J. K. Bernard* and A. F. Kertz, 1University of Birjand, Iran.

The effect of feeding alfalfa hay at different ages on pre- and post-weaning performance of Holstein calves. A. Ahangarani*, M. H. Fathi Nasri, H. Farhangfar, and A. Omidi, Department of Animal Science, The University of Birjand, Iran.

Effects of supplementing a mix of nucleotides to dairy calves prior to weaning on respiratory afflictions and immune response during the postweaning period. A. Bach*, A. Ferrer, D. Martínez-Puig, and J. Alhoed, 1ICREA, Barcelona, Spain, 2IRTA-Ruminant Production, Caldes de Montbui, Spain, 3Bioiberica, Barcelona, Spain, 4Rancho Las Nieves, Mallén, Spain.


Flavor effects on feed intake and performance of calves. C. Montoro*, I.IPHARRAGUERRE, and A. Bach, 1, 1IRTA-Ruminant Production, Caldes de Montbui, Spain, 2LUCTA S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.
Development of an animal model to evaluate oro-sensorial preferences in weaned calves. C. Montoro*1, F. Boe1, I. Ipharraguerre2, and A. Bach1,3, 1IRTA-Ruminant Production, Caldes de Montbui, Spain, 2Lucta S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.

Ruminant Nutrition

Dairy Heifers

Pre- and post weaning performance and health of heifer calves fed different levels of bovine spray dried animal plasma in a traditional milk replacer program. S. Hayes*1, D. Carlson1, D. Ziegler2, M. Raeth-Knight4, G. Golombeski1, B. Ziegler1, R. Larson2, J. Linn4, and H. Chester-Jones3, 1APC, Inc., Ankeny, IA, 2Milk Products, Chilton, WI, 3University of Minnesota Southern Research and Outreach Center, Waseca, 4University of Minnesota, St. Paul, 1Hubbard Feeds, Inc., Mankato, MN.

Performance and health of post weaned Holstein heifer calves from 9 to 25 weeks of age fed grain mixes containing varying levels of bovine spray dried plasma protein during the initial transition to group pens. H. Chester-Jones*, S. Hayes*, R. Larson2, B. Ziegler1, D. Ziegler1, M. Raeth-Knight4, G. Golombeski1, and J. Linn4, 1University of Minnesota Southern Research and Outreach Center, Waseca, 2APC, Inc., Ankeny, IA, 1Hubbard Feeds, Inc., Mankato, MN, 1University of Minnesota, St. Paul.

Performance of post weaned Holstein heifer calves fed limited or free-choice pelleted grain mixes with two differing fiber levels along with free-choice hay. D. Ziegler*, R. Larson2, B. Ziegler1, M. Raeth-Knight4, G. Golombeski1, H. Chester-Jones3, and J. Linn4, 1University of Minnesota Southern Research and Outreach Center, Waseca, 2APC, Inc., Ankeny, IA, 1Hubbard Feeds, Inc., Mankato, MN, 1University of Minnesota, St. Paul.

Correlation between future production performance and hepatic gene expression in postpubertal Holstein dairy heifers. J. Doelman*, N. G. Purdie, H. Cao, N. A. Karrow, and J. P. Cant, University of Guelph, Guelph, ON, Canada.

High protein level in the diet to dairy heifers from 10 to 22 months of age reduced milk yield in the long-term along with free-choice hay. D. Ziegler*, R. Larson2, B. Ziegler1, M. Raeth-Knight4, G. Golombeski1, and J. Linn4, 1University of Minnesota Southern Research and Outreach Center, Waseca, 2APC, Inc., Ankeny, IA, 1Hubbard Feeds, Inc., Mankato, MN, 1University of Minnesota, St. Paul.


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Fat Supplementation

Effect of dietary lipids on selected strains of ruminal bacteria. R. B. Potu*1, A. A. AbuGhazaleh2, K. L. Jones3, R. L. Atkinson1, D. Hastings1, J. D. Haddock1, and S. Ibrahim2, 1Southern Illinois University, Carbondale, 2North Carolina A&T University, Greensboro.


Effects of different rates of continuous abomasal or pulse ruminal infusions of either free or protected nicotinic acid on plasma NEFA concentrations. J. Pescara*, J. Pires, and R. Grummer, University of Wisconsin, Madison.

Effects of infusing volatile fatty acids intraruminally on rumen and milk odd and branched-chain fatty acids. E. A. French* and L. E. Armentano, University of Wisconsin, Madison.


The long-term effect of supplementation with fish oil or microalgae on the performance of grazing dairy cows. P. Vahmani*1, E. Gremmi2, K. Glover3, and A. Fredeen2, Dalhousie University, Halifax, NS, Canada, 1Nova Scotia Agricultural College, Truro, NS, Canada.
W250  Effect of feeding rapeseeds on lactation performance in dairy cows and oxidative stability of milk and butter. O. Y. Tsisaryk*, Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine.

W251  Performance and metabolic measures of lactating dairy cows fed diets supplemented with either mostly saturated or more unsaturated fatty acids. J. K. Bernard*, 1and A. F. Kertz, 2The University of Georgia, Tifton, 2ANDHIL LLC, St. Louis, MO.

W252  Effects of duodenal infusion of linolenic acid on nutrient digestion, milk production, and milk composition in dairy cows. Kasheferdene1, D. P. Bu1, J. G. Wang*1, Q. S. Liu1, L. Wang1, H. Y. Wei, 1, L. Y. Zhou1,2, and J. K. Drackley, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, 3Department of Animal Sciences, University of Illinois, Urbana.

W253  Effects of feeding different rumen-protected fat supplements on the fatty acid composition of milk. A. R. Sewell*, M. L. Eastridge, P. N. Gott, B. Mathew, and D. L. Palmquist, The Ohio State University, Columbus.

W254  Fatty acids profile of milk fat from cows with different forage and lipids levels in the diet. M. A. Oliveira1, M. M. Ladeira2, I. G. Pereira3, B. N. Faria1, and R. B. Reis*, 1Veterinary School, Federal University of Minas Gerais, Brazil, 2Animal Science Department, Federal University of Lavras, Brazil, 3Animal Science Department, Federal University of Jequitinhonha and Mucurury Valley, Brazil.

W255  Milk fatty acid composition of dairy cows fed whole flaxseed or/and Ca-salts of flaxseed oil. C. Córtex*, 1D. C. da Silva2, 2, R. Kazama1, 1, N. Gagnon1, C. Bencharr1, G. T. d. Santos2, 3, L. M. Zeoula2, 3, and H. V. Petit1, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Universidade Estadual de Maringa, Parana, Brazil, 3CNPq, Brazil.

W256  The effect of nonstructural carbohydrate and addition of full fat roasted canola seed on milk fatty acid composition in lactating cows. M. Sari, A. A. Naserian*, and R. Valizadeh, Ferdowsi University of Mashhad, Mashhad, Iran.

W257  Effect of coconut oil and lauric acid on ruminal protozoa and milk production and composition in dairy cows. A. Faciola* 1 and G. Broderick1, 1University of Wisconsin, Madison, 2U. S. Dairy Forage Research Center, Madison, WI.


W259  Assessment of whole Nutrasaff safflower seed as a fat supplement to lactating Holstein dairy cows. C. M. Dschaak*, 1J.-S. Eun1, A. J. Young1, and J. W. Bergman1, 1Utah State University, Logan, 2Safflower Technologies International, Sidney, MT.

W260  Effects of protected fat supplements on total tract digestion and plasma metabolites of early lactation Holstein cows. M. Ganjkhani lou* 1, K. Reza Yazdi1, G. R. Ghorbani1, M. Dehghan Banadaky1, H. Morraveg1, W. Z. Yang2, and A. Zali1, 1University of Tehran, Karaj-Tehran, Iran, 2Isfahan University of Technology, Isfahan, Iran, 3Lethbridge Research Centre, Lethbridge, AB, Canada.

W261  Effect of lipids source and supplementation frequency on ingesta digestibility of beef heifers grazing tropical grass. M. Cristina Araújo Santana1, T. Teresinha Berchielli1, R. Andrade Reis1, A. Vaz Pires2, G. Fiorenza1, 1Department of Animal Science, Federal University of Minas Gerais, Brazil, 2Animal Science Department, Federal University of Lavras, Brazil, 3Animal Science Department, Federal University of Jequitinhonha and Mucurury Valley, Brazil.

W262  Degree of dietary fatty acid saturation affects plasma glucose kinetics in growing beef steers. S. E. Cartiff*, V. Fellner, and J. H. Eisemann, North Carolina State University, Raleigh.

W263  Seminal characteristics in beef bulls supplemented with rumen bypass fat. H. O. Patino*, 1M. M. H. Ramirez2, J. C. C. Angel1, K. C. Swanson1, and R. M. Gregory1, 1Dep. Zootecnia, UFRGS, Porto Alegre, RS, Brazil, 2Dept. Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 3Faculdade Veterinaria, UFRGS, Porto Alegre, RS, Brazil.

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Metabolism

W264  Malate and fumarate enhanced CLA production and reduced methane emission by rumen microbes when incubated with linoleic acid. G. L. Jin1, X. Z. Li1, C. G. Yan1, R. J. Long1, and M. K. Song1, 1Department of Animal Science, Chungbuk National University, Cheongju, Chungbuk, Korea, 2Animal Science Department of Agriculture college, Yanbian University, Yanji, Jilin, China, 1International Centre for Tibetan Plateau Ecosystem Management, Lanzhou University, Lanzhou, Gansu, China.

W265  Phosphate inhibits in vitro ruminal aceticlastic methanogenesis of maize-rich substrates with lactating Holstein dairy cow rumen liquor. H. J. Yang*, 1, D. F. Zhang1, Y. C. Cao1, Y. H. Jiang1, and J. Q. Wang1, 1Department of Animal Nutrition and Feed Science, College of Animal Science and Technology, Beijing, P.R. China, 2State key Laboratory of Animal Nutrition, Beijing Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P. R. China.

W266  The effect of concentrate to forage ratios on methanogenes bacteria population in rumen fluid of Holstein steers determined by real-time PCR. A. R. Vakili*, M. Danesh Megsaran1, A. Heravi Moussavi1, D. R. Y. hiez Ruiz2, and C. J. Newbold1, 1Dept. of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran, 2Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK, 3Unidad de Nutrición Animal Estación Experimental del Zaidín (CSIC) Profesor Albareda, Spain.
W267 Microbial growth, methane production and fermentation of a high-concentrate diet in Rusitec fermenters as affected by dilution rate and concentrate retention time. M. E. Martínez, M. J. Ranilla*, S. Ramos, M. L. Tejido, C. Saro, and M. D. Carro, Departamento de Producción Animal, Universidad de León, León, Spain.

W268 Effect of diets supplemented by sucrose and/or starch on Ruminococcus albus populations in the rumen fluid of Holstein steers determined by real time-PCR. F. Rezaei, M. Danesh Mesgaran*, A. Vakili, A. Heravi Moussavi, and S. Ghovvati, Dpt. of Animal Science (Excellence Center for Animal Science), Ferdowsi University of Mashhad, Iran.

W269 Synergistic fibrolysis by cellulolytic Ruminococcus flavefaciens, Fibrobacter succinogenes, and non-cellulolytic Prevotella ruminicola and Prevotella bryanti: study in semi-defined cultures. J. Chiquette* and K. Lauzon, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

W270 Role of inulin as a modifier in rumen fermentation. H. D. Umucalıları, N. Gulsenı, A. Hayırlı*, and M. S. Alatası, 1Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey, 2Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Atatürk University, Erzurum, Turkey.

W271 Role of lactulose as a modifier in rumen fermentation. N. Gulsenı, H. D. Umucalıları, A. Hayırlı*, and O. B. Citiı, 1Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey, 2Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Atatürk University, Erzurum, Turkey.

W272 Lactic acid modulates DM degradation kinetics of barley grain in the rumen and decreases the risk of acidosis in dairy cows. S. Iqbal, Q. Zebei, A. Mazzolari, S. M. Dunn, and B. N. Ametaj, University of Alberta, Edmonton, AB, Canada.


W275 Deglycosylation of steroidal saponin to sapogenin by mixed rumen microbes and their enzymes. Y. Wang* and T. A. McAllister, Agriculture & Agri-Food Canada Research Centre, Lethbridge, AB, Canada.

W276 Starch fermentation kinetics in rumin fluid and synthesis of end products. J. W. Cone* and P. M. Becker2, 1Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Animal Sciences Group of War, Lelystad, the Netherlands.


W279 Mammary cell signaling responses to abomasal starch and casein infusions in lactating dairy cows. A. G. Rius**, J. Escobar, O. Becvar, D. Kirovski, and M. D. Hanigan, 1Dept. of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 2Dept. of Animal Science, Virginia Polytechnic Institute and State University, Blacksburg, 3College of Veterinary Medicine, Virginia Polytechnic Institute and State University, Blacksburg, 4Faculty of Veterinary Medicine, University of Belgrade, Belgrade, Serbia.

W280 Meta-analysis for the prediction of net portal absorption of amino acid nitrogen in ruminants. R. Martineau*, D. Sauvants, D. R. Ouellet, J. Vernet, I. Ortizgas-Marty, and H. Lahurières, 1Agriculture and Agri-Food Canada, Stn Lennoxville, Sherbrooke, QC, Canada, 2AgroParisTech INRA, Paris, France, 3INRA Clermont-Ferrand, Theix, 4St-Genés Champanelle, France.

W281 Acute fasting-induced changes in motilin, luteinizing hormone and metabolites in goat wethers. O. Gzaal, B. Kouakou*, W. Mboko, S. Bialka, and J. H. Lee, 1St. Cloud State University, St. Cloud, MN, 2Fort Valley State University, Fort Valley, GA.


W283 Plasma concentration of glucose-dependent insulinotropic polypeptide is negatively correlated with respiratory quotient in lactating dairy cows. A. E. Relling*, L. A. Crompton, S. C. Loerch, and C. K. Reynolds, 1The Ohio State University, Wooster, 2University of Reading, Reading, UK.

W284 Gluconeogenesis and carbon recycling in beef steers is modulated by energy-substrate supply. B. J. Bequette*, J. Sumner-Thomson, J. A. Moorefield, D. Hucht, M. Niland, and R. L. Baldwin VI, 1Department of Animal and Avian Sciences, University of Maryland, College Park, 2Bovine Genomic Laboratory, Animal and Nutrition Resources Institute USDA-ARS, Beltsville, MD.


W286 Plasma leptin, feed intake and body fat reserves in ruminants. An updated overview. E. González-García*, N. Debus, Y. Chilliard, and F. Bocquier, 1INRA, Montpellier, France, 2INRA, Theix, St-Genés-Champanelle, France.
Ruminant Nutrition
Vitamins and Minerals

W287 Variation of basal expression of a sodium-dependent phosphate transporter between sections of cattle small intestine. A. P. Foote*1, B. D. Lambert1,2, and J. A. Brady1, 1Tarleton State University, Stephenville, TX, 2Texas Agrilife Research, Stephenville.

W288 Insulin and essential amino acids have significant but independent effects on protein synthesis signaling in bovine mammary epithelial cells in-vitro. A. L. Bell*, J. A. D. R. N. Appuhamy, J. Escobar, and M. D. Hanigan, Virginia Polytechnic Institute and State University, Blacksburg.


