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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Proven Consistency & Results  ■  “Non-Ruminant Blend”
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Randy Cawood, Eastern Regional Sales
rcawood@bakerbro.com 864-446-3396
Ed Gilman, Central Regional Sales
egilman@bakerbro.com 417-725-1961
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.
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[adsa.asas.org/meetings/2009](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>Event Type</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poster sessions</td>
<td>7:30 am–9:30 am</td>
</tr>
<tr>
<td>Scientific sessions</td>
<td>9:30 am–12:30 pm</td>
</tr>
<tr>
<td>Lunch break</td>
<td>12:30 pm–2:00 pm</td>
</tr>
<tr>
<td>Scientific sessions</td>
<td>2:00 pm–5:00 pm</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>Day</th>
<th>Time</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>Presentations</th>
<th>Submitted by</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sunday presentations</td>
<td>submitted by</td>
<td>Saturday at 3:00 pm</td>
</tr>
<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 elevator 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 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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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

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:

<table>
<thead>
<tr>
<th>Presentation Type</th>
<th>Submission Time</th>
<th>Deadline Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sunday presentations</td>
<td>submitted by</td>
<td>Saturday at 3:00 pm</td>
</tr>
<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. 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.
General Information

**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 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 meet 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
Exhibit Schedule

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Monday, July 13  
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Exhibitor Reception ........................................... 4:00 pm–6:00 pm

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

Wednesday, July 15  
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Exhibit Floor Plan

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A special thank you to our 2009 ADSA®-CSAS-ASAS Joint Meeting Exhibitors!
Exhibit Directory

Acadian Agritech
30 Brown Avenue
Dartmouth, NS B3B 1X8
Canada
Phone: (902) 468-2840; Fax: (902) 468-3474
http://www.tasco.ca
Booth(s): 515

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.

Ag Processing Inc.
PO Box 2047
Omaha, NE 68103-2047
Phone: (402) 492-3309; Fax: (402) 496-6686
http://www.amino-plus.com
Booth(s): 205

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

Alltech
3031 Catnip Hill Rd.
Nicholasville, KY 40356-8700
Phone: (859) 887-3245; Fax: (859) 887-3256
http://www.alltech.com
Booth(s): 101, 103, 200, 202

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

Aloka Ultrasound
10 Fairfield Blvd.
Wallingford, CT 06492-5903
Phone: (203) 269-5088; Fax: (203) 269-6075
http://www.alokavet.com
Booth(s): 519

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

American Dairy Science Association (ADSA)
2441 Village Green Place
Champaign, IL 61822
Phone: (217) 356-5146; Fax: (217) 398-4119
http://www.adsa.org
Booth(s): 220

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

American Society of Animal Science (ASAS)
2441 Village Green Place
Champaign, IL 61822
Phone: (217) 356-9050; Fax: (217) 398-4119
http://www.asas.org
Booth(s): 312

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.
ASAS Foundation  
2441 Village Green Place  
Champaign, IL 61822  
Phone: (217) 356-9050; Fax: (217) 398-4119  
Booth(s): 304

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.centrollifesciences.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 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, Biomaté, 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

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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.

Fort Supply Technologies LLC
1773 W. 200 N.
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.

Grober Nutrition
415 Dobbie Dr.
Cambridge, ON, N1T 1S9
Canada
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www.grobernutrition.com
Booth(s): 610

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Golden, CO 80401-5604
Phone: (303) 951-6520; Fax: (303) 951-6520
Booth(s): 320

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.

H.J. Baker & Bro. Inc.
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Westport, CT 06880-6444
Phone: (203) 682-9200; Fax: (203) 227-8351
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.
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http://www.ISLonline.org
Booth(s): 523

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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
109 Valley Road
Mt. Eden
New Zealand
Phone: (649) 623-4757; Fax: (649) 623-3012
http://www.kahneanimalhealth.com
Booth(s): 310

Kahne Ltd. sells wireless rumen sensors and telemetry equipment essential for researchers involved in rumen nutrition, animal welfare, and behavior. Using less invasive practices, Kahne wireless sensors reside in the mat of the rumen, delivering comprehensive and accurate rumen biometric measurements (pH, temperature, and pressure) from unrestrained animals.

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6120 W. Douglas Ave.
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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
Phone: (802) 656-0697; Fax: (802) 656-0500
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.
Novus International
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Saint Charles, MO 63304-5633
Phone: (314) 453-7711; Fax: (314) 576-4635
http://www.novusint.com
Booth(s): 618, 620

Novus International Inc., headquartered in St. Louis, Missouri, serves customers in more than 80 countries. An industry leader in animal nutrition and health, Novus’s products include Agrado feed ingredient, Alimet feed supplement, Activate nutritional feed acid, Acidomix preservative premixture, Mintrex organic trace minerals, Santoquin feed preservative, and other ingredients.

Omega Protein Inc.
2101 Citywest Blvd., Bldg. 3, Suite 500
Houston, TX 77042-2829
Phone: (713) 940-6108; Fax: (713) 940-6166
http://www.omegaproteininc.com
Booth(s): 501

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

Pearson
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Saddle River, NJ 07458-1813
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http://www.pearsonhighered.com
Booth(s): 402

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Booth(s): 701

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1530 Cooledge Rd.
Tucker, GA 30084-7303
Phone: (770) 493-9401; Fax: (770) 493-9257
http://www.poultryegg.org/ppfc/
Booth(s): 614

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

Prince Agri Products
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Quincy, IL 62306-1009
Phone: (217) 592-1356
http://www.princeagri.com
Booth(s): 521

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St. Hyacinthe, QC J25 8L2
Canada
Phone: (450) 771-7252; Fax: (450) 771-4509
http://www.probiotech.com
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.

Saf Agri/Lesaffre Feed Additives
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Milwaukee, WI 53214-1552
Phone: (414) 615-4138; Fax: (414) 615-4003
http://www.lfa-america.com
Booth(s): 806

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.

SOP Srl
Via Parco Alto Milanese 1
21052 Busto Arsizio
Italy
Fax: +390331353976
http://www.sopgroup.com
Booth(s): 301, 303

SOP utilizes its innovative technology with non-ionized electromagnetic fields to interfere with some selected microorganisms through their “frequential windows.” SOP products have a biohygienization effect on animal environments, reducing ammonia and pathogenic bacteria, giving better compost and fluidization of liquid manure, and eliminating odor during storage and distribution.

Soybest
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.

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

SoyPLUS is the industry leader, consistently delivering dairy bypass protein with unbeatable protein quality and intestinal digestibility. SoyPLUS contains research-proven, higher energy and rumen inert fat. SoyChlor has proven itself in effectively balancing DCAD in herd health. SoyChlor’s key ingredient is hydrochloric acid, the most palatable source of chloride available.
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32 Cornerstone Dr.
North Easton, MA 02356-2740
Phone: (540) 338-8991; Fax: (540) 338-8992
http://www.unityscientific.com
Booth(s): 703

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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.

Virtus Nutrition
520 Industrial Ave.
Corcoran, CA 93212-9629
Phone: (559) 734-3530
http://www.virtusnutrition.com
Booth(s): 206

Virtus Nutrition is leading a new era in strategic nutrition with calcium salts of omega fatty acids.