Ruminant Nutrition
Experimental Methods

W288 The influence of feeding chelated trace minerals on dairy cattle performance and colostrum quality. A. Formigoni1, S. Emanuele*,1, C. Sniffen2, G. Biagi3, and M. Fustini, 1DIMORFIPA-University of Bologna, Bologna, Italy, 2Balchem, New Hampton, NY, 3Fencrest LLC, Plymouth, NH.

W289 Effect of zinc from zinc sulfate on trace mineral concentrations of milk in Varamini ewes. A. Zali and M. Ganjkhanlou*, University of Tehran, Tehran, Iran.


W291 Total mixed ration mineral content in California dairy farms. A. R. Castillo*, N. Silva del Rio1, and N. St-Pierre1, 1University of California, Tulare, 2The Ohio State University, Columbus.

W292 Effects of supplementation of beef cattle ration with rare earth elements on fermentation and digestion in batch culture. W. Z. Yang* and M. L. He, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.


Ruminant Nutrition
Experimental Methods


W297 Analysis of fiber from coarsely ground corn plant components within in situ dacron bags. L. J. Nuzback, W. M. Rutherford, and F. N. Owens*, Pioneer Hi-Bred International, Johnston, IA.

W298 Utilization of lignin extracted from different plant sources as standards in the spectrophotometric acetyl bromide lignin method. R. S. Fukushima*1 and M. S. Kerley2, 1Universidade de Sao Paulo, Pirassununga, Sao Paulo, Brazil, 2University of Missouri, Columbia.

W299 Degradation kinetics of N in rumen fluid determined with the gas production technique. J. W. Cone*1, P. M. Becker1, and M. A. M. Rodrigues1, 1Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Animal Sciences Group of WUR, Lelystad, the Netherlands, 3CECAV-UTAD, Vila Real, Portugal.

W300 Effect of pH and nonforage fibers on microbial fermentation and nutrient flow from a dual-flow continuous culture system. M. Sari, A. Ferret*, S. Calsamiglia, M. Blanch, and M. C. Fuentes, Universitat Autonoma de Barcelona, Bellaterra, Spain.


W305  Cloning of a bifunctional xylanolytic enzyme gene from Neocallimastix patriciarum. J.-R. Liu*1,2, C.-K. Pai3, Y.-F. Zeng3, C.-H. Duan4, and M.-L. Li1, 1Institute of Biotechnology, National Taiwan University, Taipei, Taiwan, Republic of China, 2Department of Animal Science and Technology, National Taiwan University, Taipei, Taiwan, Republic of China, 3Department of Life Science, National Taiwan Normal University, Taipei, Taiwan, Republic of China, 4Institute of BioAgricultural Sciences, Academia Sinica, Taipei, Taiwan, Republic of China.

W306  Validation of a system for monitoring rumination in dairy cows. K. Schirmann*1,2, M. A. G. von Keyserlingk1, D. M. Veira2, D. M. Weary2, and W. Heuwieser1, 1Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia, Vancouver, BC, Canada, 2Clinic for Animal Reproduction, Faculty of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany, 3Agriculture and Agri-Food Canada, Agassiz, BC, Canada.

W307  The accuracy and precision of the hand-held Precision Xtra™ meter for measuring β-hydroxybutyrate in whole blood from dairy cows. T. M. Kaiser, S. E. Stebulis*, and R. R. Grummer, University of Wisconsin, Madison.

W308  Re-evaluating the technique of estimating total internal fat using real-time ultrasound and carcass measurements in beef cattle. F. R. B. Ribeiro*1, L. O. Teodisci2, J. R. Stouffer1, and G. E. Carstens1, 1Texas A&M University, Commerce, 2Texas A&M University, College Station, 3Cornell University, Ithaca, NY.

W309  Determination of ruminal protein degradability kinetics of Soy Best® with and without soy gums using dynamic modeling and a single point in situ protein disappearance and simulations with the CPM Dairy nutrition model. L. O. Teodisci1, G. A. Holub1, W. Chalupa2, and C. A. Macgregor*1, 1Texas A&M University, College Station, 2University of Pennsylvania, Kennett Square, 3Grain States Soybean Inc., West Point, NE.

W310  Assessing the ability of the Cornell Net Carbohydrate and Protein System to predict fecal and urinary nitrogen excretion in lactating dairy cows. R. J. Higgs*, L. E. Chase, and M. E. Van Amburgh, Cornell University, Ithaca, NY.

Small Ruminant Growth, Carcass Traits, Meat Quality, Nutrition


W312  Effects of small ruminant species and origin in Ethiopia (Highland vs. Lowland areas) and lengths of rest and feeding on harvest measures. G. Abebe1, G. Kannan1, and A. L. Goetsch2, 1Ethiopia Sheep and Goat Productivity Program, Addis Ababa, Ethiopia, 2Agricultural Experiment Station, Fort Valley State University, Fort Valley, GA.

W313  Growth performance and carcass characteristics of goat kids fed diets containing sericea lespedeza. S. Solaiman*, J. Thomas, N. Gurung, Y. Duree, and C. Drake, Tuskegee University, Tuskegee, AL.

W314  Effects of level of barley and corn in concentrate diet fed to Boer kids on growth, meat quality and muscle fatty acid composition. M.-E. Brassard1, R. Gervais1, C. Gariépy2, P-Y. Chouinard1, and D. Cinq-Mars1, 1Université Laval, Québec, QC, Canada, 2Food Research and Development Centre, Saint-Hyacinthe, QC, Canada.

W315  Comparative postweaning growth among four groups of percentage Dorper and Katahdin wethers. W. R. Getz*, W. Kimble II, J. Mack, and T. Harris, Georgia Small Ruminant Research and Extension Center, Fort Valley State University, Fort Valley, GA.

W316  Body composition of growing meat and lactating dairy goats. A. T. Ngwa1, J. L. Dawson1,2, R. Puchala2, G. D. Detweiler2, R. C. Merkel3*, Z. Wang3, K. Tesfai1, T. Sahl1, C. L. Ferrell2, and A. L. Goetsch1, 1American Institute for Goat Research, Langston University, Langston, OK, 2College of Veterinary Medicine, Oklahoma State University, Stillwater, 3USDA, ARS, US Meat Animal Research Center, Clay Center, NE.

W317  Carcass traits of finishing lambs fed crude glycerin derived from biodiesel agro industry. J. F. Lage1, P. V. R. Paulino1,2, L. G. R. Pereira1, M. S. Duarte1, J. P. I. S. Monnerat1, E. Detmann1, N. K. P. Souza1, M. L. Chizzotti2, and S. C. Valadares Filho3, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2EMBRAPA – Semi–Árido, Petrolina, PE, Brazil.


Effect of shed type and supplementation on fatty acid profile in lamb tissues. M. A. Brown*, Y. S. Peng‡, and J. P. Wu‡, 1USDA-ARS, Grazinglands Research Laboratory, El Reno, OK; 2Gansu Agricultural University, Lanzhou, Gansu, PRC.

Fatty acid profile from the longissimus muscle of grazing Merino lambs with or without winter supplementation in Northern Patagonia. L. Villar*; E. Pavan*, C. Giraudo*, and F. Santini*, 1INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina; 2INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina; 3INTA-CIA Castelar, Hurlingham, Buenos Aires, Argentina.


The use of glycerin in lamb and ewe diets. M. Terré*, P. Casado*, M. Salas1, and A. Bach1, 1IRTA-Uniitat de Remugants, Barcelona, Spain; 2General de Piensos de Soria S.A., Soria, Spain; 3ICREA, Barcelona, Spain.


Voluntary intake of silage from corn hybrids harvested at two physiological stages. J. P. F. Silveira1, R. Belintani*2, V. L. Tierzo1, D. H. Vieira1, T. F. Silveira1, P. R. L. Meirelles1, L. F. D. Medeiros1, and C. Costa1, 1São Paulo State University, Botucatu, SP, Brazil; 2University of Agrarian Sciences - University of Marília, Marília, SP, Brazil; 3Center of Creation of Animals Laboratory, Rio de Janeiro, RJ, Brazil; 4Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.

Effect of corn hybrid and ensiling process on voluntary intake of lambs. J. P. F. Silveira1, R. Belintani*2, V. L. Tierzo1, P. R. L. Meirelles1, D. H. Vieira1, P. Persicchetti Junior1, C. Costa1, L. F. D. Medeiros1, and T. F. Silveira1, 1São Paulo State University, Botucatu, SP, Brazil; 2University of Agrarian Sciences - University of Marília, Marília, SP, Brazil; 3Center of Creation of Animals Laboratory, Rio de Janeiro, RJ, Brazil; 4Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.

Chemical composition, in vitro degradability, intake and digestibility of pigeon-pea (Cajanus cajan var. guerrero) and guinea-grass hay by goats. A. A. Rodriguez*, D. Carmona, L. González, E. Valencia, and P. Randel, University of Puerto Rico, Mayaguez, PR.

Effects of feeding peanut skins on growth performance and carcass traits of Kiko × Spanish growing male goat kids. A. Stone*; N. Gurung1, S. Solaiman1, D. Rankins Jr.1, G. Abdrahim2, and W. McElhenney1; 1Tuskegee University, Tuskegee, AL; 2Alabama A & M University, Normal, AL; 3Auburn University, Auburn, AL.

Effects of soybean small peptide on absorption of free amino acids and small peptide in lactating goats. L. Wang, Z.-J. Cao*, H. Liu, and S.-L. Li, College of Animal Science and Technology, China Agricultural University, Beijing, China.

Protein requirements of Boer crossbred kids. I. A. M. A. Teixeira*1, K. T. Resende1, J. M. Pereira Filho2, R. C. Canesin1, and T. T. Berchielli1; 1Universidade Estadual Paulista/Unesp, Jaboticabal, SP, Brazil; 2Universidade Federal de Campina Grande/UFCG, Patos, PB, Brazil.


Nitrogen balance and ruminal and blood metabolites of Saanen dairy goats infused abomasally with different levels and combination of starch and pectin. M. Sari, A. A. Naserian*, R. Valizadeh, and S. Salari, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran.

Efficiency of energy utilization by lactating Alpine goats. I. Tovar-Luna*; A. L. Goetsch1, R. Puchala1, T. Sahl1, and H. C. Freely1, 1American Institute for Goat Research, Langston University, Langston, OK; 2Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Aridas, Bermejillo, Dgo., México; 3USDA, ARS, US Meat Animal Research Center, Clay Center, NE.

Anti-obesity effect of ethanol extract of seed sprouts in porcine preadipocytes. M.-Y. Lee1, J.-J. Lee2, H.-J. Lee2, and S.-H. Oh*3, 1Department of Food and Nutrition, College of Natural Sciences, Chosun University, Gwangju, Chonnam, South Korea, 2Department of Nutrition and Culinary Science, Hankyong National University, Ansung, Gyeonggi, South Korea, 3Department of Animal Sciences, North Carolina A&T State University, Greensboro.


Variation in backfat depth and its relations to testicular hypertrophy and reproductive development in boars. D. O. Umesiobi*, Field of Animal Reproductive Physiology, School of Agriculture and Environmental Sciences, Central University of Technology, Bloemfontein, South Africa.

Performance of weanling pigs consuming varying levels of a genetically modified corn expressing an alpha-amylase. K. L. Price*1, A. F. Harper2, M. E. Persia2, and J. Escobar1, 1Animal & Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, 2Syngenta Biotechnology, Inc., Research Triangle Park, NC.

A survey of North American sow farm reproductive management. R. Knox*1, T. Safranski2, D. Levis3, and W. Singleton3, 1University of Illinois, Urbana, 2University of Missouri, Columbia, 3University of Nebraska, Concord, 4Purdue University, West Lafayette, IN.

Combined Acanthopanax senticosus extract and inulin improves growth performance, diarrhea and intestinal morphology in weaned piglets. X. Wu1, Y. Yin1, F. Yan1, X. Kong1, R. Huang1, T. Li1, and L. Chen1, 1Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China, 2Guang An Biotechnological Company, China.

Microarray analysis of genes in small intestine of IUGR piglets. R. Chen, Y. Yin*, J. Pan, Y. Gao, and X. Song, Key Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China.


Dietary requirement of true digestible lysine for growing pigs. Y. Zhang1,2, Y. Yin1, J. Li1, R. Huang1, and Y. Chen1,2, 1Key Laboratory of Subtropical Agro-ecology, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, The People's Republic of China, 2The Graduate University of Chinese Academy of Sciences, Beijing, The People's Republic of China.

Effect of diet enriched with rapeseed or sunflower oil on fatty acid profile of backfat and intramuscular fat in gilts. G. Battacone*, A. Nudda, M. G. Manca, C. Dimauro, and G. Pulina, Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy.

Mechanisms for transcellular transport of glucose in swine small intestine. M. Al-Rammahi*, A. Morani1, D. Batchelor1, E. Coulter1, N. Jones1, C. Ionescu1, D. Bravo2, and S. Shirazi-Beechey1, 1Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, 2Pancosma SA, Geneva, Switzerland.

Expression of sweet taste receptor, gustducin and carbohydrate responsive gut hormones in swine small intestine. M. Al-Rammahi*, A. Morani1, D. Batchelor1, E. Coulter1, N. Jones1, C. Ionescu1, D. Bravo2, and S. Shirazi-Beechey1, 1Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, 2Pancosma SA, Geneva, Switzerland.

Microbiological and molecular analysis of bacterial community by probiotic mixture in wearing pig in vivo intestinal models. Y. S. Kim1, Y. Kim2, K. Y. Whang3, S. H. Kim4, and S. Oh*1, 1Division of Animal Science, Chonnam National University, Gwangju, Korea, 2Department of Food Bioscience and Division of Biotechnology, Korea University, Seoul, Korea.

Administration of probiotics influences enterotoxigenic escherichia coli F4 attachment and expression of intestinal cytokines in weaned pigs. J.-F. Daudelin*1,2, M. Lessard1, F. Beaudoin2, N. Bissonnette2, E. Nadeau1, and J. M. Fairbrother1, 1Reference laboratory for E. coli (Ecl), Université de Montréal, St-Hyacinthe, Quebec, Canada, 2Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada.

Inclusion of live yeast S. cerevisiae boulardii (CNCM I-1079) in sow lactation diets: Effects on sows and nest performances. F. Mariella1, A. Agazzi1, G. Invernizzi2, G. Savoini*1, E. Chevaux2, and Y. Le Treut1, 1University of Milan Faculty of Veterinary Medicine, Milan, Italy, 2Lallemand S.A.S., Blagnac, France.

Consumer preferences for U.S. pork in urban China. D. Ortega*1, H. Wang1, and L. Wu2, 1Purdue University, West Lafayette, IN, 2China Agricultural University, Beijing, P. R. China.

Gastrointestinal morphology of pigs farrowed in indoor versus outdoor management systems and weaned into an indoor, off-site nursery. E. Davis*, C. V. Maxwell1, J. D. Spencer2, R. L. Moser3, J. Rehberger1, and T. Rehberger1, 1Agtech Products, Inc., Waukesha, WI, 2University of Arkansas, Fayetteville, 3BS United, Inc., Sheridan, IN.

The effect of a Bacillus based direct fed microbial on the microbiota of grow-finish pigs. J. Rehberger*, E. Davis1, C. V. Maxwell2, and T. Rehberger1, 1Atech Products, Inc., Waukesha, WI, 2Department of Animal Science, University of Arkansas, Fayetteville.