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Booth(s): 804

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Zinpro Performance Minerals, the premier source of trace minerals in the industry, deliver consistent, performance-driven results. Performance minerals must meet essential, measurable criteria based on return, response, repeatability, research, and reassurance. Zinpro Performance Minerals are uniquely designed and manufactured to be the highest bioavailable trace mineral products on the market.
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Montréal Street Map

- Fairmont The Queen Elizabeth
- Delta Centre-Ville (on University)
- Hyatt Regency Montréal
- Holiday Inn Select Montréal Centre-Ville (Downtown/Convention Centre)
- Hôtel InterContinental Montréal
- Palais des congrès de Montréal (Montréal Convention Centre)
Montréal METRO Map

Convention Center
METRO: Place d’Armes
Palais des congrès de Montréal
Level 5
Hyatt Regency

NIVEAU 6 LEVEL

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

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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
3:00 pm–5:00 pm  Registration Open (preregistered, badge and material pick-up only)  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  Delta Centre-Ville, Room 532
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, L5
8:00 am–5:00 pm  ARPS 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, 511a
11:30 am–12:00 pm  SAD Quiz Bowl Seating Test  Convention Center, 511d
12:00 pm–5:00 pm  Hospitality Lounge Open  Convention Center, 521a
12:00 pm–1:00 pm  SAD Undergraduate Midday Mixer  Convention Center, 522
12:00 pm–1:00 pm  ADSA JDS® 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
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7:30 am–9:30 am  Poster Presentations
7:30 am–8:30 am  Biomin Breakfast
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8:00 am–5:00 pm  Job Resource Center
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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
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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
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9:00 pm  Graduate Student Mixer

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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
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9:30 am–5:00 pm  Scientific Sessions
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9:30 am–11:30 am  ASAS Foundation Board of Trustees Meeting
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12:30 pm–2:30 pm  Feed Analysis Consortium  Convention Center, 520be
1:00 pm–2:30 pm  ASAS Board of Directors Meeting  Delta Centre-Ville, St. Laurent Room
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6:00 pm–8:30 pm  CSAS Awards Banquet  Delta Centre-Ville, Les Voûtes
7:00 pm–9:00 pm  CSREES Animal Growth & Nutrition Utilization  Delta Centre-Ville, La Terrasse
Annual Investigator Reception

Thursday, July 16

7:30 am–5:00 pm  CSREES Animal Growth and Nutrition Utilization Investigator Meeting  Delta Centre-Ville, Auditorium
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8:30 am–10:30 am  ADSA-ASAS Joint Executive Committee Breakfast  Delta Centre-Ville, St. Charles Room
8:30 am–11:30 am  Scientific Sessions  Convention Center
8:30 am–11:30 am  Mixed Models Workshop  Convention Center, 512ae
ADSA 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
3:00 pm–5:00 pm  Registration Open
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
10:00 am–11:00 am  SAD Officers and Advisor Meeting
11:00 am–12:00 pm  SAD Quiz Bowl Officials Meeting
11:30 am–12:00 pm  SAD Quiz Bowl Seating Test
12:00 pm–1:00 pm  SAD Undergraduate Midday Mixer
1:00 pm–5:00 pm  ADSA-SAD Quiz Bowl Seating/Preliminary Rounds
7:00 pm–8:00 pm  2009 ADSA-CSAS-ASAS Opening Session
8:00 pm–10:00 pm  2009 ADSA-CSAS-ASAS Opening Reception

Monday, July 13

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
8:00 am–6:00 pm  Commercial Exhibits & ADSA-SAD Exhibits 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
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9:30 am–10:45 am  ADSA-SAD Activities Symposium
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<td>ADSA-SAD Undergraduate Paper Presentations</td>
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<td>Exhibitor Reception</td>
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<td>7:00 pm</td>
<td>SAD Informal Mixer: Montréal On Foot</td>
<td>Meet in the Holiday Inn lobby</td>
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<td>8:00 am–1:00 pm</td>
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**Thursday, July 16**

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**OTHER EVENTS**

- Mixed Models                                                           | 179  |
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ADSA Dairy Foods Division
Schedule of Events

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

511cf

8:00 AM Welcome and Introductions

8:05 AM 1 A global perspective on the evolution of animal agriculture. R. D. Green*, Pfizer Animal Genetics, Sutton, NE.

8:50 AM 2 Impact of animal health on endocrinology and reproduction in dairy cows. D. Wolfenson*, Y. Lavon1, R. Meidan1, Z. Roth1, and G. Leitner2, 1The Hebrew University, Rehovot, Israel, 2The Veterinary Institute, Bet-Dagan, Israel.

9:35 AM 3 Challenges in matching the physiology and productivity of the modern commercial sow. G. R. Foxcroft*, University of Alberta, Edmonton, Alberta, Canada.

10:20 AM Break

10:50 AM 4 The impact of amino acid nutrition on pregnancy outcome in pigs: mechanisms and implications for swine production. G. Wu*, F. W. Bazer1, G. A. Johnson1, S. W. Kim2, and T. E. Spencer1, 1Texas A&M University, College Station, 2North Carolina State University, Raleigh.

11:35 AM Casida Award Program

Session 2: Genetic influences on animal reproduction
Chair: Rob Knox, University of Illinois

511cf


2:15 PM 6 Application of molecular and genetic tools for identification of reproductive traits to create and establish commercial lines of swine. T. Rathje*, Danbred North America, Columbus, NE.

3:00 PM Break

3:30 PM 7 Epigenetics: A mechanism of adaptation to perinatal events. R. Lane*, R. McKnight, L. Joss-Moore, Q. Fu, and X. Ke, Division of Neonatology, University of Utah Department of Pediatrics, Salt Lake City.

4:15 PM 8 Impact of dam nutrition on subsequent growth and reproduction in beef heifers. R. N. Funston*, University of Nebraska, West Central Research and Extension Center, North Platte.

OTHER EVENTS
Late Breaking/Original Research
Sponsors: Monsanto and Lallemand

510ac

3:00 PM–5:00 PM

SUNDAY ORALS
Monday, July 13

POSTER PRESENTATIONS

Animal Behavior and Well-Being

M1 Validation of footprint analysis to describe sow gait. J. Grégoire*1,2, R. Bergeron1, S. D’Allaire4, M.-C. Meunier–Salaün5, and N. Devillers1, 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 of serum HSP70 during weaning and effects of NCG and arginine on serum HSP70 in early-weaned piglets. X. Wu, X. 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. Kowsar1, A. Ninnak*2, M. Khorvash1, M. Alikhani1, and G. R. Ghorbani1, 1Isfahan University of Technology, Isfahan, Iran, 2Zanjan University, Zanjan, Iran.

M5 Automated recording of sow posture and locomotion using accelerometers. N. Devillers*1, J. Démont1,2, C. Corriveau1, J. Grégoire1,2, and R. Bergeron1, 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.

M6 The effects of farm-to-slaughter plant pig management on pork quality. L. N. Edwards*1, T. Grandin1, T. E. Engle1, M. J. Riess1, A. M. de Passillé2, and J. Rushen2, 1AAFC, Dairy and Swine R&D Centre, Ste Foy, Qc, Canada, 2University of Sherbrooke, Sherbrooke, Qc, Canada.

M7 Comparison of slaughter methods with or without previous stunning on animal welfare and bleeding efficiency in bulls. J. E. Gomes Neves1, M. J. R. Paranhos da Costa1, R. Roça1, N. G. Gregory3, and L. Fucitiano1, *Faculdade de Ciências 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. Vogel1, J. R. Claus2, T. Grandin1, G. R. Oetzel1, and D. M. Schaefer1, 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*1, J. L. Foster1, M. A. Elzo2, and G. C. Lamb1, 1North Florida Research and Education Center, Marianna, 2University of Florida, Gainesville, TN.

M10 Effect of group change on lying time and milk yield of dairy cattle. I. Guasch*1 and A. Bach1, 2IRTA Ruminant Production, Caldes de Montbui, 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*1,2, D. M. Weary3, 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.


M14 Effects of pair versus single housing on behavior and performance of dairy calves before and after weaning from milk. A. De Paula Vieira*1,2, M. A. G. von Keyserlingk1, and D. M. Weary2, 1University of British Columbia, Vancouver, BC, Canada, 2Capes Foundation, Brasilia, DF, Brazil.

M15 Flavors affect the feeding behaviour of ewes fed two unpalatable feeds. A. Mereu1, V. Giovanetti1, G. Molle2, I. Ipharraguere1, and A. Cannas1, 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. Villelazz Robichaud*1, A. M. de Passillé2, and J. Rushen2, 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-to-pyruvate ratio after repeated endotoxin (LPS) challenge in steers. T. Elsasser*1, R. Rhoads1, S. Kahl1, R. Collier2, L. Baumgard2, C. Li1, and T. Caperna1, USDA-ARS, Beltsville, MD, University of Arizona, Tucson.


M21 Effects of bluetongue virus infection on sperm quality in German test-bulls. K. Kemmerling1, D. Straet1, U. Mueller1, U. Janowitz2, and H. Sauerwein*1, Institute of Animal Science, Physiology and Hygiene Group, University of Bonn, North-Rhine-Westphalia, Germany, Rinder-Union-West, Borken, North-Rhine-Westphalia, Germany.


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. Mendonça*1, G. Lopes Jr1, M. A. Ballou2, and R. C. Chebel1, Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, Department of Animal and Food Sciences, Texas Tech University, Lubbock.

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, The Pennsylvania State University, University Park, Pennsylvania State University, University Park, PA.


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, University of British Columbia, Vancouver, BC, Canada, Agriculture and Agri-Food Canada, Agassiz, BC, Canada, Universidad Autónoma Metropolitana-Xochimilco, Coyoacán, Mexico.


M30 Effect of vitamin E supplementation on naturally acquired parasite infection in lambs. C. E. MacGlaflin1, A. M. Zajac2, K. A. Rego1, C. S. Petersson-Wolfe2, and K. H. Petersson*1, University of Rhode Island, Kingston, Virginia 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, The Pennsylvania State University, University Park, 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, The Pennsylvania State University, University Park, Estación Experimental Alfredo Volio Mata, Facultad de Ciencias Agroalimentarias, Universidad de Costa Rica.
M36 Abrupt weaning alters leukocyte subsets and functional activity of granulocytes in beef calves. E. M. Lynch1,2, B. Earley1, M. McGee1, and S. Doyle1,2. Teagasc, 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

M38 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. Esparandin1, A. Casal1, A. Graña1, V. Gutiérrez1, and M. Carriquiry1, 1School of Agronomy, UDELAR, Montevideo, Uruguay, 2School of Veterinary Medicine, UDELAR, Montevideo, Uruguay.

M39 Genetic relationships of monounsaturated fatty acid with image analysis traits in Japanese Black cattle. Y. Nakahashi1, T. Kato2, M. Nakamichi1, N. Murasawa1, Y. Hamasaki1, S. Hida1, and K. Kuchida1, Obihiro University of A & VM, Obihiro, Hokkaido, Japan, 1Tokachi Federation of Agricultural Cooperatives, Obihiro, Hokkaido, Japan.

M40 Genetic analysis of growth traits considering the average numerator relationship matrix and a hierarchical Bayes model for Nellore cattle. L. Shiotsuki1, F. F. Cardoso2, J. A. V. Silva1, and L. G. Albuquerque2, 1Universidad Estadual Paulista, Jaboticabal, Sao Paulo, Brazil, 2Embrapa Pecuaria Sul, Bage, Rio Grande do Sul, Brazil, 3Alta Genetics, Uberaba, Minas Gerais, Brazil.

M41 Estimates of genetic parameters using random regression on B-spline functions for weights from birth to mature in Nellore cattle. A. A. Boligon1, L. G. Albuquerque1, M. E. Z. Mercadante1, and R. B. Lobo1, 1Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, Sao Paulo, Brazil, 2Instituto de Zootecnia, Estação Experimental de Zootecnia de Sertãozinho, Sertãozinho, Sao Paulo, Brazil, 3Faculdade de Medicina de Ribeirão Preto, USP, Ribeirão Preto, Sao Paulo, Brazil.

M42 Estimation of genetic parameters for weights, scrotal circumference and testicular volume in Nellore cattle. A. A. Boligon1, L. G. Albuquerque1, J. A. V. Silva1, R. C. Sesana1, and J. B. Junqueira1, 1Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, Sao Paulo, Brazil, 2Alta Genetics Brasil LTDA, Uberaba, Minas Gerais, Brazil.

M43 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. Elzo2, and M. F. Ceron-Muñoz3, 1University of Antioquia, Medellín, Colombia, 2University of Florida, Gainesville, 3University of Córdoba, Montería, Colombia.

M44 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. Elzo2, and M. F. Ceron-Muñoz3, 1University of Cordoba, Monteria, Colombia, 2University of Florida, Gainesville, 3University of Antioquia, Medellín, Colombia.

M45 Genotype by environment interaction in Nellore cattle for 450 day weight. M. G. Dib1, I. D. P. S. Diaz2, F. R. de Araujo Neto2, H. N. de Oliveira3, R. B. Lobo3, and L. A. F. Bezerra3, 1FMVZ-UNESP, Botucatu, SP, Brazil, 2FCAV-UNESP, Jaboticabal, SP, Brazil, 3FMRP-USP, Ribeirão Preto, SP, Brazil.

M46 Random regression analyses using B-spline functions to model growth from birth to adult age in Canchim cattle. F. Baldi1, L. G. Albuquerque1, and M. M. Alencar2, 1Faculdade de Ciências Agrárias e Veterinárias, UNESP, Jaboticabal, Sao Paulo, Brazil, 2Embrapa Pecuária Sudeste, São Carlos (SP), Brazil.

M47 Genetic parameter estimates for growth traits in Canchim cattle using random regression models. F. Baldi1, 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.

M48 Performance group in GxE study for genetic evaluation of growth in Brazilian Nellore. L. O. C. Silva1, S. Tsuruta1, J. K. Bertrand2, A. Gondo1, L. A. Josahkian1, P. R. C. Nobre1, and A. N. Rosa1, 1University of Georgia, Athens, 2EMBRAPA, Campo Grande, MS, Brazil, 3CNPq, Brasilíia, DF, Brazil, 4ABCZ, Uberaba, MG, Brazil.

M49 Residual feed intake and reproductive performance of heifers sired by high or low RFI EBV bulls. J. M. Bormann1, D. W. Moser1, T. T. Marston1, and K. C. Olson1, 1Kansas State University, Manhattan, 2University of Nebraska, Lincoln.

M50 Association between carcass and meat quality traits, and phenotypic residual feed intake, breed composition, and temperament in Angus-Brahman multibreed cattle. M. A. Elzo1, D. D. Johnson1, D. G. Riley2, G. R. Hansen3, G. C. Lamb4, R. O. Myer5, J. G. Wasdin1, and J. D. Driver1, 1University of Florida, Gainesville, 2USDA-ARS STARS, Brooksville, FL, 3North Carolina State University, Plymouth, 4North Florida Research and Education Center, Marianna, FL.
M51  Temperature and humidity as criteria of between states differences in beef cattle growth rate. M. Lukaszewicz1,2, J. L. Williams*, J. K. Bertrand1, and I. Misztal1. University of Georgia, Athens, 2Polish Academy of Sciences, Jastrzebiec, 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. Abanikannda1, A. O. Leigh1, M. O. Akinsola1, M. Orunmuyi1, O. N. Coker1, and K. A. Binuyo*, 1Lagos State University, Ojo - Lagos, Nigeria, 2Ahmadu Bello University, Zaria, Kaduna State, Nigeria, 3& D Farms Nigeria Limited, Odeda, Ogun State, Nigeria.

M54  Analysis of androgen receptor gene in dairy bulls. C. Foresta1, A. Garolla2, D. Zuccarello2, and M. Cassandro*, 1University of Padova, Agraropolis, Legnaro (PD), Italy, 2University of Padova, Padova, Italy.

M55  Evidence for a genetic contribution to bovine viral diarrhea vaccine response in beef calves. X. Fang*, T. A. Henrickson1, C. Maltecca2, and M. G. Gonda1, 1South Dakota State University, Brookings, 2North Carolina State University, Raleigh.

M56  Estimation of genetic parameters and transmitting ability for Minnesota Johnne's milk ELISA test. S. A. Attalla1, A. J. Seykora1, J. B. Cole2, and B. J. Heins1, 1University of Minnesota, Saint Paul, 2Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 3Cairo University, Giza, Egypt.

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 M1 during manufacture and brining of feta cheese. M. M. Motawee*, D. J. McMahon2, 1National Organization for Drug Control and Research, Cairo, Egypt, 2Utah State University, Logan.