Effects of supplementing piglets post-weaning with an oral rehydration solution or lactic acid on growth and performance. L. Seefeldt*, S. I. Kehoe, and G. Onan, University of Wisconsin, River Falls.


SYMPOSIA AND ORAL SESSIONS

Animal Behavior and Well-Being
Behavior-Nutrition Interaction
Chair: Ted Friend, Texas A&M University

10:30 AM 504 Behavior-nutrition interaction in goats. A. L. Goetsch*, T. A. Gipson1, and A. R. Askar2, 1American Institute for Goat Research, Langston University, Langston, OK, 2Animal and Poultry Nutrition Department, Desert Research Center, Cairo, Egypt.

11:00 AM 505 Selection of tannins by sheep in response to gastro-intestinal nematode infections. J. J. Villalba*, F. D. Provenza1, J. O. Hall2, and L. D. Lisonbee1, 1Utah State University, Department of Wildland Resources, Logan, 2Utah State University, Department of Animal, Dairy and Veterinary Sciences, Logan.

11:15 AM 506 Feed volatile compounds affect lambs and ewes palatability. T. Rapisarda1, A. Mereu2, A. Cannas2, V. Giovannetti3, S. Carpino*1, and G. Licitra1,4, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2Dipartimento di Scienze Zootecniche, University of Sassari, Italy, 3Agris Sardega, DRPA, Olmedo, Italy, 4D.A.C.P.A. University of Catania, Italy.

11:30 AM 507 Behavior-nutrition interactions in horses. D. Sigler*, Department of Animal Science, Texas A&M University, College Station.

12:00 PM 508 Effects of Protimax® and Betaine feed supplements on activity in dairy calves. S. C. Tutt*, G. Holub, T. H. Friend, S. M. Garey, and J. E. Sawyer, Texas A&M University, College Station.

12:15 PM 509 Effect of feeding method on the learning of feeding behavior in dairy heifers. A. M. Greter*, K. E. Leslie2, G. J. Mason1, B. W. McBride1, and T. J. DeVries1, 1Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, 2Department of Population Medicine, Ontario Veterinary College, Guelph, ON, Canada, 3Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

SYMPOSIUM

ASAS-ADSA Graduate Student Symposium
Decisions, Decisions, Decisions: How to make informed decisions on your future career opportunities to developing a successful research program.
Chair: Amy E. Radunz, The Ohio State University
Sponsors: ASAS and ADSA

10:30 AM 510 Extension employment opportunities following the completion of a M.S. degree in animal science. G. P. Lardy*, North Dakota State University, Fargo.


11:10 AM 512 Unique and non-traditional opportunities with an advance degree in animal science. J. L. Garrett*, JG Consulting Services, Dowling, MI.

11:30 AM Panel discussion
### 11:40 AM 513
Should I go get a Ph.D. and if so, is a post-doc warranted? M. Hogberg*, Iowa State University, Ames.

### 12:00 PM 514
Developing a competitive research program and securing tenure as a new faculty hire. B. W. Hess*, University of Wyoming, Laramie.

### 12:20 PM
Panel discussion

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### Breeding and Genetics
**Beef Cattle & Sheep Breeding**
**Chair: Janice M. Rumph, Michigan State University**

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<td>10:30 AM</td>
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<tr>
<td>Genotype by region and season interactions for postweaning gain in beef cattle. J. L. Williams*, M. Lukaszewicz, I. Misztal, and J. K. Bertrand, University of Georgia, Athens, Georgia, Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Jastrzebiec, Poland.</td>
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### Dairy Foods
**Dairy Foods/Microbiology**
**Chair: James Steele, University of Wisconsin**

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<td>10:30 AM</td>
<td>522</td>
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<tr>
<td>Molecular and technological characterization of lactic acid bacteria isolated from the Egyptian white pickled cheese. M. El Soda*, M. Mohammed, S. Anwar, and S. Awad, Department of Dairy Science, Faculty of Agriculture, Alexandria University, Alexandria, Egypt.</td>
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<td>10:45 AM</td>
<td>523</td>
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<tr>
<td>Physiological and transcriptional response of Lactobacillus casei ATCC 334 to acid stress. R. Thompson*, V. Deibel, J. Steele, and J. Broadbent, Utah State University, Logan, University of Wisconsin, Madison, TracMicro, Madison, WI.</td>
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<td>11:00 AM</td>
<td>64</td>
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<tr>
<td>Growth of Lactobacillus casei at 8°C in Cheddar cheese extract requires supplementation. W. S. Tan*, M. F. Budinich, R. Ward, J. R. Broadbent, and J. L. Steele, University of Wisconsin, Madison, Utah State University, Logan.</td>
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<td>CpG oligodeoxynucleotide from Streptococcus thermophilus regulates anti-inflammatory responses. T. Shimosato*, M. Tohno, T. Sato, and H. Kitazawa, Shinshu University, Kami, Nagano, Japan, Tohoku University, Sendai, Miyagi, Japan, Yokohama City University, Yokohama, Kanagawa, Japan.</td>
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Survival of probiotic adjunct cultures added to low-fat, reduced-fat, and full fat cheddar cheese. C. J. Oberg*1, L. Moyes*1, C. Brothersen1, and D. J. McMahon2, 1Microbiology Department, Weber State University, Ogden, UT, 2Western Dairy Center, Utah State University, Logan.

Intrinsic resistance and stress responses to hydrogen peroxide in bifidobacteria. T. S. Oberg*1, S. C. Ingham2, J. L. Steele3, and J. R. Broadbent1, 1Utah State University, Logan, 2University of Wisconsin, Madison.

Cholesterol removing ability and bile tolerance of lactic acid bacteria isolated from fermented yak milk. Y. Jiao1, L. Zhang*1, and H. Yi2, 1Heilongjiang University of Chinese Medicine, Harbin, China, 2College of Food science and engineering, Harbin Institute of Technology, Harbin, China.

Factors affecting the total bacteria count of raw milk preserved with azidiol (liquid or tablet) and bronopol. M. O. Leite*1,2, N. J. Andrade2, M. M. O. Cerqueira1,2, L. M. Fonseca1,2, and R. Rodrigues1,2, 1Federal University of Minas Gerais (UFMG), School of Veterinary Medicine, Department of Food Technology and Inspection, Belo Horizonte, MG, Brazil, 2Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 3Federal University of Viçosa, Viçosa, MG, Brazil.

Extension Education
Chair: Lane Ely, University of Georgia
511be

A diagnostic tool to assess calf welfare and management on-farm. E. Vasseur*1, J. Rushen2, A. M. de Passillè3, D. Lefebvre4, G. Fecteau4, and D. Pellerin1, 1Université Laval, Quebec city, Quebec, Canada, 2Pacific Agri-Food Research Centre, Agriculture and Agri-Food Canada, Agassiz, British Columbia, Canada, 3Valacta, Dairy Production Centre of Expertise Quebec-Atlantic, Sainte-Anne-de-Bellevue, Quebec, Canada, 4Veterinary Faculty, Université de Montréal, Sainte-Hyacinte, Quebec, Canada.

Expanding use of high accuracy AI sires in Missouri beef cattle enterprises. D. C. Busch*, N. R. Leitman, D. A. Mallory, J. F. Bader, D. J. Wilson, S. E. Poock, M. F. Smith, J. L. Parcell, and D. J. Patterson, University of Missouri, Columbia.

On-line access to the Cattle Producer’s Library for disseminating beef cattle educational information. J. C. Whittier1, J. W. Oltjen*1, J. A. Paterson1, D. R. Zobell1, and Western Beef Resource Committee1, 1Colorado State University, Fort Collins, 2University of California, Davis, 3Montana State University, Bozeman, 4Utah State University, Logan, 5WBRC, 12 Western USA States.

Using audience response software in equine extension programs. K. Martinson*, University of Minnesota, St. Paul.

Partnering with outside entities to broaden extension’s reach: Theory, practice, challenges, implications, and impact. E. A. Greene*1, R. E. Greene1, and R. L. Parsons1, 1University of Vermont, Burlington, 2Kleine Lelli Consulting, Wayland.

Maximizing reach via the internet while providing tools for information dissemination in traditional extension environments. E. A. Greene*1, A. S. Griffin1, K. P. Anderson1, and C. D. Skelly1, 1University of Vermont, Burlington, 2University of Kentucky, Lexington, 3University of Nebraska, Lincoln, 4Michigan State University, Lansing.

Growth and Development
Fetal Development
Chair: Tom Welsh, Texas A&M University
511cf

Inadequate protein levels during gestation in gilts affect gestation body mass and fatness as well as offspring birth weight and insulin sensitivity at 10 wk of age. C.C. Metges*, I.S. Lang, S. Goers, P. Junghans, U. Hennig, B. Stabenow, F. Schneider, W. Otten, and C. Rehfeldt, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf,MV,Germany.


Metabolic maturity at birth and neonatal lamb survival and growth. I. The effects of maternal low dose dexamethasone treatment at two time points in late gestation. D. R. Miller*, R. B. Jackson1, D. Blache2, and J. R. Roche1, 1Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia, 2University of Western Australia, Perth, WA, Australia.

Metabolic maturity at birth and neonatal lamb survival and growth. II. Association among maternal factors, litter type, lamb birth weight, plasma metabolic and endocrine factors, lamb survival and behavior. D. R. Miller*, D. Blache2, R. B. Jackson1, E. Downie1, and J. R. Roche1, 1Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia, 2University of Western Australia, Perth, WA, Australia.
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<td>11:30 AM</td>
<td>540</td>
<td>Maternal over-nutrition induces inflammatory response in large intestine of fetal sheep in late gestation. X. Yan*1, M. Du1, B. W. Hess1, S. P. Ford1, P. W. Nathanielsz1,2, and M. J. Zhu1, 1University of Wyoming, Laramie, 2University of Texas Health Sciences Center, San Antonio.</td>
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<td>11:45 AM</td>
<td>541</td>
<td>An in vivo comparison of muscles formed from broiler and layer chick somites. P. E. Mozdzia*1, D. Hodgson, and J. N. Petitte, Department of Poultry Science, North Carolina State University, Raleigh.</td>
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**SYMPOSIUM**

**International Animal Agriculture**

**ASAS-EAAP Global Issues**

**Chair:** Melvin Yokoyama, Michigan State University

**Sponsors:** ASAS, AMPA, and EAAP

10:30 AM 510bd

**Introduction:** The impact of dynamic economic and environmental changes on livestock sectors in developing countries. M. Yokoyama.

10:40 AM 542


11:10 AM 543

Adaptation of the livestock sector to global climate change: Opportunities and options for animal genetic resources and management systems in developing countries. S. Fernandez-Rivera*, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Mexico City, D.F., Mexico.

11:40 AM 544

The role for animal genetic resources under global climate change conditions and rapid development of the livestock sector. I. Hoffmann*, FAO, Rome, Italy.

12:10 PM 545

The impact of global climate change, utilization of genetic resource management and livestock sector development on nutrition and health in developing countries. Y. Plante*1 and H. Blackburn2, 1United States Department of Agriculture, Fort Collins, CO.

**Lactation Biology 2**

**Chair:** Darryl Hadsell, Baylor College of Medicine

512ae

10:30 AM 546


10:45 AM 547

Effect of the milking-induced prolactin release on galactopoiesis in dairy cows. V. Lollivier*1, R. M. Bruckmaier2, P. Lacasse3, and M. Boutinaud1, 1INRA, AGROCAMPUS OUEST, UMR1080, St. Gilles, France, 2University of Bern, Bern, Switzerland, 3AAFC, Dairy and Swine R&D Centre, Sherbrooke, Canada.

11:00 AM 548


11:15 AM 549

Effects of reduced frequency of milk removal on gene expression in the bovine mammary gland. M. Littlejohn*1, C. Walker1, H. Ward1, K. Lehnert1, R. Snell1, G. Verkerk1, R. Spelman1, D. Clark1, and S. Davis1, 1DairyNZ Ltd, Hamilton, New Zealand, 2VitaLactia Biosciences Ltd, Auckland, New Zealand, 3Livestock Improvement Corporation, Hamilton, New Zealand.

11:30 AM 550

The ability of exogenous growth hormone to maintain milk production during prolonged lactation in the mouse is more evident with reduced nursing frequency. D. L. Hadsell*1, W. Olea1, A. F. Parlow2, and R. J. Collier1, 1Baylor College of Medicine, Houston, TX, 2Harbor-UCLA Medical Center, Torrance, CA, 3The University of Arizona, Tucson.

11:45 AM 551


12:00 PM 552

Fluoxetine and phenelzine disrupt tight junctions in primary bovine mammary epithelial cells. L. L. Hernandez*1, R. J. Collier1, and N. D. Horsemann1, 1University of Cincinnati, Cincinnati, OH, 2University of Arizona, Tucson.

12:15 PM 553

Nonruminant Nutrition
Minerals and Vitamins
Chair: Gretchen Hill, Michigan State University

10:30 AM 554  Effects of phytase supplementation on apparent and standardized total tract digestibility of P in corn, soybean meal, and distillers dried grains with solubles (DDGS) fed to growing pigs. F. N. Almeida*, and H. H. Stein, University of Illinois, Urbana.

10:45 AM 555  Determination of the stability of Zn, Mn, Cu and Fe glycinites in aqueous solution by electrospray QqTOF mass spectrometry. S. Oguey*1, V. Vacchina2, R. Lobinski3, and D. Bravo1, 1Pancosma, Geneva, Switzerland, 2UT2A, Pau, France, 3CNRS, Pau, France.

11:00 AM 556  Analysis of Zn, Mn, Cu and Fe glycinites by size-exclusion liquid chromatography coupled to an inductively coupled plasma mass spectrometry detection. S. Oguey*1, V. Vacchina2, R. Lobinski3, and D. Bravo1, 1Pancosma, Geneva, Switzerland, 2UT2A, Pau, France, 3CNRS, Pau, France.

11:15 AM 557  Femurs are more accurate than fibulas as predictors of whole body bone mineral content in growing pigs. T. D. Crenshaw*, L. E. Huffman, J. R. Danielson, and D. K. Schneider, University of Wisconsin, Madison.

11:30 AM 226  Calcium chloride and sodium nitrate as nutritional means to overcome the reduction in performance of pigs fed high potassium diets. J. Guimaraes*, D. Wey, C. Zhu, and C. F. M de Lange, University of Guelph, Guelph, Ontario, Canada.

11:45 AM 558  Effect of supplemented mined humate on growth, loin quality, and pathological status of liver and kidneys in pigs. C. M. Ballou*, Y. Zhao, Y. B. Kim, A. C. Chaytor, and S. W. Kim, North Carolina State University, Raleigh.

12:00 PM 559  Effects of EcoCare® Feed on mineral excretion of pigs during the finishing phase. T. Walraven*, S. Carter, M. Lachmann1, J. Bundy1, and B. De Rodas2, 1Colorado State University, Fort Collins, 2University of Idaho, Moscow.


SYMPOSIUM
Physiology and Endocrinology
Impact of Gonadal Steroids on Brain Development and Function
Chair: Fredrick Stormshak, Oregon State University


10:45 AM 561  Feedback and fitness: Consequences of non-classical estrogen receptor α signaling in the brain. J. E. Levine*, Northwestern University, Evanston, IL.