M59  The ELISA test to determine the κ-casein B contents in bulk milk samples: Practical use. A. Rossoni*, M. Malacarne2, C. Nicoletti3, and A. Summer2, 1ANARB - Italian Brown Cattle Breeders' Association, Bussolengo, Verona, Italy, 2Dip. Produzioni Animali B.V.Q.S.A Università degli Studi di Parma, Parma, Italy, 3University of Padova, Padova, Italy.

M60  Aroma profile characterization of traditional Algerian Bouhessa cheese. S. Carpino*, T. Rapisarda2, G. Belvedere1, and G. Licitra1,2, 1CoRfiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. University of Catania, Italy.

M61  Molecular characterization of Algerian cheese Bouhessa by PCR-TTGE. C. Pediliggieri1, S. Carpino*, and G. Licitra1,2, 1CoRfiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. University of Catania, Italy.

M62  Characterization of bacterial ecosystem in Pecorino Siciliano cheese produced in different areas of Sicily. C. Pediliggieri1, S. Carpino*, and G. Licitra1,2, 1CoRfiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. University of Catania, Italy.


M66  Effect of cream cheese made from freeze-dried milk powder on physicochemical properties. S. H. Kim1, S. Y. Lee1, J. Ahn2, and H. S. Kwak*, 1Sejong University, Seoul, Korea, 2Jungwon University, Chungbuk, Korea.


M68  The influence of sodium chloride on flavor of natural Cheddar cheese. M. A. Drake*, R. E. Miracle1, and D. J. McMahon2, 1North Carolina State University, Raleigh, 2Utah State University, Logan.

M69  Automatic detection of microstructural features using a statistical image processing method. G. Impoco1, L. Tuminello1, N. Fucà1, M. Caccamo*, and G. Licitra1,2, 1CoRfiLaC, Ragusa, Italy, 2D.A.C.P.A., University of Catania, Catania, Italy.

M71 Effect of aging on the rheology of full fat and low fat Cheddar-like caprine cheese. D. L. Van Hekken*1, Y. W. Park2, 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. Mohamadali* 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. Ibrahim*, D. Song1, A. Shahbazi2, and A. A. AbuGhazaleh3, 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. Yañez-Villar1, E. Paz-Gamboa*, A. Perez-Silva1, H. S. García2, and M. Montero-Lagunes3, 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. Shahbazi2, S. A. Ibrahim1, and A. A. AbuGhazaleh3, 1North Carolina A&T State University, Greensboro, 2Southern Illinois University, Carbondale.

M81 Fatty acid composition in ewe’s milk fat 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. AbuGhazaleh2, A. Shahbazi2, and Y. Murad1, 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. Drake2, E. A. Foegeding2, And C. Moraru3, 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.


M92 Condensed tannins from purple prairie clover inhibit growth of Escherichia coli O157:H7. Y. Wang*, T. A. McAllister1, S. N. Acharya1, and A. D. Iwaasa2, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, Saskatchewan, Canada.

M93 Evaluation of tannins from forages for their capacity to inhibit growth of Escherichia coli O157:H7. Y. Wang*, T. A. McAllister1, K. H. Ominski1, D. O. Krause1, and K. M. Wittenberg1, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2University of Manitoba, Winnipeg, Manitoba, Canada.


M96 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. Jonker*, P. Yu1, Y. Wang2, and M. Gruber1, 1University 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.

M97 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. Jonker*, P. Yu1, Y. Wang2, and M. Gruber1, 1University 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.

M98 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.

M99 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.

M100 Early-lactation cows fed concentrate do not respond to high-total nonstructural carbohydrates alfalfa. A. F. Brito*, G. Régimbald2, G. F. Tremblay2, A. Bertrand2, Y. Castonguay2, G. Belanger, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Université Laval, Québec, QC, Canada, 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 4Agriculture and Agri-Food Canada, Saskatoon, SK, Canada.

M101 Effects of variety and maturity at harvest time in the composition and in vitro kinetics of ruminal degradability of alfalfa hays. C. Arzola*, A. Muro1, M. R. Murphy1, O. Ruiz1, J. Salinas1, C. Rodriguez1, Y. Castillo1, and J. A. Payan1, 1Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México, 2Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México, 3Universidad Autonoma de Tamaulipas, Cd. Victoria, Tamaulipas, Mexico, 4University of Illinois, Urbana, 5INIFAP, Delicias, Chihuahua, Mexico.

M102 Diurnal variation of non structural carbohydrate concentrations in alfalfa. C. Morin*1,2, G. Belanger2, G. F. Tremblay2, A. Bertrand3, Y. Castonguay2, R. Michaud2, R. Berthiaume2, 1Université Laval, Québec, QC, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 4Agriculture and Agri-Food Canada, Saskatoon, SK, Canada.

M103 Subjectivity of qualitative assessment of corn silage by dairy nutritionists. K. E. Griswold*, P. H. Craig1, R. C. Goodling1, and A. J. Heinrichs2, 1Penn State Cooperative Extension, University Park, 2Penn State University, University Park.

M104 Use of Pleurotus ostreatus to change the nutritional quality of wheat straw. O. D. Montañez Valdez*, J. H. Avellaneda-Cevallos1, J. M. Tapia-Gonzalez1, G. Rocha-Chavez2, E. Guerra-Medina3, and E. O. Garcia-Flores, 1Centro Universitario del Sur de la Universidad de Guadalajara, Ciudad Guzmán, Jalisco, 2Universidad Técnica Estatal de Quevedo, Santo Domingo. Quevedo, Los Ríos, Ecuador, 3Centro Universitario de la Costa Sur de la Universidad de Guadalajara, Autlán, Jalisco.

M105 Effects of wilting, molasses and inoculants on alfalfa silage nutritional properties. F. Hashemzadeh Sigari1, M. Khorvash1, G. R. Ghorbani2, and A. Nekhkhah*2, 1Isfahan University of Technology, Isfahan, Iran, 2Zanjan University, Zanjan, Iran.


M107 Timothy dietary cation-anion difference, grass tetany index, and mineral concentrations predicted by near infrared reflectance spectroscopy. G. F. Tremblay*, Z. Nie1, G. Belanger1, 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 weaning goats. E. Valencia*, A. Rodríguez, and F. Rivera Melendez, University of Puerto Rico, Mayaguez, Puerto Rico.


M111 Nopal (cactus) fresh versus proteinically enriched in diets for and J. J. M. de México.

M112 Chemical composition, in vitro gas production kinetics of mesquite (*Prosopis laevigata*) pods at different stages of maturity in goats. A. Z. M. Salem1,2, R. Rojo-Rubio*, O. Vazquez-Mendoza1, D. Cardoso-Jiménez1, and B. Albarrán-Portillo1, 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. Rouquette1, A. Ortega1, D. S. Delaney1, and S. Moore1, Texas A&M University, College Station, ©Texas AgriLife Research, Overton, TX, ©Texas A&M University, Kingsville, ©King 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. Burns1, N. Karrow2, L. Schaeffer2, and B. A. Mallard1, University of Guelph Department of Pathobiology, Guelph, Ontario, Canada, 1Centre for Genetic Improvement of Livestock, Guelph, Ontario, Canada, 2Gencor 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, Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, 1Animal Science Dept., Laval University, Québec, QC, Canada, 2Centre for Genetic Improvement of Livestock, Guelph, Ontario, Canada, 3LTE, Hydro-Québec’s Research Institute, Shawinigan, QC, Canada.


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. Ball1,2, Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada, 1Research Institute, Hospital for Sick Children, Toronto, Ontario, Canada.

M119 A modified Ovsynch protocol using pH or hCG in lactating dairy cows. M. B. Gordon1, R. Rajamahendran1, M. G. Colazo2, and D. J. Ambrose1, 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. Castellano1,2, I. Audet1, J. -P. Laforest2, P. Y. Chouinard1, and J. J. Matte1, Dairy and Swine R&D Centre, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 1Department of Animal Sciences, Québec city, QC, Canada.
**Graduate Student Paper Competition**  
**National ADSA Production MS Poster**  
**Chair: Jeffrey S. Stevenson, Kansas State University**

M123  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.

M124  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.

M125  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.


M128  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.


M132  Dry matter intake measurements in commercial tie-stall dairy herds. M. W. Dekleva*1, C. D. Dechow1, J. M. Daubert1, J. W. Blum2, and G. A. Varga1, 1The Pennsylvania State University, University Park, 2University of Bern, Bern, Switzerland.

**Graduate Student Paper Competition**  
**National ADSA Production PhD Poster**  
**Chair: Jeffrey S. Stevenson, Kansas State University**

M133  Metabolism of ferulic acid in ram lambs. M. A. Soberón* and D. J. R. Cherney, Cornell University, Ithaca, NY.


M135  Molecular cloning, distribution and ontogenetic expression of b0,+AT and the oligopeptide transporter PepT1 mRNA in Tibetan suckling piglets. W. Wang*, G. Wu1, W. Gu1, T. Li1, M. Geng1, 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.


M137  Polymorphisms in lipogenic genes and variations in milk fatty acid composition in Holstein dairy cows. R. A. Nafikov*, J. P. Schoonmaker2, J. M. Reecy2, D. Moody-Spurlock1, J. Minick-Bormann3, K. J. Koehler4, and D. C. Beitz2, 1Iowa State University, Ames, 2Kansas State University, Manhattan.

M138  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, LaPocatière, 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. Lengi3, 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. Dong1, 2, J. Q. Wang*, 1, 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, 2Yangzhou University, Yangzhou, China.

M142  Responses of milk protein and mammary amino acids metabolism to duodenal soybean small peptides 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. Wang*, 2, 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*, 1, Q.-H. Sheng2, Z.-G. Zhang3, Q. Gen4, and L.-W. Zhang5, 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, Shingjiazhuang city, China.

M147  Effect of staged ovariectomy on mammary histology and transcript abundance in prepubertal heifers. B. T. Velayudhan*, 1, R. M. Akers2, B. P. Huderson1, A. Rowson-Baldwin1, R. C. Hovey1, and S. E. Ellis1, 1Virginia Polytechnic Institute and State University, Blacksburg, 1University of California, Davis, 2Clemson 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*, 1, 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*, 1, K. J. Harvatine1, J. Monks1, M. C. Neville1, Y. R. Boisclair1, and D. E. Bauman1, 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. Huderson*, 1, S. E. Ellis1, and R. M. Akers2, 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. Safa, A. Heravi, Moussavi*, M. Danesh Mesgaran, A. Golian, and A. Soleimani, 1Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Khorasan Razavi, Iran, 2Islamic Azad University-Kashmar Branch, Kashmar, Khorasan Razavi, Iran.


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**Meat Science and Muscle Biology 1**


M165  Interaction of dietary vitamin D3 and sunlight exposure on meat tenderness and color of Bos indicus cattle. A. R. Lobo Jr.*, E. F. Delgado, G. B. Mourão, A. Berndt, and J. J. A. A. Demarchii, 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 dissectible fat and muscle from the 9–11th rib section of beef cattle. R. B. Ribeiro*, R. D. Rhoadesi, L. O. Tedeschi, S. E. Martin, and S. F. Crouse, 1Texas A&M University, Commerce, 2The King Ranch Institute, Kingsville, TX, 3Texas A&M University, College Station.


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


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. Souza*, T. I. Ferreira, and J. C. Hadlich, 1UNIDERP/ANHANGUERA, Campo Grande, Mato Grosso do Sul, Brazil, 2IAGRO, 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


M177 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*, A. D. Damiran, and W. N. Ortin, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

M178 Effects of various cereals on nursery pigs: Gastrointestinal bacterial populations. Y. Liu*, M. Rossoni, J. Barnes, and J. E. Pettigrew, University of Illinois, Urbana.

M179 Effects of altering the syrup inclusion rate and the dryer recycling rate on DDGS composition and digestibility in pigs. K. A. Houin*, B. E. Aldridge, B. T. Richert, A. L. Sutton, and J. S. Radcliffe, Purdue University, West Lafayette, IN.

M180 Combined usage of corn distillers solubles and corn steep water for liquid fed growing-finishing pigs. C. L. Zhu*, D. We, and C. F. M. de Lange, University of Guelph, Guelph, ON, Canada.

M181 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, 1Hawaii Pacific University, Honolulu, 2University of Hawaii at Manoa, Honolulu.

M182 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.

M183 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 C. J. López-Bote3, 1Universidad Politécnica de Madrid, Madrid, Spain, 2Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain, 3Universidad Complutense de Madrid, Madrid, Spain.

M184 Nutritive utilization of protein and amino acids from raw cowpea flour (Vigna unguiculata) in growing rats. G. Kapravelou1, J. Martino*2, E. Nebot1, J. M. Porres1, and I. Fernández-Figares1, 1University of Granada, Granada, Spain, 2Spanish Research Council, CSIC, Granada, Spain.

M185 Influence of sunflower seed meal on histological alterations of broiler chickens. S. Salari*, H. Nassiri Moghadam, J. Arshami, A. Golan, and M. Maleki, Ferdowsi University of Mashhad, Mashhad, Iran.

M186 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 Kempen12, and V. Fellner1, 1North Carolina State University, Raleigh, 2Provim, RIC, Brussels, Belgium.


M188 Influence of sunflower seed meal (SFSM) on body organ weights and blood parameters of broiler chickens. S. Salari*, H. Nassiri Moghadam, J. Arshami, and A. Golan, Ferdowsi University of Mashhad, Mashhad, Iran.


M190 Effect of hydrothermally processed corn on fecal digestibility of energy in cannulated roosters. L. Babinszky* and J. Tossenberger, Kaposvár University, Kaposvár, Hungary.


M192 Feeding flax to late-pregnant and lactating sows: Effects on sow immunity and antibody transfer to their piglets. M. Lessard*, H. V. Pettit, A. Gigüere, and C. Farmer, Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada.

M193 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, 1University of Illinois, Urbana, 2United States Department of Agriculture, Beltsville, MD.


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. Giguère, M. Lessard, and H. V. Pettit, 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.

M200 Variation and relationships in nutrient and mineral composition for six species of whole fish commonly used as animal feeds. K. S. Yamamoto*, J. R. Carpenter*, S. Atkinson*, L. Polasek*, and H. Zaleski*, University of Hawaii at Manoa, Honolulu, Alaska SeaLife Center, Seward, AK.

M201 In vitro starch kinetics hydrolysis and fermentation of field peas (Pisum sativum). C. A. Montoya, P. Kish, and P. Letterme*, 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. Klarie, B. A. Slominski, A. Brüllé-Babel, and C. M. Nyachoti, University of Manitoba, Winnipeg, Manitoba, Canada.


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


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. Cromwell, P. H. Simmins, and A. Owusu-Asiedu*, University of Kentucky, Lexington, Southern Illinois University, Carbondale, Danisco Animal Nutrition, Marlborough, UK.

M215 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. Pfeifer1, E. Schmitt1, J. W. Silva Neto1, L. T. Hax1, M. M. Antunes1, F. A. B. Del Pino1, G. R. Paludo2, and M. N. Corréa*1, 1Federal University of Pelotas, Brazil, 2University of Brasília, Brazil.

M216 TNFα and adipocyte-hepatic metabolism at drying off and during early lactation in dairy cows. H. A. van Dorland1, H. Sadri2, and R. M. Bruckmaier1, 1University of Bern, Vetsuisse Faculty, Veterinary Physiology, Bern, Switzerland, 2Isfahan University of Technology, Department of Animal Science, Isfahan, Iran.

M217 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.

M218 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.

M219 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. Nasrarian, M. Danesh Mesgaran, R. Valizadeh, and A. Parand, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.

M220 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. Nasrarian, M. Danesh Mesgaran, and R. Valizadeh, Excellent Center for Animal Science, Ferdowsi University of Mashhad, Iran.


M224 Hematological profile of confined ewes fed corn silage. J. P. F. Silveira1, J. L. C. B. Reis*2, M. A. Factori1, D. H. Vieira1, V. L. Tierzo1, L. F. D. Medeiros1, and C. Costa1, 1São Paulo State University, Botucatu, SP, Brazil, 2University of Agrarian Sciences - University of Marilia, 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.