11:25 AM 562  Nongenomic actions of estrogens directly on the ovine pituitary facilitates LH secretion. T. Nett*, A. Arevalo-Arreguin1, and T. Davis2, 1Colorado State University, Fort Collins, 2University of Idaho, Moscow.

12:05 PM 563  Actions of androgens in regulating sexual differentiation of the sheep brain and consequent effects on sexual behavior. C. E. Roselli*1,2 and F. Stormshak1, 1Oregon Health and Science University, Portland, 2Oregon State University, Corvallis.

Production, Management and the Environment
General
Chair: Geoff Dahl, University of Florida

Clinical stopping rules in sequential field trials. D. B. Nielsen* and C. Enevoldsen, Faculty of Life Sciences, Department of Large Animal Clinical Sciences, University of Copenhagen, Denmark.

Modeling cow body shape for objective estimation of body condition score from digital images. G. Azzaro1, M. Caccamo*2, J. D. Ferguson3, S. Battiato4, G. M. Farinella5, G. C. Guarnera6, G. Puglisi7, and G. Licitra1,4, 1CIFN-loC, Regione Siciliana, Ragusa, Italy, 2University of Pennsylvania, Kennett Square, 3IPLAB, University of Catania, Italy, 4D.A.C.P.A., University of Catania, Italy.

Effects of calf bedding acidification on microbial content and fly larvae density. M. S. Calvo*, T. L. Armitage, Y. E. Pan, A. Gerry, J. McGarvey, and F. M. Mitloehner, University of California, Davis.


Nutritional value of fresh cocoa husk mucilage as a sole feed for African giant land snail (Archachatina marginata). R. A. Hamzat* and J. Babayemi, 1Ochaja Research Station, Cocoa Research Institute of Nigeria, Egunm, Kogi State, Nigeria, 2Department of Animal Science, University of Ibadan, Ibadan, Oyo State, Nigeria.

Acclimation to salinity and survival of Lahontan cutthroat trout Oncorhynchus clarki henshawi. J. P. Bigelow*1,2, W. M. Rauw3, and L. Gomez-Raya4, 1U.S. Fish and Wildlife Service, Lahontan National Fish Hatchery Complex, Reno, NV, 2University of Nevada, Reno.

**Ruminant Nutrition**

**Dairy Calves**

Chair: JoAnne Knapp, Fox Hollow Consulting, LLC

Sponsor: Intervet/Schering-Plough Animal Health

516ab


Effects of free-access feeding and milk replacer acidification on calf performance and development of digestive anatomy. C. G. Todd*1, T. J. DeVries2, K. E. Leslie1, J. M. Sargeant1, N. G. Anderson1, and S. T. Millman2, 1Department of Population Medicine, University of Guelph, Guelph, ON, Canada, 2Department of Animal Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada.


Effects of weaning strategy on calf performance and health status during transition. A. Bach*1,2, A. Ferrer2, and J. Ahedo1, 1ICREA, Barcelona, Spain, 2Ruminant Production-IRTA, Caldes de Montbui, Spain, 3Rancho Las Nieves, Mallen, Spain.

Determination of oro-sensorial preferences for energy ingredients in weaned calves. C. Montoro*1, F. Boe1, I. Ipharraguerre2, and A. Bach1,2, 1IRTA-Ruminant Production, Caldes de Montbui, Spain, 2LUCTA S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.

High dietary iron negatively impacts gene products important in iron and manganese metabolism in young calves. S. L. Hansen*, M. S. Ashwell, R. S. Fry, and J. W. Spears, North Carolina State University, Raleigh.

516c

Metagenomics analysis reveals shifts in functional profiles and population dynamics of rumen microbial communities in response to developmental and dietary changes. R. W. Li*, M. E. Sparks2, Y. Huang3, W. Li1, E. E. Connor1, R. L. Baldwin VI1, C. Li1, and T. Sonstegard2, 1United States Department of Agriculture, Agricultural Research Service, Bovine Functional Genomics Laboratory, Beltsville, MD, 2University of California, San Diego.
pH dynamics and bacterial community composition in the rumen of lactating dairy cows. A. Palmonari*, 1, D. M. Stevenson, 1, D. R. Mertens, 2, C. W. Cruywagen, 1, and P. J. Weimer, 1, 1DIMORFIPA, University of Bologna, Bologna, Italy, 2USDA-ARS-U.S. Dairy Forage Research Center, Madison, WI, 1Department of Animal Science, University of Stellenbosch, Stellenbosch, Republic of South Africa.

Effect of supplemental carbohydrate source and level on in vitro gas production estimates. A. Britos*, 1, N. Pomié, 1, J. L. Repetto, 2, and C. Cajarville, 1, 1Department of Animal Nutrition, Faculty of Veterinary, UdelaR, Montevideo, Uruguay, 2Department of Bovines, Faculty of Veterinary, UdelaR, Montevideo, Uruguay.

Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed varying dietary protein concentrations. D. Kiran* and T. Mutsvangwa, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

Differential chemotaxis by entodiniomorphids and isotrichids toward glucose after incubation with emulsified polyunsaturated fatty acids. H. L. Diaz*, 1, A. M. Stalford, K. N. Barr, and J. L. Firkins, The Ohio State University, Department of Animal Sciences, Columbus.

From Redox potential field measurement to its bioenergetic meaning in the rumen. J. P. Marden*, 1, 2 E. Ungerfeld, 1, R. A. Kohn, 3, C. Julien, 1, E. Auclair, 2, R. Moncoulon, 1, and C. Bayourthe, 1, 1Université de Toulouse, INRA, Castanet-Tolosan, France, 2Lesaffre Feed Additives, Marquette-Lez-Lille, France, 3Agriculture and Agri-Food Canada, Lethbridge, Canada, 4University of Maryland, College Park.

**Ruminant Nutrition 2**

Chair: Cathy Bandyk, Quality Liquid Feeds

Pharmacological amounts of nicotinic acid can reduce isoproterenol-stimulated lipolysis in cattle, but also reduce feed intake. K. S. Spivey, E. C. Titgemeyer*, and B. J. Bradford, Kansas State University, Manhattan.

Effects of niacin infusion on transcript and protein abundance of the niacin receptor GPR109A in bovine mammary tissue. B. J. Bradford*, L. K. Mamedova, K. S. Spivey, and E. C. Titgemeyer, Kansas State University, Manhattan.


Effects of low vitamin A and D and their meaning in the rumen. J. P. Marden*, 1, 2 E. Ungerfeld, 1, R. A. Kohn, 3, C. Julien, 1, E. Auclair, 2, R. Moncoulon, 1, and C. Bayourthe, 1, 1Université de Toulouse, INRA, Castanet-Tolosan, France, 2Lesaffre Feed Additives, Marquette-Lez-Lille, France, 3Agriculture and Agri-Food Canada, Lethbridge, Canada, 4University of Maryland, College Park.

In vitro evaluation of four bacterial species as potential probiotics in the rumen. T. W. Priambodo, J. Hummel, S. Kehraus, and K.-H. Südekum*, University of Bonn, Bonn, Germany.

Feeding behaviour of wethers fed a temperate pasture with different time of access to food and supplemented or not with additives. A. Pérez-Ruchel*, 1, L. J. Repetto*, 2, M. Michelini, 1, L. Pérez, 1, G. Soldini, 1, and C. Cajarville, 1, 1Departamento de Nutrición Animal, Facultad de Veterinaria, Montevideo, Uruguay, 2Departamento de Bovinos, Facultad de Veterinaria, Montevideo, Uruguay.

Impact of feed waste on the nutrition and economics of wintering beef cows. B. J. Yaremcio*, 1, E. K. Okine, 3, M. Oba, 3, and D. McCartney, 1, 1Alberta Agriculture and Rural Development, Canada, 2University of Alberta, Canada, 3Agriculture and Agri-Food Canada, Canada.

**Small Ruminant Nutrition**

Chair: Ken Andries, Kentucky State University


Effect of yeast (Saccharomyces cerevisiae) culture supplementation to medium-quality hay on nutrient digestibilities by goats of two different body sizes. D. V. G. Krishna Mohan*, J. Hummel, 1, and K.-H. Südekum*, 1Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh, India, 2University of Bonn, Bonn, Germany.
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<td>11:00 AM</td>
<td>Performance of lambs fed ensiled orange pulp treated with exogenous enzymes. H. Gado*, A. Z. M. Salem²,³, H. Alisersy⁴, B. E. Borhami⁴, and M. El-Adawy⁴, ¹Faculty of Agriculture, Ain Shams University, Egypt, ²Faculty of Agriculture, Alexandria University, Egypt, ³Animal Production ARC, Ministry of Agriculture, Egypt, ⁴Universidad Autónoma del Estado de México, Centro Universitario UAEM, Temascaltepec, México.</td>
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<tr>
<td>11:30 AM</td>
<td>The effects of replacing dried citrus pulp with barley grain on the performance of Iranian Saanen kids. A. Naserian*, M. Mahdi Sargolzehi, and H. Gholizadeh, Ferdowsi University of Mashhad, Mashhad/ Khorasan Razavi Province, Iran.</td>
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<tr>
<td>12:00 PM</td>
<td>Evaluation of performance predictions of the Small Ruminant Nutrition System model using growth and body composition data of South African Mutton Merino and Dorper. A. Cannas*, A. Linsky², L. J. Erasmus², L. O. Tedeschi³, W. A. van Niekerk³, and R. Coertze³, ¹Department of Animal and Wildlife Sciences, University of Pretoria, Pretoria, South Africa, ²Department of Animal Science, Texas A&amp;M University, College Station.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Factors affecting dietary intake and colostrum production in ewes. A. G. Fahey*, T. F. Crosby, and T. M. Boland, School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.</td>
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</table>

**OTHER EVENTS**

**Mixed Models**

**SYMPOSIUM AND ORAL SESSIONS**

**SYMPOSIUM**

ADSA Production Division Symposium
Driving Forces in the Dairy Industry That Will Change Dairy Farm Management
Chair: John Vicini, Monsanto 524

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>Introduction. Karen Plaut (Michigan State University) and Tony Capuco (USDA).</td>
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<tr>
<td>2:05 PM</td>
<td>The dairy scientist’s role in re-connecting the dairy food-chain. K. Murphy*, Food-Chain Communications, Lee’s Summit, MO.</td>
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<tr>
<td>2:45 PM</td>
<td>The welfare of dairy cattle: Problems and solutions for the coming decade. M. A. G. von Keyserlingk*, R. Rushen¹, A. M. de Passillé², and D. M. Weary¹, ¹University of British Columbia, Vancouver, BC, Canada, ²Agriculture and Agri-Food Canada, Agassiz, BC, Canada.</td>
</tr>
<tr>
<td>3:25 PM</td>
<td>Break</td>
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<td>3:40 PM</td>
<td>Accelerating genetic improvement with SNP chips and DNA sequencing. C. P. Van Tassell*, P. M. VanRaden¹, G. R. Wiggans¹, L. K. Matukumalli², S. Schroeder¹, J. O’Connell¹, R. D. Schnabel¹, J. F. Taylor¹, E. J. Pollak¹, M. Munson², D. Bailey¹, and T. S. Sonstegard¹, ¹USDA-ARS, Beltsville, MD, ²George Mason University, Manassas, VA, ³University of Maryland School of Medicine, Baltimore, ⁴University of Missouri, Columbia, ⁵Cornell University, Ithaca, NY, ⁶Illumina, Inc., San Diego, CA.</td>
</tr>
<tr>
<td>4:20 PM</td>
<td>Affects of climate change and environmental regulation on management of dairy farms. W. Powers* and D. Meyer¹, ¹Michigan State University, East Lansing, ²University of California, Davis.</td>
</tr>
</tbody>
</table>
Animal Health
Calf Health, Respiratory Disease, etc.
Chair: Isis Mullarky, Virginia Polytechnic Institute and State University
511cf


2:15 PM 602 Assessment of the health status of newborn dairy replacement and veal calves. K. Waalderbos*, K. Leslie†, T. Duffield†, T. DeVries†, and B. McBride†, 1Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, 2Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.


3:00 PM 605 Associations between herd risk of high precalving NEFA and management, feed additive, and facility factors. T. F. Duffield*, M. Carson†, M. Capel‡, S. Godden‡, M. Overton‡, J. Santos‡, and S. J. LeBlanc‡, 1University of Guelph, Guelph, ON, Canada, 2University of Minnesota, Minneapolis, 3University of Georgia, Athens, 4University of Florida, Gainesville, 5Perry Veterinary Clinic, Perry, NY.

3:15 PM 606 Associations between herd risk of high precalving NEFA and dietary factors. T. F. Duffield*, M. Carson†, M. Capel‡, S. Godden‡, M. Overton‡, J. Santos‡, and S. J. LeBlanc‡, 1University of Guelph, Guelph, ON, Canada, 2University of Minnesota, Minneapolis, 3University of Georgia, Athens, 4University of Florida, Gainesville, 5Perry Veterinary Clinic, Perry, NY.


3:45 PM 608 Intrapulmonary Mannheimia haemolytica (MH) challenge increases nitrooxidative stress (NOxS) in heifers phenotypically selected for tumor necrosis factor-α (TNF-α) hyper-responsiveness. T. Elsasser*†, J. Goff‡, R. Briggs‡, S. Kahl†, H. Lehmkühl†, M. Ackerman†, C. Li‡, and R. Horst†, 1USDA-ARS, Beltsville, MD, 2USDA-ARS, Ames, IA, 3Iowa State University, Ames.


4:30 PM 611 Evaluation of enzymatically hydrolyzed yeast in vitro and in vivo for control of Cryptosporidium parvum infections in dairy calves. S. Jalukar*† and J. Nocek‡, 1Varied Industries Corporation, Mason City, IA, 2Spruce Haven Farm and Research Center, Auburn, NY.

4:45 PM 612 Neem-tree extract as a feed-additive against ticks in sheep. S. Y. Landau*, D. R. Gardner‡, J. A. Pfister‡, E. L. Knoppe‡, D. Kabaña‡, F. D. Provenza‡, C. Peterson‡, and J. J. Villalba‡, 1Agricultural Research Organization, Bet Dagan, Israel, 2SDA-ARS Poisonous Plant Research Laboratory, Logan, UT, 3Utah State University, Logan.

Beef Species
Health, Efficiency and Beef Quality
Chair: Ryon Walker, University of Minnesota
519

2:00 PM 613 mRNA expression of genes regulating oxidative phosphorylation in the muscle of beef cattle divergently ranked on residual feed intake. A. K. Kelly‡*, S. M. Waters‡, M. McGee‡, C. Carberry‡, D. H. Crews Jr‡, T. M. Boland‡, and D. A. Kenny‡, 1School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, 2Animal Bioscience Centre, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 3Colorado State University, Fort Collins.
2:15 PM 614 Relationship between metabolic hormones, metabolites and energetic efficiency in growing beef heifers. A. K. Kelly*, 1, M. McGee2, D. H. Crews Jr.3, T. M. Boland4, and D. A. Kenny5, 1School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, 2Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 3Colorado State University, Fort Collins.

2:30 PM 615 Predicting body weight in beef heifers using various body measurements. A. G. Fahey*, A. K. Kelly, R. P. McDonnell, and D. A. Kenny, School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

2:45 PM 616 Effect of residual feed intake on body composition traits in growing beef heifers. A. K. Kelly*1, M. McGee2, T. M. Boland3, D. H. Crews Jr.4, and D. A. Kenny4, 1School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, 2Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 3Colorado State University, Fort Collins.