M225 Effects of lactation and pregnancy on metabolic and hormonal responses of Holstein dairy cattle. I. M. Thompson*, R. L. Cerri1, I. H. Kim1, A. D. Ealy1, P. J. Hansen1, C. R. Staples1, and W. W. Thatcher1, 1University of Florida, Gainesville, 2Chungbuk National University, South Korea.


M227 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.


M229 Relationships between dry matter intake (DMI), plasma progesterone (P4), and liver catabolic enzymes in lactating dairy cows. O. G. Sa Filho*, C. O. Lemley1, 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.

M230 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*, J. Kraft1, H. M. Dann2, and A. L. Lock1, 1University of Vermont, Burlington, VT, 2William H. Miner Agricultural Research Institute, Chazy, NY.
M231  Effects of BCS and level of concentrate feeding during early lactation on plasma concentrations of blood metabolites in pasture–fed dairy cows. F. Y. Obese1,2, T. E. Stirling1, C. R. Stockdale1, K. L. Macmillan1, A. R. Egan1, and S. Humphrys1, 1CSIRO Animal Research Institute, Accra, Ghana, 2School of Agriculture and Food Systems, the University of Melbourne, Melbourne, Victoria, Australia.

M232  Metabolic profile of the hypocalcemic 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 periestrual 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. Smith2, 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 performances of broiler breeder hens over the reproductive season. C. Brèque1,2, C. Coss1,2, C. Lessard1,2, R. Gervais2, D. Venne1, M. R. Lefrançois1, P. Y. Chouinard2, G. Vandenberg2, and J. L. Bailey1,2, 1Centre de recherche en biologie de la reproduction, Québec, QC, Canada, 2Couvoir Scott Ltée, 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. Astessiano*1, R. Perez-Clariget1, G. Quintans2, P. Soca1, 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. Quintans1,2, G. Banchero2, G. Roig1, 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-Foren1, M. Carriquiry2, V. Artegoitia1, D. Laborde1, 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. Banchero1, 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*, W. J. Weber2, W. A. House1, 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**, 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 depots of goats. M. Mielenz* and H. Sauerwein, University 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. Vonnahme, Department of Animal Sciences, North Dakota State University, Fargo.


M244  Effects of heat stress on glucose homeostasis and metabolic response to an endotoxin challenge in Holstein steers. R. P. Rhoads*, S. R. Sanders1, L. Cole1, M. V. Skrzypek1, T. H. Elsasser2, G. C. Duff3, 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. Griniari2, V. Toivonen1, and K. J. Shingfield**1, 1BASF-AG, Offenbach/Queich, Germany, 2University of Helsinki, Helsinki, Finland, 3MTT Agrifood Research Finland, Jokioinen, 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. Lima1, J. Fetrow1, and R. C. Chebel1, 2
Vernacular College Cooperative Extension, University of California Davis, Tulare, 2
Department of Animal Science, University of Florida, Gainesville, 3
Department of Veterinary Population Medicine, University of Minnesota, Saint Paul.

Spruce Haven Farm, LLC, Union Springs, NY, 4
Select Sires, Inc, Plain City, OH.

M248 What percentage of Nellore (Bos indicus) bulls exhibit fertility-associated antigen on sperm membranes? J. C. Dalton*, L. Deragon*, and J. L. M. Vasconcelos*, 1
University of Idaho, Caldwell, 2
Alta Genetics Brazil, Uberaba, MG, Brazil, 3
FMVZ-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. Aréchiga2, 3
Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguascalientes, México, 2
Universidad Autónoma de Zacatecas, Zacatecas, México.

M250 Effect of total dissolved solids and sulfates in drinking water on growing heifers fed sorghum silage. J. I. Arroquy*, M. Avila1, J. Lin1, 2
University of Nebraska, Aksarben, NE, USA, 1
Farmers Feedlot Research Group, West Texas A&M University, Canyon, 2
Select Sires, Inc.

M251 Non genetics effects on reproductive traits in Nellore female: I. Gestation length. D. H. Vieira1, 2
V. C. Rodrigues1, L. F. D. Medeiros2, C. G. Barbosa1, P. F. Silveira1, V. L. Tierzo1, J. L. C. B. Reis*, and R. S. B. Pinheiro1, 2
Center of Creation of A, Rio de Janeiro, RJ, Brazil, 2
Rural Federal university of Rio de Janeiro, Seropédica, RJ, Brazil, 2
University of Sao Paulo State University, Botucatu, SP, Brazil, 2
University of Agrarian Sciences - University of Marilia, Marilia, SP, Brazil.

M252 Effects of differencing 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*, D. G. B. Demétrio2, C. C. Dias2, and J. L. M. Vasconcelos1, 1
FAMEV-UFU, Uberlandia, MG, Brazil, 1
FMVZ-UNESP, Botucatu, SP, Brazil.

M254 Effects of GnRH treatment 7 days prior return on conception rates to previous and repeat inseminations. R. L. Nebel*, J. M. DeJarnette1, and B. A. Meek2, 1
Select Sires, Inc., Plain City, OH, 1
Cache Valley/Select Sires, Logan, UT.

M255 Tasco alleviation of heat stress in dairy cows. L. B. Pompeu*, J. E. Williams1, D. E. Spiers1, R. L. Weaber1, M. R. Ellersieck1, K. M. Sargent1, N. P. Feyerabend1, H. L. Vellios1, and F. Evans2, 1
University of Missouri, Columbia, 2
Acadian Seaplants, Dartmouth, NS, Canada.

M256 Evaluation of the nitrogen balance module of the AminoCow ration evaluator. R. A. Patton*, W. W. Heimbeck2, and J. R. Patton1, 1
Nittany Dairy Nutrition, Inc., Mifflinburg, PA, 2
Evonik Degussa GmbH, Health & Nutrition, Hanau, Germany.

M257 Validation of right ruminal artery and vein as models of bovine foregut vasculature. J. L. Klotz*, L. P. Bush2, and J. R. Strickland1, 1
USDA-ARS, FAPRU, Lexington, KY, 2
University 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. Brown*, R. Godbee2, B. Coufal1, C. L. Maxwell1, J. O. Wallace1, and C. H. Ponce1, 1
Feedlot Research Group, West Texas A&M University, Canyon, 2
Morinda Agriculture, Provo, UT.

Ruminant Nutrition
By-product Feeds


M261 In situ ruminal protein degradation of whole corn or corn endosperm distiller grains. W. Z. Yang*, L. E. Armentano2, and Y. L. Li1, 1
Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2
University 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 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. Yang§, 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. Atkinson1, 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. Atkinson1, 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 corn 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. Anderson1, L. O. Tedeschi2, W. K. Krueger2, and D. J. Nisbet1, 1USDA-ARS-Food Feed Safety Research Unit, College Station, TX, 2Texas A&M University, College Station.

M271 Performance of post-weaned Holstein heifer calves fed grain mixes with glycerin as an energy source. G. Golombeski*1, M. Raeth-Knight1, B. Ziegler1, R. Larson2, D. Ziegler3, H. Chester-Jones1, and J. Linn1, 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. Zacarioni1, N. M. Lopes1, S. Sicola-Júnior2, G. S. Dias Júnior2, L. L. Bitencourt1, B. F. Carvalho1, J. R. M. Silva2, R. A. N. Pereira1, and M. N. Pereira*3, 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 cornseed hull-based diets for lactating dairy cows. J. H. Shin*1, S. C. Kim*1, 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. Abu Ghazaleh1, D. Hastings2, S. Abol-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. Munoz2, 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.
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M286 Economic analysis of alfalfa hay inclusion in wet corn gluten feed based diets for lactating dairy cows. C. R. Mullins* 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. Asadi*, G. R. Ghorbani, M. Alikhani, and M. Bagheri, Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran.