3:00 PM 617 The immune response of heifers divergently ranked for residual feed intake. A. G. Fahey*1, B. Earley2, A. K. Kelly1, M. McGee1, and D. A. Kenny1, 1School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, 2Teagasc, Animal Bioscience Centre, Dunsany, Co. Meath, Ireland, 3Teagasc, Grange Beef Research Centre, Co. Meath, Ireland.

3:15 PM 618 Rubber mats improve finishing beef cattle welfare. M. R. Elmore*, M. F. Elischer, M. C. Claeys, and E. A. Pajor, Purdue University, West Lafayette, IN.

3:30 PM Break


4:00 PM 620 Effects of growing phase diet on fatty acid profile of beef steers. K. E. Hudelson*, C. R. Krehbiel, G. W. Horn, J. W. Dillwith, M. P. McCurdy, R. D. Madden, and R. G. Mateescu, Oklahoma State University, Stillwater.


4:30 PM 622 Fatty acid profile in beef meat and baby food based on beef meat. A. Nudda*, G. Battacone1, R. Boe1, M. G. Manca1, M. Mele1, A. Serra1, and G. Pulina1*, 1Dipartimento di Scienze Zootecniche, University of Sassari, Italy, 2Dipartimento di Agronomia e Gestione dell’Agroecosistema, University of Pisa, Italy, 3Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.

**Breeding and Genetics**
**Breeding and Genetics Workshop**
Chair: Ron Lewis, Virginia Tech

2:00 PM 624 Recent developments in genetic evaluation tools. D. Garrick*, Iowa State University, Ames.

3:00 PM 623 Solving a dilemma in graduate education: Animal Breeding and Genetics Online. R. M. Lewis*, B. B. Lockee1, M. S. Ames1, G. C. Márquez1, R. M. Enns2, J. M. Rumph3, T. W. Wilkinson1, and E. J. Pollak4, 1Virginia Tech, Blacksburg, VA, USA, 2Colorado State University, Fort Collins, CO, USA, 3Michigan State University, Lake City, MI, USA, 4Cornell University, Ithaca, NY, USA.

4:00 PM Discussion/Q & A

**Breeding and Genetics**
**Molecular Genetics II**
Chair: Cathy Ernst, Michigan State University

2:00 PM 625 Development and validation of SNP markers comprising the IGENITY profile for carcass traits and ADG in beef cattle. B. W. Woodward* and J. D. Nkrumah, Merial Ltd., Duluth, GA.

Whole genome candidate gene approaches to identifying gene SNP markers influencing fat deposition and carcass merit in beef cattle. C. Li1,2, M. Vinsky1, R. Crews2, E. Okine3, S. S. Moore4, and D. H. Crews Jr.,1,3, 1Agriculture and Agri-food Canada, Lacombe Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada; 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada; 3Agriculture and Agri-food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada, 4Colorado State University, Fort Collins.


Reproductive responses of dairy cows to supplemental fat. J. D. Ferguson*, D. W. Remsburg5, E. Block1, and Z. Wu6, 1University of Pennsylvania, New Bolton Center, Kennett Square, 2Arm and Hammer Animal Nutrition Group, Church & Dwight Co. Inc., Princeton, NJ.


Development and independent validation of SNP markers comprising the IGENITY® profile for feed intake and efficiency in indicus-influenced beef cattle. B. W. Woodward*, J. D. Nkrumah1, P. A. Lancaster2, G. E. Carstens2, and D. J. Johnston3, 1Merial Limited, Duluth, GA, 2Texas A&M University, College Station, 3University of New England, Armidale, NSW, Australia.

Impacts of contemporary group differences in dietary DM and ME on genomic association studies and validation of DNA marker profiles. J. D. Nkrumah* and J. A. Basarab*, 1Merial Ltd., Duluth GA, 2Alberta Agriculture and Food, Lacombe, AB, Canada.

Effects of single nucleotide polymorphisms in stearoyl CoA desaturase and fatty acid synthase on milk yield, composition, and fatty acid profile in lactating Holstein cows. L. Clark*, S. Moore, and M. Oba, University of Alberta, Edmonton, Alberta, Canada.


Analysis of quantitative trait loci affecting female fertility and twinning rate in Israeli Holsteins on chromosome 7. J. I. Weller*, G. Glick1, M. Golik2, E. Ezra2, Y. Zeron1, E. Seroussi1, and M. Ron1, 1ARO, The Volcani Center, Bet Dagan, Israel, 2Israle Cattle Breeders Association, Caesarea, Israel, 3Sion, Shikmim, Israel.

Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case, University of Guelph.

SYMPOSUM
Contemporary and Emerging Issues Joint with Extension Education
Science-Based Approaches to Address Consumer Concerns with the Processing and Marketing of Animal Products
Chair: Kerry Kaylegian, Pennsylvania State University
Sponsor: Elanco Animal Health
511ad

Opening remarks. Stephanie Clark (Washington State Univ.) and Kerry Kaylegian (Pennsylvania State Univ.).

Effects of cattle production practices on environmental quality. F. M. Mitloehner*, University of California, Davis.


Lactose intolerance and milk avoidance: An unnecessary risk for low calcium intake and poor bone health. D. A. Savaiano*, Purdue University, West Lafayette.
3:25 PM   Break


4:15 PM  Panel discussion

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**SYMPOSIUM**

**CSAS Symposium**

**Functional Foods, Probiotics and Animal Health**

**Chair:** Xin Zhao, McGill University

**Sponsors:** Chr. Hansen, EAAP, Monsanto, and Varied Industries Corp.

517b

2:00 PM  Introduction

2:05 PM  643  Postnatal development of the mucosal immune system in domestic animals and consequences on health in adulthood. M. Bailey*, University of Bristol, Bristol, UK.

2:35 PM  644  Use of probiotics and prebiotics to modulate intestinal health in monogastric farm animals. M. Lessard*,1 X. Zhao2, and F. Guay3, 1Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 2McGill University, Department of Animal Science, Montreal, Quebec, Canada, 3Université Laval, Département des sciences animales, Quebec, Quebec, Canada.

3:05 PM  645  A review of the use of direct-fed microbials to mitigate pathogens and enhance production in cattle. T. A. McAllister*, K. A. Beauchemin1, J. Baah1, R. M. Teather1, and K. Stanford1, Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 1Alberta Agriculture and Rural Development, Lethbridge, Alberta, Canada.

3:35 PM  646  Influence of functional food on intestinal microbiota and their subsequent relationship with health. J. Escobar* and M. A. Ponder, Virginia Polytechnic Institute and State University, Blacksburg.

4:05 PM  647  Influence of fermented products on health. E. Farnworth*, Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint Hyacinthe, QC, Canada.

4:35 PM  Closing

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**SYMPOSIUM**

**Dairy Foods**

**Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods Symposium**

**Chair:** Kasipathy Kailasapathy, University of Western Sydney

**Sponsor:** Lallemand

513ef

2:00 PM  648  Introduction to scientific principles and engineering technologies in microencapsulation as applicable to dairy foods. K. Kailasapathy*, University of Western Sydney, Richmond, NSW, Australia.

2:30 PM  649  Benefits of encapsulation of probiotics during processing and storage of dairy products. C. P. Champagne*, Agriculture and Agri-Food Canada, St. Hyacinthe, QC, Canada.

3:00 PM  650  Strategies to improve survival of probiotic bacteria using microencapsulation and to reduce the size of microcapsules for food applications. W.-K. Ding and N. P. Shah*, Victoria University, Melbourne, Victoria, Australia.

3:30 PM  651  Food protein micro/nano particles for controlled nutraceutical delivery in functional foods. L. Chen*1 and M. Subirade2, 1University of Alberta, Edmonton, AB, Canada, 2Université Laval, Quebec, QC, Canada.

4:00 PM  652  Microencapsulation of recombinant enzymes for application in accelerated cheese ripening. B. H. Lee*1,2, 1Agriculture and Agri-Food Canada, Food R&D Centre, St-Hyacinthe, QC, Canada, 2McGill University, Montreal, QC, Canada.
**SYMPOSIUM**  
Dairy Foods  
Milk Protein and Enzymes Symposium  
Chair: Rafael Jiménez-Flores, California Polytechnic State University

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<tr>
<td>2:00 PM</td>
<td>653</td>
<td>Indigenous enzymes in mammalian milk: Scientific, technological and physiological significance.</td>
<td>A. Kelly*, University College Cork, Cork, Ireland.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>655</td>
<td>Proteolytic enzymes associated with somatic cell count and their relevance in raw milk and dairy products.</td>
<td>L. B. Larsen*, Institute of Food Science, Faculty of Agricultural Sciences, Aarhus University, Denmark.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>656</td>
<td>Lipases and lipolysis in milk and dairy products.</td>
<td>H. C. Deeth*, School of Land, Crop and Food Sciences, University of Queensland, Brisbane, Queensland, Australia.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>657</td>
<td>Native proteases in milk: Current knowledge and relevance to dairy industry.</td>
<td>B. Ismail*¹ and S. Nielsen², ¹University of Minnesota, St. Paul, ²Purdue University, West Lafayette, IN.</td>
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**SYMPOSIUM**  
Extension Education  
Models for Dairy Production Decision Making  
Chair: Tamilee Nennich, Purdue University

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<tr>
<td>2:00 PM</td>
<td>658</td>
<td>To keep or cull a cow: An economic decision.</td>
<td>A. De Vries*, University of Florida, Gainesville.</td>
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<tr>
<td>2:05 PM</td>
<td>659</td>
<td>Modeling the economic impact of reproductive change.</td>
<td>M. W. Overton*, University of Georgia, Athens.</td>
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<tr>
<td>3:05 PM</td>
<td>660</td>
<td>Modeling nutrition decisions.</td>
<td>M. D. Hanigan*, Virginia Polytechnic Institute and State University, Blacksburg.</td>
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<tr>
<td>3:35 PM</td>
<td>661</td>
<td>A large Markovian linear program model for dairy herd decision-making.</td>
<td>V. E. Cabrera*, University of Wisconsin, Madison.</td>
</tr>
<tr>
<td>4:05 PM</td>
<td>662</td>
<td>Impact of disease on dairy production decisions.</td>
<td>D. Galligan*, University of Pennsylvania, Kennett Square.</td>
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<tr>
<td>4:35 PM</td>
<td>663</td>
<td>Discussion.</td>
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**Forages and Pastures**  
Harvested Forages, Ensiling and Forage Utilization  
Chair: Marie Krause, West Virginia University

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<tr>
<td>2:15 PM</td>
<td>664</td>
<td>Amaferm level and form on digestibility of forage differing in quality.</td>
<td>J. Nocek*¹ and H. Jensen², ¹Spruce Haven Research Center, Auburn, NY, ²Biozyme Inc, St Joseph, MO.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>665</td>
<td>The ability of enterococci to survive the ensiling process.</td>
<td>S. N. Masiello* and C. S. Petersson-Wolfe, Virginia Polytechnic Institute and State University, Blacksburg.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>666</td>
<td>Expression of genes related to cell wall digestibility of tropical forages.</td>
<td>S. S. Stabile¹, L. Janki¹, A. P. Bodini², N. S. Oliveira³, L. V. Março³, and L. F. Silva*¹, ¹Universidade de São Paulo, Pirassununga, SP, Brazil, ²EMBRAPA, Campo Grande, MS, Brazil.</td>
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<tr>
<td>3:00 PM</td>
<td>667</td>
<td>Effect of citrate synthase genes transformed into alfalfa on aluminum tolerance of its cells.</td>
<td>F. Fan*, J. J. Li, Y. M. Wu, and J. X. Liu, Zhejiang University, Hangzhou, P. R. China.</td>
</tr>
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</table>
3:15 PM 668  A survey of condensed tannin concentrations in vegetative and mature legume forages in western Canada. N. Berard1, K. Ominsinski*¹, K. Wittenberg1, D. Krause1, T. McAllister2, and Y. Wang4, 1University of Manitoba, 2Agriculture and Agri-Food Canada.

3:30 PM 669 Development of prediction equations to estimate hay intake of beef cows under limited access feeding times. T. S. Dennis*¹, T. D. Nennich1, R. P. Lemenager1, C. J. Fleener2, S. L. Lake2, and L. J. Unruh-Snyder4, 1Purdue University, West Lafayette, IN, 2University of Wyoming, Laramie.

3:45 PM 670 Whole plant barley NDF digestibility and its relationship with chemical constituents and dry matter yield. M. L. Swift1, M. Oba1, P. E. Juskiw1, and J. H. Helm1, 1Alberta Agriculture and Rural Development, Lacombe, AB, Canada, 2University of Alberta, Edmonton, AB, Canada.

4:00 PM 671 Forage quality of biomass vs. conventional alfalfa cut at early bud or late flower maturity. H. G. Jung*¹,2, K. P. Rock2, and J. F. S. Lamb1,2, 1USDA-ARS, St. Paul, MN, 2University of Minnesota, St. Paul.

4:15 PM 682  Effects of dietary aflatoxicosis on performance of growing barrows. S. M. Rustemeyer*¹, W. R. Lamberson2, D. R. Ledoux1, R. R. Cockrum1, K. L. Kessler1, K. J. Austin1, and K. M. Cammack1, 1Novus International, Inc., St. Charles, MO, 2University of Missouri, Columbia.

4:30 PM 683 Effects of adding a pelleted protein supplement in diets for nursery pigs. S. M. Williams*¹, E. F. Mader, S. M. Rogers, S. Issa, A. C. Fahrenholz, L. J. McKinney, J. D. Hancock, and K. C. Behnke, Kansas State University, Manhattan.

4:45 PM 684 Effect of a dry organic acid blend on pig performance during the Paylean® phase of growth. R. J. Harrell*¹, F. Navarro1, J. Zhao1, M. Vazquez-Anon1, B. R. Hinson3, G. L. Allee1, and C. D. Knight1, 1Novus International, Inc., St. Charles, MO, 2University of Missouri, Columbia.

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Nonruminant Nutrition
Feed Additives
Chair: Janet Remus, Danisco Animal Nutrition
Sponsor: Diamond V Mills
518

2:00 PM 673  Effects of supplementation of yeast culture to sow diets on reproductive performance and physiological changes in sows and nursing piglets. S. W. Kim*¹, C. Vasquez², A. Saraiva¹, and I. Yoon³, ¹North Carolina State University, Raleigh, ²Texas Tech University, Lubbock, ³Diamond V Mills, Cedar Rapids, IA.

2:15 PM 674  Effects of supplementation of yeast culture to diets of sows and offspring on growth and meat quality of offspring. A. C. Chaytor*¹, C. Vasquez², V. Fellner¹, I. Yoon³, and S. W. Kim¹, ¹North Carolina State University, Raleigh, ²Texas Tech University, Lubbock, ³Diamond V Mills, Cedar Rapids, IA.

2:30 PM 675  Use of a phytogenic feed additive in sows during the lactation. Y. Acosta Aragón¹, D. Uribe López¹, A. Pedroche Quevedo¹, and T. Steiner*², ¹Biomin Holding GmbH, Herzogenburg, Lower Austria, Austria, ²Agropecuaria ALFA S.A., Cundinamarca, Colombia.