M289 Effect of roughage to concentrate ratio on ruminal parameters and protein degradability in dairy cows. L. J. Erasmus*, W. A. van Niekerk, H. Nienaber, and P. H. Robinson, University of Pretoria, Department of Animal and Wildlife Sciences, Pretoria, South Africa, 1University 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. Nikkhah*, V. Keshavarz, H. Amanloo, M. Dehghan, and M. Kazemi Bonchenari, Department of Animal Sciences, University of Tehran, Karaj, Iran, 1Department of Animal Sciences, University of Zanjan, Zanjan, Iran.


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


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


M298 Corn endosperm type influences nutrient digestibility in lactating dairy cows. J. C. Lopes*, R. D. Shaver, P. C. Hoffman, M. S. Akins, J. B. Bertics, H. Gencoglu, and J. G. Coors, Department of Dairy Science, University of Wisconsin, Madison, 1Department of Animal & Nutritional Sciences, Faculty of Veterinary Medicine, Uludag University, Bursa, Turkey, 1Department of Agronomy, University of Wisconsin, Madison.

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 structures 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. Doepel, and M. G. Colazo, 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*, H. Heravi Moussavi, and M. Abazari, 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.

M306  Varying ruminally degradable protein concentrations in the lactating dairy cow diets maintains rumen fiber digestion and outflow of nutrients. J. Cyriac*, A. G. Rius, J. A. D. R. N. Appuhamy, R. E. Pearson, J. H. Herbein, K. F. Knowlton, J. L. Firkins, and M. D. Hanigan, 1Virginia Polytechnic Institute and State University, Blacksburg, 2The Ohio State University, Columbus.


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. Souza, D. F. F. Silva, P. R. B. Piekarски, C. P. Jesus, M. N. Pereira, and R. Almeida*, 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 Bonchenari, K. Rezayazdi, M. Dehghan, A. Nikkhah*, H. Khalilvandi, V. Keshavarz, and F. Ghaziani, 1Department of Animal Sciences, Faculty of Agromony 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. Auguto Portela Santos, T. Vinhas Voltolini, A. Vaz Pires, and C. Maris Machado Brittar, 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. Auguto Portela Santos, T. Vinhas Voltolini, M. Antonio Penati, and A. Mendonça Pedroso, 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. Auguto Portela Santos, T. Vinhas Voltolini, and A. Dias Pacheco Júnior, 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. Blank, M. Zachut, and A. Arieli, 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.2.8.1) models. N. Whitehouse*, C. Schwab, T. Tylutki, D. Luchini, and B. Sloan, 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*1, N. Whitehouse1, D. Luchini2, and B. Sloan2; 1University of New Hampshire, Durham, 2Adisseo, Atlanta, GA.

M319 Rumen microbial population shifts in dairy cattle experimentally induced with subacute ruminal acidosis (SARA). E. Khafipour*, S. Li, J. 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. Khafipour*, 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*1, D. Mertz2, K. Mertz2, and R. Breunig1; 1Priority IAC, Manitowoc, WI, 2Agtech 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*1, J.-S. Eun1, A. J. Young1, and S. Peterson2; 1Utah State University, Logan, 2Zeotech 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; 1College of Animal Science, Guizhou University, Guiyang, China, 2Institute 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*1, S. Nagashima1, Y. Fujihara1, F. J. Schweigert2, K. Sawada1, A. Miyamoto1, and K. Kida1; 1Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan, 2University of Potsdam, Potsdam-Rehbrücke, Germany, 3DSM 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*1, D. M. Stevenson2, G. J. M Rosa1, P. J. Weimer2,3, and R. R. Grummer1; 1University of Wisconsin, Madison, 2USDA-ARS US Dairy Forage Research Center, Madison, WI.


M329 Relationship of dairy cattle chewing behavior with forage fragility and fiber digestibility. K. W. Cotanch*1, H. M. Dann1, C. S. Ballard2, C. S. Mooney1, R. J. Grant2, T. Eguchi2, and K. Yagi2; 1William H. Miner Agricultural Research Institute, Chazy, NY, 2Zen-Noh National Federation of Agricultural Cooperative Associations, Tokyo, Japan.


M331 Concentration of mammalian lignan enterolactone in milk of dairy cows fed different levels of flaxseed hulls. N. Gagnon*, C. Córtes, C. Benchara, 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. Wang1,2, J. Q. Wang*2, D. P. Bu2, F. D. Li2, X. K. Huo2, T. J. Guo2, H. Y. Wei2, and L. Y. Zhou2; 1Gansu Agricultural University, Lanzhou, Gansu, China, 2Chinese Academy of Agricultural Sciences, Beijing, China.
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Forages

M335  Efficiency of different chemicals in deactivation of phenolic compounds in Sainfoin (Onobrychis vicifolia Scop.), H. Khalilvandi-Behrozoozari, 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. Bannink1, J. Dijkstra1, A. J. Parsons2, S. Rasmussen3, G. R. Edwards4, E. Kebreab5, and J. France1, 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*, L. Salis1, N. D. Scollan1, and M. L. Sullivan1, 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. Kammers*, Y. Ying, and M. S. Allen, Michigan State University, East Lansing, MI.

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

M340  Protein fractionation of various whole crop silages, and effect of silage based TMR on fermentative characteristics and degradability in vitro, and ruminal degradability and whole tract digestibility of TMR by cattle. J. Shinkehru*, G. L. Jin1, S. H. Choi1, B. J. Ji1, X. Z. Li1, and M. K. Song1, 1Department of Animal Science, Chungbuk National University, Cheong-ju, 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*, L. H. Brown2, and F. N. Owens2, 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. Mozdziaik*, J. N Pettite1,2, 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. Pettite1,2, P. E. Mozdziaik1,2, 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.
### M352  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.

### M353  Introducing a “Nutritional Physiology Webinar” for animal scientists. K. J. Harvatine*, Penn State University, University Park.

### M354  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.

### M355  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 Herson, University of Florida  
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#### Animal Health
**Mastitis, Lameness, and Stress**  
**Chair:** Gina Pigheatti, University of Tennessee, Knoxville  
**Sponsors:** Elanco Animal Health and Pfizer Animal Health  
511cf

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Effect of farm, housing and management practices on the occurrence of clinical mastitis and pathogen isolation. Y. B. Hunt1 and J. K. Margerison*2, 1Massey University, Palmerston North, New Zealand, 2Plymouth University, Newton Abbot, UK.

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*1, 1Massey University, Palmerston North, New Zealand, 2Plymouth University, Newton Abbot, UK.

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. Carroll1, M. A. Ballou4, J. W. Dailey1, L. C. Caldwell3, A. N. Loyd2, N. C. Burdick2, R. C. Vann, T. H. Welsh, Jr1, and R. D. Randel3, 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.

Peripartum measures of stress, inflammation and energy status as predictors for postpartum health disorders in transition dairy cows. J. M. Huzzey*1, T. R. Overton1, D. V. Nydam1, and R. J. Grant2, 1Cornell University, Ithaca, NY, 2W. H. Miner Agricultural Research Institute, Chazy, NY.

Use of rumen temperature for health monitoring in cattle. L. E. Sims*1, T. K. Dye-Rose1, C. L. Goad2, B. P. Holland1, L. O. Burciaga-Robles1, D. L. Step1, C. R. Krehbiel1, and C. J. Richards1, 1Department of Animal Science, Oklahoma State University, 2Department of Statistics, Oklahoma State University, 3Veterinary Clinical Sciences, Oklahoma State University.

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 Siegford, Michigan State University

9:30 AM 26 Bioethical considerations of food animal products and production. W. R. Stricklin*, University of Maryland, College Park.

9:35 AM 27 Thinking critically about bioethical issues. K. K. Schillo*, University of Kentucky, Lexington.

10:05 AM Discussion

10:10 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

9:30 AM 29 Using veterinary and milk recording data for a genetic analysis of health traits. J. Moro-Méndez*1, E. Bouchard2, and R. I. Cue1, 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. Neuenschwander1, F. Miglior*2,3, J. Jamrozik1, and L. R. Schaeffer1, 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. Kistemaker*, and F. Miglior*, 1 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*, 1, J. L. Hutchison*, 2, H. D. Norman*, 3 and R. L. Baldwin, VI*. 1USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, 2USDA-ARS, Animal Improvement Programs Laboratory, Beltsville, MD.