2:45 PM 676  Selection of probiotic strains for combined competitive exclusion treatment in piglets. V. Klose*¹, K. Bayer¹, R Bruckbeck¹, V. A. Satlter¹, A. P. Loibner¹, C. Mair², and G. Schatzmayr², ¹BOKU-University, Vienna, Department IFAPA, A-3430 Tulln, Austria, ²BOKU-University, Vienna, Department of Food Sciences and Technology, A-1180 Vienna, Austria.

3:00 PM 677  Effects of NCG and arginine on organ weight and HSP70 expression in weaned piglets. X. Wu, Y. L. Gao, X. H. Zhou, R. L. Huang, and Y. L. Yin*, ¹The Chinese Academy of Sciences, Changsha, China.

3:15 PM 678  Digestible energy in resistant starch and dietary fiber sources fed to pigs. S. K. Cervantes-Pahm*, B. G. Kim, and H. H. Stein, University of Illinois, Urbana.

3:30 PM 679  Feed additives for the amelioration of aflatoxicosis in growing pigs. A. F. Harper*¹, M. J. Estienne¹, J. B. Meldrum², R. J. Harrell², and D. E. Diaz³, ¹Virginia Polytechnic Institute and State University, Blacksburg, VA, ²VA-MD Regional College of Veterinary Medicine, Blacksburg, VA, ³Novus International, Inc., St. Charles, MO.

3:45 PM 680  Xylanase supplementation improves nutrient and energy digestibility in pigs fed corn-soybean meal diets containing 20% corn dried distiller’s grains. J. A. Jendza*¹, A. Owusu-Asiedu³, P. H. Simmins², and O. Adeola³, ¹Purdue University, West Lafayette, IN, ²Danisco Animal Nutrition, Marlborough, UK.

4:00 PM 681  Effect of processing method and enzyme supplementation on the apparent metabolizable energy (AME) of different oilseed meals. B. Jayaraman* and D. M. Anderson, Nova Scotia Agricultural College, Truro, Nova Scotia, Canada.

4:15 PM 682  Effects of dietary aflatoxin on performance of growing barrows. S. M. Rustemeyer*¹, W. R. Lamberson¹, D. R. Ledoux², R. R. Cockrum¹, K. L. Kessler1, K. J. Austin¹, and K. M. Cammack1, ¹University of Wyoming, Laramie, ²University of Missouri, Columbia.

4:30 PM 683  Effects of adding a pelleted protein supplement in diets for nursery pigs. S. M. Williams*¹, E. F. Mader, S. M. Rogers, S. Issa, A. C. Fahrenholz, L. J. McKinney, J. D. Hancock, and K. C. Behnke, Kansas State University, Manhattan.

4:45 PM 684  Effect of a dry organic acid blend on pig performance during the Paylean® phase of growth. R. J. Harrell*¹, F. Navarro¹, J. Zhao¹, M. Vazquez-Anon¹, B. R. Hinson², G. L. Allee¹, and C. D. Knight¹, ¹Novus International, Inc., St. Charles, MO, ²University of Missouri, Columbia.
Plant-based diets enriched with linseed oil or marine algae and organic selenium modify sperm fertility parameters in boar semen. S. Speight*, M. Estienne1, B. Whitaker*, A. Harper1, R. Crawford1, and J. Knight1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Ferrum College, Ferrum,VA.

Use of infrared thermal imaging of the muzzle as a measure of body temperature in sheep and cattle. R. W. Godfrey*, R. C. Ketting1, S. S. Robinson1, and S. T. Willard1, 1University of the Virgin Islands, Agricultural Experiment Station, St Croix, VI, 2Mississippi State University, Department of Animal and Dairy Sciences and Department of Biochemistry and Molecular Biology, Mississippi State.

Relationship of rumen temperature with estrus in beef cows. C. L. Bailey*, M. J. Prado-Cooper, E. C. Wright, and R. P. Wettmann, Oklahoma Agricultural Experiment Station, Stillwater.


Impact of long-term genetic selection for age at puberty on postpartum reproductive physiology in cows. G. A. Bridges*, N. C. Amyes2, M. C. Berg3, M. J. D'Occhio1, and M. L. Day4, 1Purdue University, West Lafayette, IN, 2AgResearch, Ruakura Research Centre, Hamilton, New Zealand, 3The University of Queensland, Brisbane, Australia, 4The Ohio State University, Columbus.


Impact of seasonality, cleavage rate of Su, and progesterone clearance in dairy cows fed a high starch versus a high fiber diet. C. O. Lemley*, K. A. Vonnahme1, K. M. Krause1, and M. E. Wilson1, 1West Virginia University, Morgantown, 2North Dakota State University, Fargo.

The effect of high and low dos doses of naloxone on the ovulation rate of Suffolk ewes during the breeding season. V. O. Fuentes*, A. Bernal-Canseco, and P. I. Fuentes-Castro, Centro Universitario de los Altos Universidad de Guadalajara, Tepatitlan, Jalisco, Mexico.

Tumor necrosis factor alpha increases triglyceride content and alters transcript abundance of metabolic genes in the liver of lactating dairy cattle. B. J. Bradford*, L. K. Mamedova, J. E. Minton, J. S. Drouillard, and B. J. Johnson, Kansas State University, Manhattan.

Effects of feeding colostrum on somatotropin axis, metabolic traits and vital signs of Holstein bull calves. D. Qadimi, A. Zare Shahne, A. Nikkhah, M. Moradi, and R. Masoumi*, University of Tehran, Iran.

Continuously infused obstinat increased pancreatic β-cell function in response to an intravenous glucose tolerance test. J. R. Roche*, A. J. Sheahan1, L. M. Chagas1, J. K. Kay1, and R. C. Boston2, 1DairyNZ, Hamilton, NZ, 2University of Pennsylvania, Kennett Square.

IGF-1 concentrations following sustained release growth hormone treatment in ewes. T. A. Wilmoth*, J. M. Koch, C. O. Lemley, and M. E. Wilson, West Virginia University, Morgantown.


The acute phase response: DiH. A. Lewin†, S. L. Rodriguez-Zas†, and J. K. Drackley†, 1Alberta Agriculture and Agri-Food, Edmonton, AB, Canada 2Bauman*, G. R. Ghorbani2, and H. R. Rahmani2, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2University of Florida - IFAS, Range Cattle Research and Education Center, Ona, MAFES, Mississippi State University, Raymond.

Fibroblast growth factor 21 (FGF21) expression is increased in hepatic tissue of feed-restricted cows and during the transition from pregnancy to lactation. K. J. Harvatine* and Y. R. Boisclair2, 1Penn State University, University Park, 2Cornell University, Ithaca, NY.

Expression of thyroid hormone responsive spot 14 and a homologous protein (MIG12) are dynamically regulated in adipose tissue of dairy cows during modification of energy balance. K. J. Harvatine*, Y. R. Boisclair2, and D. E. Bauman3, 1Penn State University, University Park, 2Cornell University, Ithaca, NY.

TNFα and factors related to insulin signaling in adipose tissue of dry- and early lactating dairy cows. H. Sadri1,2, A. van Dorland1, G. R. Ghorbani1, H. R. Rahmani1, and R. M. Bruckmaier*, 1University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland, 2Isfahan University of Technology, Department of Animal Science, Isfahan, Iran.

Differential effects of propionate on mRNA abundance of adiponectin receptors and G protein-coupled receptor GPR41 in bovine subcutaneous and perirenal adipose tissue explants in vitro. A. Hosseini*, H. Sauerwein, and M. Mielenz, University of Bonn, Bonn, Germany.

Ruminant Nutrition
Dairy 2
Chair: Paul Kononoff, University of Nebraska
516c

Effect of grain type and processing method on rumen fermentation and milk rumenic acid production. R. Mohammedi†, J. J. Kennelly†, J. K. G. Kramer†, K. A. Beauchemin†, C. S. Stanton†, and J. J. Murphy†, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Guelph, ON, Canada, 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 4Teagasc, Moorepark, Co. Cork, Ireland.


Feeding dairy cows barley grain treated with lactic acid and heat increased milk fat content and prevented the decline of rumen pH to sub-clinical ruminal acidosis (SARA) values. Q. Zebeli*, S. M. Dunn, and B. N. Ametaj, University of Alberta, Edmonton, AB, Canada.

Overfeeding energy prepartum dramatically affects peripartal expression of mRNA transcripts in subcutaneous adipose tissue compared with controlling energy intake prepartum. N. A. Janovic*†, J. J. Loor†, P. Ji‡, R. E. Everts‡, H. A. Lewin†, S. L. Rodriguez-Zas†, and J. K. Drackley†, 1University of Illinois, Urbana, 2Institute for Genomic Biology, Urbana, IL.


Effects of replacing corn grain with molasses on ruminal fermentation and milk component production in dairy cows. C. A. Martel*, E. C. Tilgnermeyer, and B. J. Bradford, Kansas State University, Manhattan.
Ruminant Nutrition
Minerals
Chair: Allen Young, Utah State University
516ab

2:00 PM 719 ADSA Pioneer: Thirty-eight years of vitamin D and calcium research: From dairy cows to humans. R. L. Horst*, Heartland Assays, Inc., Ames, IA.

2:30 PM 720 The optimum dietary Ca concentration to minimize the risk of hypocalcaemia in dairy cows is affected by dietary cation-anion difference. M. Oba*1, A. Oakley1, and G. Tremblay2, 1University of Alberta, Edmonton, AB, Canada, 1Agriculture and Agri-Food Canada, Quebec, QC, Canada.

2:45 PM 721 Effects of copper deficiency on gene expression profiles of copper transporters and chaperones in steers. R. S. Fry*1, M. S. Ashwell1, S. L. Hansen1, T. E. Engle1, H. Han1, and J. W. Spears1, 1North Dakota State University, Fargo, 1USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID.

3:00 PM 722 Strategic use of naturally selenium-rich milling coproducts to manage selenium deficiency. J. B. Taylor*, USDA, Agricultural Research Service, Dubois, ID.

3:15 PM 723 Effects of nutritional plane and selenium supply on intestinal mass, cellularity, and proliferation in the ewe. A. M. Meyer*1, J. J. Reed1, T. L. Neville1, L. R. Coupe1, J. B. Taylor2, L. P. Reynolds1, D. A. Redmer1, K. A. Vonnahme1, and J. S. Caton1, 1North Dakota State University, Fargo, 1USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID.

3:30 PM 724 Mineral balances in California dairy farms. A. R. Castillo*, N. St-Pierre1, and N. Silva del Rio1, 1University of California, Cooperative Extension, Merced, 1The Ohio State University, Columbus.

3:45 PM 725 Effects of trace mineral amount and source on aspects of oxidative status and immune function in dairy cows. T. Yasui*1, R. M. Ehrhardt1, G. R. Bowman1, M. Vázquez-Añon2, J. D. Richards3, C. A. Atwell1, T. D. Wineman1, and T. R. Overton1, 1Cornell University, Ithaca, NY, 1Novus International, St. Charles, MO.

4:00 PM 726 Impact of phosphorus form on utilization in lactating dairy cows. K. J. Lager*, M. J. Brouk, B. J. Bradford, and J. P. Harner, Kansas State University, Manhattan.

4:15 PM 727 Effect of 4-Plex® on milk production, reproduction and claw integrity of dairy cows. J. M. DeFrain*1, M. T. Socha1, D. J. Tomlinson1, and D. Kluh1, 1Zinpro Corporation, Eden Prairie, MN, 1Standard Dairy Consultants, Omaha, NE.

4:30 PM 728 Metabolic and productive responses to supplemental chromium in early-lactation heat-stressed cows. M. Mirzaei1, G. R. Ghorbani1, M. Khorvash1, H. R. Rahmani1, and A. Nikkhah*1, 1Isfahan University of Technology, Isfahan, Iran, 1Zanjan University, Zanjan, Iran.
Thursday, July 16

SYMPOSIA AND ORAL SESSIONS
Animal Behavior and Well-Being 2
Chair: Marina von Keyserlingk, University of British Columbia

511ad 8:30 AM 729 Behavior-nutrition interaction in swine. J. N. Marchant-Forde*, USDA-ARS, West Lafayette, IN.


9:15 AM 218 The effect of animal location during transit on heart rate of pigs transported to slaughter using two vehicle types. J. A. Correa*, H. Gonyou, R. Bergeron, S. Torrey, T. Crowe, T. Widowski, J. P. Laforest, C. Dewey, N. Lewis, and L. Faucitano, 1Laval University, Quebec, Quebec, Canada, 2Prairie Swine Centre, Saskatoon, Saskatchewan, Canada, 3University of Guelph, Guelph, Ontario, Canada, 4Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 5University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 6University of Manitoba, Winnipeg, Manitoba, Canada.

9:30 AM 731 Validation of saliva sampling techniques in swine in order to assess stress responses. S. M. Hayne*, N. J. Cook, and H. W. Gonyou, 1Prairie Swine Centre, Saskatoon, SK, Canada, 2Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada.

9:45 AM 732 Influence of season on the behaviour of market weight pigs transported 2 hours to slaughter. S. Torrey*, S. Hayne*, R. Bergeron, L. Faucitano, T. Widowski, N. Lewis, T. Crowe, C. Dewey, and H. Gonyou, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Prairie Swine Centre, Saskatoon, SK, Canada, 3University of Guelph, Guelph, ON, Canada, 4University of Manitoba, Winnipeg, MB, Canada, 5University of Saskatchewan, Saskatoon, SK, Canada.

10:00 AM 733 Effects of linoleic and α-linolenic acid intake on pig behaviour, and its relationship with brain DHA. J. E. Bolhuis, I. van Kerkhof, and W. J. J. Gerrits*, Wageningen University, Wageningen, the Netherlands.


10:45 AM 735 Effect of premolar eruption on growth and behaviour of weaned piglets. A. L. Tucker* and T. M. Widowski, University of Guelph, Guelph, ON, Canada.

11:00 AM 736 Pen and stall-housed gestating sows prefer unlocked to locked free-access stalls. L. M. W. Jones*, J. P. Garner, J. N. Marchant-Forde, and E. A. Pajor, 1Purdue University, West Lafayette, IN, 2USDA Livestock Behavior Research Unit, West Lafayette, IN.

11:15 AM 737 Making sense of fear testing– Validating common behavioral tests used in swine. D. C. Lay Jr.*, and J. P. Garner, 1Agricultural Research Service - USDA, West Lafayette, IN, 2Purdue University, West Lafayette, IN.
**Breeding and Genetics**

**Dairy Breeding IV - Crossbreeding**

**Chair: Janice M. Rumph, Michigan State University**

510bd


8:45 AM 739  Jersey × Holstein crossbred cows compared to pure Holstein cows for production, SCS, and udder measurements during the first three lactations. B. J. Heins*, L. B. Hansen, A. R. Hazel, A. J. Seykora, D. G. Johnson, and J. G. Linn, University of Minnesota, Saint Paul.

9:00 AM 740  Positive percent heterosis for fat-corrected milk per day of life from Holstein-Jersey diallel. R. D. Shanks*, B. G. Cassell, K. M. Olson, A. J. McAllister, and S. P. Washburn, University of Illinois, Urbana. Virginia Polytechnic Institute and State University, Blacksburg, University of Kentucky, Lexington, North Carolina State University, Raleigh.


9:45 AM  Break

10:00 AM 743  Montbeliarde-sired crossbred cows compared to pure Holstein cows for body weight, body condition score, hip height, dry matter intake, and production during the first 150 days of first lactation. A. R. Hazel*, B. J. Heins, L. B. Hansen, A. J. Seykora, D. G. Johnson, and J. G. Linn, University of Minnesota, Saint Paul.


10:45 AM 746  Brown Swiss × Holstein crossbreds compared to pure Holsteins for production, SCS, milking speed, days to first breeding and days open. S. Bloettner*, M. Wensch-Dorendorf, H. H. Swalve, B. J. Heins, and L. B. Hansen, Group Animal Breeding, Halle (Saale), Saxony-Anhalt, Germany. Department of Animal Breeding, Saint Paul, MN.

11:00 AM 747  Brown Swiss × Holstein crossbreds compared to pure Holsteins for body weight, back fat thickness and udder measurements during the first two lactations. S. Bloettner*, M. Wensch-Dorendorf, H. H. Swalve, J. Gueneh, B. J. Heins, and L. B. Hansen, Group Animal Breeding, Halle (Saale), Saxony-Anhalt, Germany. Technical College for Agriculture, Haldensleben, Saxony-Anhalt, Germany. Department of Animal Science, St. Paul, MN.

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**Dairy Foods**

**Dairy Foods Processing/Enzymes**

**Chair: Nana Farkye, CalPoly State University**

513cd

8:30 AM 748  ADSA Pioneer: Whey—From gutter to gold. P. J. Jelen*, University of Alberta, Edmonton, AB, Canada.

9:00 AM 749  Protein-interactions in heat-treated milk and effect on rennet coagulation. P. Kethireddipalli*, D. G. Dalgleish, and A. R. Hill, University of Guelph, Guelph, ON, Canada.


9:45 AM  Break

10:00 AM 753  Development of rapid method for measurement of lactose in model solutions using a hand-held blood glucose biosensor. J. Amamcharla*, K. Shah, and L. Metzger, South Dakota State University, Brookings.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors/Institutions</th>
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<tr>
<td>10:15 AM</td>
<td>754</td>
<td>Performance of Holstein steers, beef steers and beef heifers under rotational grazing. M. H. Ramos*, J. W. Lehmkhuler², and K. A. Albrecht³, ¹University of Missouri, Columbia, ²University of Kentucky, Lexington, ³University of Wisconsin, Madison.</td>
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<tr>
<td>10:30 AM</td>
<td>755</td>
<td>Dairy food intake among historically African American college campus students. A. M. Patterson* and S. A. Ibrahim, North Carolina A&amp;T State University, Greensboro.</td>
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<tr>
<td>10:45 AM</td>
<td>765</td>
<td>Comparison of fescues versus orchardgrass—Forage characteristics and stocker performance. M. H. Ramos*, J. W. Lehmkhuler², and K. A. Albrecht³, ¹University of Missouri, Columbia, ²University of Kentucky, Lexington, ³University of Wisconsin, Madison.</td>
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<tr>
<td>8:30 AM</td>
<td>756</td>
<td>Effect of fall grazing system on annual ryegrass quality and beef cattle performance. J. M. Kelzer*, S. Bird², R. D. Mathison², P. R. Peterson¹, and R. S. Walker¹, ¹University of Minnesota, St. Paul, ²University of Minnesota, Grand Rapids, ³University of Minnesota, Andover.</td>
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<tr>
<td>9:00 AM</td>
<td>758</td>
<td>Economic feasibility of stocker cattle grazing tall fescue infected with a novel endophyte in the Southern Great Plains of the USA. J. T. Biermacher*, R. Reuter¹, B. J. Cook¹, M. A. Islam¹, A. Hopkins¹, J. H. Bouton¹, and T. J. Butler¹, ¹Samuel Roberts Noble Foundation, Ardmore, OK, ²University of Wyoming, Laramie.</td>
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<td>10:00 AM</td>
<td>762</td>
<td>Prediction of nitrogen utilization efficiency from plant constituents in lactating cows fed pasture-based diets. R. E. Vibart*, B. A. Barrett, and D. Pacheco, AgResearch Limited, Palmerston North, New Zealand.</td>
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<tr>
<td>10:15 AM</td>
<td>763</td>
<td>Effects of stocking rate and supplementation on lactation and reproduction in pasture-based dairy systems in Eastern North Carolina. R. E. Vibart*, S. P. Washburn², G. A. Benson², and J. T. Green², ¹AgResearch Limited, Palmerston North, New Zealand, ²North Carolina State University, Raleigh.</td>
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<td>10:30 AM</td>
<td>764</td>
<td>Sequence grazing of perennial and annual cool-season grasses to extend the grazing season for stocker calves. B. K. Northup³, W. A. Phillips*¹, and A. A. Hopkins², ¹USDA-ARS Grazinglands Research Laboratory, El Reno, OK, ²Noble Foundation Inc., Ardmore, OK.</td>
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<td>11:00 AM</td>
<td>766</td>
<td>Use of N fertilization versus interseeded legume—Forage characteristics and stockers performance. M. H. Ramos*, J. W. Lehmkhuler², and K. A. Albrecht³, ¹University of Missouri, Columbia, ²University of Kentucky, Lexington, ³University of Wisconsin, Madison.</td>
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<td>Performance of Holstein steers, beef steers and beef heifers under rotational grazing. M. H. Ramos*, J. W. Lehmkhuler², and K. A. Albrecht³, ¹University of Missouri, Columbia, ²University of Kentucky, Lexington, ³University of Wisconsin, Madison.</td>
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8:30 AM  Introductions
10:00 AM  769  Fatty acid synthesis in equine adipose and liver tissue explants. J. K. Suagee*, R. A. Cori, L. J. McCutcheon, and J. G. Wearn, Virginia Polytechnic Institute and State University, Blacksburg, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, Michigan State University, East Lansing.
10:15 AM  770  Effects of the insulin sensitizing drug, pioglitazone, on genes regulating glucose and fat metabolism in horses. J. K. Suagee*, R. J. G. Wearn, L. J. McCutcheon, and R. J. Geor, Virginia Polytechnic Institute and State University, Blacksburg, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, Michigan State University, East Lansing.
10:30 AM  771  The use of thermal imaging to monitor temperature in the hoof of horses consuming endophyte-infected tall fescue. K. C. Gradert*, J. M. Bormann, S. F. DeWitt, L. W. Lomas, J. M. Koubal, and T. L. Slough, Kansas State University, Manhattan, Woodside Equine Research Center, Parsons, KS.
10:45 AM  772  The use of a handheld glucometer for measuring glucose concentrations from whole blood collected from the horse. C. D. Gunke*, J. S. Drouillard, and T. L. Slough, Kansas State University, Manhattan.
11:00 AM  Break
11:15 AM  773  The effect of consuming endophyte-infected tall fescue on lameness in the horse. K. C. Gradert*, J. M. Bormann, S. F. DeWitt, L. W. Lomas, J. M. Koubal, and T. L. Slough, Kansas State University, Manhattan, Woodside Equine Research Center, Parsons, KS.
11:30 AM  774  The use of thermal imaging to monitor temperature in the hoof of horses consuming endophyte-infected tall fescue. K. C. Gradert*, J. M. Bormann, S. F. DeWitt, L. W. Lomas, J. M. Koubal, and T. L. Slough, Kansas State University, Manhattan, Woodside Equine Research Center, Parsons, KS.
11:45 AM  Break
12:00 PM  Introductions
12:45 PM  776  Apparent and true ileal digestibility of acid hydrolyzed ether extract in various feed ingredients fed to growing pigs. B. G. Kim*, D. Y. Kil, and H. H. Stein, University of Illinois, Urbana.
1:30 PM  778  The role of linoleic and α-linolenic acid for synthesis of long chain polyunsaturated fatty acids in liver and brain: A model study with growing pigs. W. Smink, J. Van Baal, R. Hovenier, and W. J. J. Gerrits*, Wageningen University, Wageningen, the Netherlands.
1:45 PM  779  Comparing oxidation of fatty acids in pigs fed starch, animal fat or soy oil using 13C labeled fatty acids. J. J. G. C. van den Borne, E. M. A. M. Bruinsma, E. van Heugten, J. van Milgen, and W. J. J. Gerrits*, Wageningen University, Wageningen, the Netherlands, North Carolina State University, Raleigh, INRA, UMR1079, Systèmes d’Élevage, Nutrition Animale et Humaine, St Gilles, France.
2:00 PM  780  Essential oil micro encapsulation increases stability during pelleting and premix and feed storage. D. Bravo, C. Ionescu*, A. Vienne, and S. Oguey, Pancosma, Geneva, Switzerland.
Production, Management and the Environment
Beef
Chair: Joe Dalton, University of Idaho
513ab

8:30 AM  782  An evaluation of residual feed intake estimates obtained with computer models versus empirical regression. C. B. Williams*, C. L. Ferrell, and T. G. Jenkins, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

8:45 AM  783  Influence of feed management on random herd curves from random regression test-day model. M. Caccamo*; 1, R. F. Veerkamp*, 1, J. D. Ferguson*; 1, R. Petriglieri*; 1, F. La Terra*; 1, and G. Licitra*; 1, 2 Coralål, Regione Siciliana, Ragusa, Italy, 2 Animal Breeding and Genomics Centre, ASG, WageningenUR, Lelystad, The Netherlands, 1 University of Pennsylvania, Kennett Square, 1 D.A.C.P.A. University of Catania, Italy.


9:30 AM  786  Predicting the success of fixed-time AI from passive monitoring of body temperature in beef heifers. J. A. Small*; 1, 2, A. D. Kennedy*; 1, L. M. Pfeifer*; 2, and J. Singh*; 1, 1 Agriculture and Agri-Food Canada, Brandon, MB, Canada, 2 University of Manitoba, Winnipeg, MB, Canada, 1 University of Saskatchewan, Saskatoon, SK, Canada, 1 Nova Scotia Agricultural College, Truro, NS, Canada.

9:45 AM  787  Does fertility-associated antigen on sperm collected from Nellore (Bos indicus) bulls affect fertility at first-service timed AI? J. C. Dalton*; 1, 2, L. Deragon*; 2, J. L. M. Vasconcelos*; 1, and A. Ahmadzadeh*; 1, 1 University of Idaho, Caldwell, 2 Alta Genetics Brazil, Uberaba, MG, Brazil, 1 FVMZ-UNESP, Botucatu, SP, Brazil, 1 University of Idaho, Moscow.

10:00 AM  788  Mastitis in beef bulls caused by Arcanobacterium pyogenes. S. C. Nickerson*; 1, E. Rollin*; 2, D. T. Enley*; 2, and R. D. Berghaus*; 2, 1 University of Georgia, College of Agricultural and Environmental Sciences, Department of Animal and Dairy Science, Athens, 2 University of Georgia, College of Veterinary Medicine, Department of Population Health, Athens.

Ruminant Nutrition
Dairy 3
Chair: Allen Young, Utah State University
511cf

8:30 AM  789  Short-term changes in forage dry matter affect milk production responses in dairy cows. D. R. Mertens*; 1 and P. Berzaghi*; 1, 1 US Dairy Forage Research Center, Madison, WI, 2 University of Padua, Italy.

8:45 AM  790  Meta-analysis of influence of dietary NDF on energy partitioning in dairy cows. D. Sauvant*; 1, O. Martin*; 1, and D. Mertens*; 1, 1 Agroparistech-INRA, Paris, France, 2 US Dairy Forage Research Center, Madison, WI.

9:00 AM  791  Effect of feeding low-starch, low-forage diets to mid-lactation dairy cows on lactational performance and ruminal characteristics. E. R. Myers*; 1, H. M. Dam*; 2, K. W. Cotanch*; 2, C. S. Mooney*; 2, R. J. Grant*; 2, A. L. Lock*; 2, and K. Yagi*; 2, 1 University of Vermont, Burlington, 2 William H. Miner Agricultural Research Institute, Chazy, NY, 2 ZEN-NOH National Federation of Agriculture Co-Operative Associations, Tokyo, Japan.


9:30 AM  793  Determining fiber requirements in dairy cows by modeling digestive responses to dietary physically effective NDF. Q. Zebei*; 1, 2, D. Mansmann*; 1, 2, H. Steingass*; 1, W. Drochner*; 1, and B. N. Ametaj*; 2, 1 University of Alberta, Edmonton, AB, Canada, 2 University of Hohenheim, Stuttgart, Germany.

9:45 AM  794  Nutritional value of bahiagrass, bahiagrass-alfalfa, or brown mid rib sorghum baleage for lactating Holstein cows. M. E. McCormick*; 1, V. R. Moreira*; 1, D. C. Blouin*; 1, and K. J. Ham*; 1, 1 Louisiana State University Agricultural Center, Southeast Research Station, Franklinston, 2 Louisiana State University Department of Experimental Statistics, Baton Rouge.

10:00 AM  795  Diurnal patterns of rumen pH and function in dairy cows on high quality temperate pastures of the South Island of New Zealand. J. Gibbs* and J. Laporte, Lincoln University, Canterbury, New Zealand.

10:15 AM  796  Effect of pre-grazing herbage mass and daily herbage allowance on rumen, plasma and milk fatty acids. R. A. Palladino*; 1, M. O’Donovan*; 2, J. J. Murphy*; 1, M. McEvoy*; 1, 2, and D. A. Kenny*; 1, 1 University College Dublin, Belfield, Dublin, Ireland, 2 Teagasc, Fermoy, Co. Cork, Ireland.
10:30 AM 797  Comparison of energy expenditure, physical activity and feeding behavior in dairy cows grazing pasture grass or fed the same grass indoors. L. D. Kaufmann, A. Münger, M. Rérat, P. Junghans, S. Görs, C. C. Metges, and F. Döhme. 1Agronomy Liebefeld-Posieux, Research Station ALP, Posieux, FR, Switzerland, 2Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.

10:45 AM 798  Relationship between milk fat and nutrition in lactating Holstein cows. M. Vazirigohar, A. Nejati Javaremi, and A. Nikkhah. 1University of Tehran, Karaj, Tehran, Iran.

11:00 AM 799  Profitability and milk yield response to protein supplementation in mid-lactation dairy cows. A. E. O. Malau-Aduli and J. C. Beattie. 1School of Agricultural Science, University of Guelph, Guelph, Ontario, Canada

11:15 AM 800  Pigeon peas as a supplement for lactating dairy cows fed corn silage based diets. V. A. Corriher, G. M. Hill, J. K. Bernard, T. Jenkins, and B. G. Mullinix. 1University of Georgia, Tifton, 2Clemson University, Anderson, SC.

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Ruminant Nutrition
Research Methods
Chair: Masahito Oba, University of Alberta

511be

8:30 AM 57  Comparison of NRC-2001 chemical approach with biological approach (in situ animal study) in the determination of digestible nutrients and energy values of dry distillers grains with solubles in ruminants. W. G. Nuez Ortin and P. Yu. 1University of Saskatchewan, Saskatoon, SK, Canada.

8:45 AM 801  Everting the omasum into the reticulum to identify the sensory receptors in the omasum of the sheep. W. L. Grovum, 1Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada.

9:00 AM 802  Standardization of an in vitro method using Streptomyces griseus enzyme to predict rumen undegraded protein. I. Schadt, P. J. Van Soest, and G. Lictra. 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2Cornell University, Ithaca, NY, 3D.A.C.P.A. University of Catania, Italy.

9:15 AM 803  Methodology to improve the sensitivity and repeatability of in vitro gas production. D. R. Mertens, 1US Dairy Forage Research Center, Madison, WI.

9:30 AM 804  Effect of lignin linkages with other plant cell wall components on in vitro and in vivo NDF digestibility of forages. E. Raffrenato, R. Fievisohn, K. W. Cotanch, R. J. Grant, L. E. Chase, and M. E. Van Amburgh. 1Cornell University, Ithaca, NY, 2W. H. Miner Agricultural Research Institute, Chazy, NY.

9:45 AM 805  Do the time of access to food, the supplementation with additives and the graze affect ruminal inocula used for in vitro gas production trials? A. Pérez-Ruchel, A. Britos, E. Almanza, J. L. Repetto, N. Pomiés, and C. Cajarville. 1Departamento de Nutrición Animal, Facultad de Veterinaria, Montevideo, Uruguay, 2Departamento de Bovinos, Facultad de Veterinaria, Montevideo, Uruguay.

10:00 AM 806  In vitro assessment of effects of microalgae type, protection of microalgae, and dilution rate on dry matter disappearance and methane emission in a rumen simulation system. R. Kinley, K. Glover, R. Teather, S. Iverson, and A. Fredeen. 1Nova Scotia Agricultural College, Truro, Nova Scotia, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 3Dalhousie University, Halifax, Nova Scotia, Canada.


10:30 AM 808  Evaluation of supplementation or controlled-release capsule (CRC) to supply n-alkane as an intake marker in steers fed switchgrass or alfalfa hay. S. Chavez, C. Lane, M. Braxton, A. Bruner, E. Leonard, J. Burns, and G. Huntington. 1North Carolina State University, Raleigh.
# SYMPOSIUM

Swine Species
Environmental Concerns Based on Swine Production
Chair: Brett R. White, University of Nebraska-Lincoln
Sponsor: Land O’Lakes
510ac

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<td>8:30 AM</td>
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<td>8:35 AM</td>
<td>809 Research and extension needs in air and water quality. D. J. Meisinger*, US Pork Center of Excellence, Ames, IA.</td>
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<td>8:50 AM</td>
<td>810 Occupational and environmental concerns in swine production. K. Donham*, University of Iowa, Iowa City.</td>
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<td>9:30 AM</td>
<td>811 The potential ability of swine nutrition to influence environmental factors positively. S. T. Petersen*, Land O’Lakes Purina Feed LLC, Shoreview, MN.</td>
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<td>10:10 AM</td>
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<td>10:25 AM</td>
<td>812 Potential of anaerobic digestion to address current environmental concerns on swine operations. D. I. Massé*, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada.</td>
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<td>11:05 AM</td>
<td>813 Fate and transport of zoonotic bacterial, viral, and parasitic pathogens during swine manure treatment, storage, and land application. C. Ziemer**, J. Bonner†, Task Force Members for CAST Special Publication No. 29‡, D. Cole (cochair)§, and J. Vinjé (cochair)¶, †National Soil Tilth Lab ARS-USDA, Ames, IA, ‡Council for Agricultural Science and Technology, Ames, IA, §Georgia Division of Public Health, Atlanta, GA, ¶Centers for Disease Control and Prevention, Atlanta, GA.</td>
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Numbers following names refer to abstract numbers: a number alone indicates an oral presentation, an M prior to the number indicates a Monday poster, a T indicates a Tuesday poster, and a W indicates a Wednesday poster.

The author index is created directly and automatically from the submitted abstracts. If an author’s name is typed differently on multiple abstracts, the entries in the author index will reflect these discrepancies. Efforts have been made to make this index consistent; however, error from author entry contributes to inaccuracies.

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<td>522</td>
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<td></td>
<td>SAD Undergraduate Midday Mixer</td>
<td>(5:00–6:30 pm) ASAS Retirees Gathering</td>
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<td>(5:00–6:00 pm) ADSA Dairy Foods Division Council Meeting</td>
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<td>523b</td>
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<td>(2:00–3:00 pm) ADSA Production Division Council Meeting/ (3:00–4:00 pm) ADSA Production Division Nominating Committee</td>
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<td>Exhibit Hall 220cde</td>
<td>Poster presentations</td>
<td>(8:00 am–6:00 pm) Commercial Exhibits</td>
<td>Meat Science and Muscle Biology Symposium: Balancing Live Cattle Performance and Beef Quality</td>
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<td>510ac</td>
<td>National ADSA Dairy Foods Graduate Student Competition</td>
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<td>Production, Management and the Environment: Environment</td>
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<td>ASAS Cell Biology Symposium: REDOX Regulation of Cell Function</td>
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<td>511be</td>
<td>Bioethics Symposium: A Scientist's Guide to Approaching Bioethics</td>
<td>(12:30–1:00 pm) ASAS Graduate Student Open Forum</td>
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<td>Bioethics Workshop: Working through Bioethical Issues in Practice</td>
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<td>511cf</td>
<td>Animal Health: Mastitis, Lameness, and Stress</td>
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<td>Teaching/Undergraduate and Graduate Education Symposium: Enhancing the Undergraduate Writing Experience</td>
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<td>(2:00–4:00 pm) Swine Species</td>
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<td>513ab</td>
<td>(9:30–11:15 am) ADSA-ASAS Northeast Section Graduate Student Competition / (11:30 am–12:15 pm) ADSA Southern Section Graduate Student Competition</td>
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<td>JAS/JDS Reviewer Workshop</td>
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<td>513cd</td>
<td>National ADSA Production Oral MS Student Competition</td>
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<td>Dairy Foods Symposium: Milk Protein Fractionation</td>
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<td>513ef</td>
<td>National ADSA Production Oral PhD Student Competition</td>
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<td>CSAS Graduate Student Competition 1</td>
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<td>516ab</td>
<td>Ruminant Nutrition: Growing Cattle and Beef Breeding Herd</td>
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<td>Ruminant Nutrition: Feedlot, Byproduct Feeds</td>
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<td>516c</td>
<td>Ruminant Nutrition: Ruminant Nutrition: Dairy 1</td>
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<td>Physiology and Endocrinology: Dairy Cattle Reproduction</td>
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<td>Nonruminant Nutrition: Feed Ingredients</td>
<td>Nonruminant Nutrition Symposium: Improving the Nutritional Value of Alternative Feed Ingredients</td>
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<td>Breeding &amp; Genetics: Dairy Cattle Breeding I</td>
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<td>Food Safety</td>
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<td>520ad</td>
<td>(8:30 am–9:15 am) ADSA-SAD Business Meeting / (11:00 am–12:45 pm) ADSA-SAD Undergraduate Competition: Dairy Foods</td>
<td>(2:00–4:00 pm) ADSA-SAD Undergraduate Competition: Dairy Production</td>
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<td>520be</td>
<td>(9:30–10:45 am) ADSA-SAD Activities Symposium</td>
<td>ADSA-SAD Undergraduate Competition: Original Research</td>
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<td>(9:30–10:30 am) ADSA-SAD Interviews for Outstanding Student and Advisor Awards</td>
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<td>520f</td>
<td>(9:30–10:30 am) ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports</td>
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<td>Breeding &amp; Genetics: Molecular Genetics I</td>
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<td>Breeding and Genetics Symposium: Whole Genome Selection - The New Frontier?</td>
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<td>(10:30 am–12:30 pm) ARPAS Exam</td>
<td>ACAS Annual Meeting</td>
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<td>Exhibit Hall 220cde</td>
<td>Poster presentations</td>
<td>(8:00 am–5:00 pm) Commercial Exhibits</td>
<td>Breeding &amp; Genetics: Dairy Cattle Breeding III</td>
<td>Breeding &amp; Genetics: Swine Breeding</td>
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<td>510ac</td>
<td>Breeding and Genetics: Genomic Evaluation</td>
<td>Breeding &amp; Genetics: Dairy Cattle Breeding III</td>
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<td>Production, Management and the Environment: Dairy</td>
<td>Breeding &amp; Genetics: Swine Breeding</td>
<td>Breeding &amp; Genetics: Dairy Cattle Breeding III</td>
<td>Breeding &amp; Genetics: Swine Breeding</td>
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<td>511ad</td>
<td>Companion Animals</td>
<td>ARPAS Business Meeting</td>
<td>ARPAS Symposium: Feed Management: ARPAS, NRCS, and The National Project</td>
<td>BREEDING &amp; GENETICS: D ARY C A TLE BREEDING III</td>
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<td>511be</td>
<td>Growth and Development: Physiology of Growth In vivo and In vitro</td>
<td>Animal Behavior and Well-Being</td>
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<td>511cf</td>
<td>Animal Health Symposium: Emerging Foreign Animal and Zoonotic Diseases</td>
<td>Small Ruminant: Production, Management, Lactation</td>
<td>Teaching/Undergraduate and Graduate Education: Teaching Issues</td>
<td>Teaching/Undergraduate and Graduate Education: Teaching Issues</td>
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<td>Lactation Biology 1</td>
<td>Teaching/Undergraduate and Graduate Education: Teaching Issues</td>
<td>Teaching/Undergraduate and Graduate Education: Teaching Issues</td>
<td>Teaching/Undergraduate and Graduate Education: Teaching Issues</td>
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<tr>
<td>513ab</td>
<td>(11:30 am–12:30 pm) ADSA Production Division Business Meeting</td>
<td>(3:30–5:00 pm) ASAS JAS Forum (Division/Associate Editors and Authors)</td>
<td>(3:30–5:00 pm) ASAS JAS Forum (Division/Associate Editors and Authors)</td>
<td>(3:30–5:00 pm) ASAS JAS Forum (Division/Associate Editors and Authors)</td>
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<td>513cd</td>
<td>Small Ruminant Symposium: Organic and Grass-Fed Small Ruminant Challenges and Opportunities</td>
<td>Dairy Foods: Oral Session 1</td>
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<td>513ef</td>
<td>(9:30–10:30 am) ADSA Foundation Lecture - Production / (10:30–11:30 am) Danisco Award Lecture / (11:30 am–12:30 pm) ADSA Dairy Foods Division Business Meeting</td>
<td>Dairy Foods: Oral Session 2</td>
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<td>516ab</td>
<td>7:30 am–9:30 am</td>
<td>Beef Species Symposium: Population Data Analyses to Evaluate Trends in Animal Production Systems</td>
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<td>516c</td>
<td>12:30 pm–2:00 pm</td>
<td>Ruminant Nutrition: Fat Supplementation</td>
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<td>517a</td>
<td>9:30 am–12:30 pm</td>
<td>Ruminant Nutrition Symposium: Using Molecular Techniques to Advance Research in Ruminant Nutrition</td>
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<td>517b</td>
<td>2:00 pm–5:00 pm</td>
<td>Growth and Development Symposium: Fetal Programming in Ruminant Agriculture</td>
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<td>517c</td>
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<td>Animal Health Symposium: Animal Well Being: Tackling the Issue of Cow Longevity</td>
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<td>Physiology and Endocrinology: Estrous Synchronization of Beef Cattle</td>
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<td>519</td>
<td>(11:45 am–2:00 pm)</td>
<td>ADSA-SAD Awards Luncheon</td>
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<td>520ad</td>
<td>(8:30–9:30 am)</td>
<td>ADSA-Student Business Meeting–Elec. of Officers (9:30–11:00 am)</td>
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<td>520be</td>
<td>(9:00–12:00 pm)</td>
<td>ADSA-SAD Student Career Roundtable</td>
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<tr>
<td>520ce</td>
<td>(2:30–3:30 pm)</td>
<td>ADSA-SAD Committee Meeting–Old and New Officers and Advisors</td>
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<td>520f</td>
<td>(5:00–7:00 pm)</td>
<td>ADSA Award Photos</td>
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<td>521a</td>
<td>(5:00–6:30 pm)</td>
<td>ADSA Award Dinner Photos</td>
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<td>ADSA Award Dinner Setup</td>
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<td>(5:00–6:30 pm)</td>
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Tuesday, July 14
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<td>522</td>
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<td>ASAS GS Lunch and Learn</td>
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<td>ADSA DF Division Milk Proteins &amp; Enzyme Committee</td>
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<td>ADSA DF Division Program Planning Lunch</td>
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<td>(8:00 am–2:00 pm) Commercial Exhibits / (2:00 pm–5:00 pm) Exhibit Teardown</td>
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<tr>
<td>510bd</td>
<td>International Animal Agriculture Symposium: ASAS-EAAP Global Issues</td>
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<td>Breeding and Genetics: Molecular Genetics II</td>
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<td>ASAS/ADSA Graduate Student Symposium: Decisions, Decisions, Decisions. How to make informed decisions on your future career opportunities to developing a successful research program.</td>
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<td>Contemporary and Emerging Issues Joint with Extension Education Symposium: Science-Based Approaches to Address Consumer Concerns with the Processing and Marketing of Animal Products</td>
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<td>Extension Education</td>
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<td>Extension Education Symposium: Models for Dairy Production Decision Making</td>
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<td>Growth and Development: Fetal Development</td>
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<td>Animal Health: Calf Health, Respiratory Disease, etc.</td>
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<td>Lactation Biology</td>
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<td>Breeding &amp; Genetics Workshop</td>
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<td>ASAS Business Meeting</td>
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<td>Physiology and Endocrinology: Livestock Physiology</td>
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<td>(10:00–10:30 am) ADSA Business Meeting</td>
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<td>Milk Protein &amp; Enzymes Symposium</td>
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<td>Breeding and Genetics: Beef Cattle &amp; Sheep Breeding</td>
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<td>Physiology and Endocrinology: Metabolic Physiology</td>
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<td>CSAS Symposium: Functional Foods, Probiotics and Animal Health</td>
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<td>Nonruminant Nutrition: Minerals and Vitamins</td>
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<td>Production, Management and the Environment: General</td>
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<td>Beef Species: Health, Efficiency and Beef Quality</td>
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<td>(10:30 am–5:00 pm) Mixed Models Workshop</td>
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<td>(4:30–6:00 pm) Closing Reception</td>
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<td>(11:30 am–12:30 pm) ADSA-ASAS Joint Executive Committee Meeting</td>
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<td>ADSA Production Division Symposium: Driving Forces in the Dairy Industry That Will Change Dairy Farm Management</td>
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<td>ADSA-ASAS Joint Executive Committee Meeting</td>
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<td>(2:00–4:00 pm) ARPAS Exam</td>
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<td>Physiology and Endocrinology Symposium: Impact of Gonadal Steroids on Brain Development and Function</td>
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<td>Ruminant Nutrition Research Methods</td>
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<td>Mixed Models</td>
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<td>513ab</td>
<td>Production, Management and the Environment: Beef</td>
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<td>Forages and Pastures: Grazing and Pasture Utilization</td>
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<td>Nonruminant Nutrition: Fats and Oils</td>
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<td>521a</td>
<td>Hospitality Room</td>
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<td>525a</td>
<td>(8:30 am–5:00 pm) Writers' Workshop</td>
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Future Meeting Dates

2010
Denver, Colorado
ADSA®-ASAS-PSA-Western ASAS
July 11-15

2011
New Orleans, Louisiana
ADSA®-ASAS
July 11-14