10:45 AM  Break

11:00 AM  34  Trends for monthly changes in days open in Holsteins. M. Pszczola*, 1, I. Aguilar*, 1,3 and I. Misztal*, 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  35  Effects of milk fat composition, DGAT1 and SCD1 on fertility traits in Dutch Holstein cattle. R. M. Demeter*, 1,2, G. C. B. Schopen*, 1, A. G. J. M. Oude Lansink*, 2, M. P. M. Meuwissen*, 2 and J. A. M. van Arendonk*, 1Animal Breeding and Genetics Centre, Wageningen University, Wageningen, the Netherlands, 2Business Economics Group, Wageningen University, Wageningen, the Netherlands.

11:30 AM  36  Deriving final score from linear traits for the Italian Holstein cattle. S. Biffani, F. Canavesi*, and R. Finocchiaro, ANAFI, Cremona, Italy.


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. Wysocki*, 1, V. D. Rilington*, 2, A. M. Ramos*, 1, J. K. Lunney*, 1, and C. W. Ernst*, 1Michigan State University, East Lansing, 2ANRI, BARC, ARS, USDA, Beltsville, MD, 1Wageningen University, Wageningen, the Netherlands.

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


11:15 AM  44  Construction of LD maps for SNPs linked to susceptibility loci. L. Gomez-Raya*, University of Nevada, Reno.

11:30 AM  45  Characterization of a whole-genome map of single nucleotide polymorphisms applied to two selection lines in British dairy cattle. G. Banos* and M. P. Coffey*, 1Faculty of Veterinary Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece, 2Sustainable Livestock Systems, Scottish Agricultural College, Edinburgh, Scotland, UK.

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. Kruze, I. R. Dohoo, J. Sanchez, H. W. Barkema, J. J. Wichtel, and F. Wittwer, 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.


10:30 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*, D. J. O’Brien, N. C. Whitley, R. M. Kaplan, and J. M. Burke, 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 cinnamonaldehyde, eugenol, and capsicum 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. Cos$^{1,2,3}$, C. Brèque$^{1,2}$, R. Gervais$^{3}$, C. Lessard$^{1,2}$, D. Venne$^{1}$, M. R. Lefrançois$^{3}$, P. Y. Chouinard$^{2}$, G. Vandenberg$^{2}$, and J. L. Bailey$^{1,2}$, 1Centre de recherche en biologie de la reproduction, Québec, QC, Canada, 2Département des sciences animales, Université Laval, Québec, QC, Canada, 3Couvoir Scott Lètée, Scott Jonction, QC, Canada.

9:45 AM 54 The effect of two calving seasons on cow and calf performance in western Canada. L. C. Girardin*, A. D. Iwaasa$^{2}$, S. L. Scott$^{1}$, and S. H. Hendrick$^{1}$, 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.


10:15 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. Aschenbach$^{2}$, G. Gäbel$^{1}$, and M. Oba$^{1}$, 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. Aulhus1, W. M. Robertson1, T. A. McAllister1, D. J. Gibb1, M. E. R. Dugan1, N. Aldai2, 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.

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*1,2 and J. J. McKinnon1, 1Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, 2University of Saskatchewan, Saskatoon, SK, Canada.


12:00 PM 52  4  Genotyping for strain-level differentiation of Bifidobacterium animalis ssp. lactis. J. R. Loquasto*, E. P. Briczinski2, A. M. Roberts1, E. G. Dudley1, R. Barrangou1, and R. F. Roberts1, Pennsylvania State University, State College, 1University of Wisconsin, Madison, 2Pennsylvania State University, College of Agricultural Sciences.


Graduate Student Paper Competition
National ADSA Dairy Foods
Chair: Kayanush J. Aryana, Louisiana State University Agricultural Center
510ac

9:30 AM 65  Structure-function relationship of exopolysaccharides from lactic acid bacteria in fermented milk. M.-C. Gentès*1,2, D. St-Gelais2, and S. L. Turgeon1, STELA 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*1,2, M. Alexander2, and M. Corredig1, 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. Kacmar3, and M. Corredig2, 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. Zulewska2, M. Newbold1, and D. M. Barbano1, 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. Tippetts*1,2, S. Martini1,2, C. Brothersen1,2, and D. McMahon1,2, 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*1,2, D. J. McMahon1,2, and W. R. McManus1,2, 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. Briczinski2, A. M. Roberts1, E. G. Dudley1, R. Barrangou1, and R. F. Roberts1, Pennsylvania State University, State College, 1University of Wisconsin, Madison, 2Danisco USA Inc., Madison, WI.


11:00 AM 80 Accuracy of an on-farm blood test for pregnancy in dairy and beef cattle. J. C. Green*, D. H. Volkman*, S. E. Pook*, M. F. McGrath*, M. Ehrhardt*, A. E. Moseley*, and M. C. Lucy*, University of Missouri, Columbia, Monsanto Co., St. Louis, MO.


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


Graduate Student Paper Competition
National ADSA Production MS Oral
Chair: Mike McGilliard, Virginia Tech
513cd


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*, G. Goodell*, J. Trujillo*, and D. Wilson*, Utah State University, Logan, Dairy Authority, Greeley, CO.

10:15 AM 77 Intermediate 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. Husden, C. R. Staples, and M. Garcia, University of Florida, Gainesville.


11:00 AM 80 Accuracy of an on-farm blood test for pregnancy in dairy and beef cattle. J. C. Green*, D. H. Volkman*, S. E. Pook*, M. F. McGrath*, M. Ehrhardt*, A. E. Moseley*, and M. C. Lucy*, University of Missouri, Columbia, Monsanto Co., St. Louis, MO.


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


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*, D. C. Beitz, T. A. Reinhardt, and J. D. Lippolis, Iowa State University, Ames, National 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.

10:45 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*1, J. W. West1, J. Bernard1, J. Loften2, and D. R. Ware2, 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*1, 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 stocking density on the feeding and standing behavior of postpartum dairy cows. P. D. Krawczel*1,2, D. M. Weary1, R. J. Grant1, and M. A. G. von Keyserlingk3, 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 anthelmintices in developing countries: A case study among livestock farmers in Ghana. W. Addah*1, J. Baah2, 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


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*1, B. A. Slominski1, G. Rakow2, and D. Hickling3, University 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*1, L. Oatway1, R. T. Zijlstra2, 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. Mogielińska, 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 107 Ammonia emissions from beef feedlot cattle fed corn-based backgrounding 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 108 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. Boland2, K. J. Hart2, P. A. Foley2, and D. A. Kenny2, *Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 1School of Agri., Food Sci. & Vet. Med., University College Dublin, Belfield, Dublin, Ireland.


10:30 AM 110 On-farm evaluation and demonstration of ammonia reduction best management practices (BMPs) for feedlots and dairies. N. M. Marcillac-Embertson*, J. Pritchett, J. L. Collett, and J. G. Davis, Colorado State University, Fort Collins.


11:00 AM 112 DairyGHG: A tool for evaluating the greenhouse gas emissions and carbon footprint of dairy production systems. C. A. Rotz* and F. Montes, USDA/ARS, University Park, PA.


11:30 AM 114 Effects of urine application on chemistry of feedlot pen surfaces. N. A. Cole*,1, A. M. Mason1, R. W. Todd1, and D. B. Parker2, 1USDA-ARS-CPRL, Bushland, TX, 2West Texas A&M University, Canyon.

11:45 AM 115 Modifying available grazing time to increase dairy cow urine capture. C. E. F. Clark*,1, K. L. M. McLeod2, C. B. Glassey1, P. Gregorini1, K. Betteridge2, and J. G. Jago1, 1DairyNZ, Hamilton, Waikato, New Zealand, 2AgResearch, Palmerston North, Manawatu, New Zealand.

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

9:30 AM 116 Production of angiotensin-like protein 4 in ruminal tissue is decreased with increasing dietary fermentability. L. K. Mamedova*,1, G. B. Penner1, K. A. Beauchemin3, M. Oba2, and B. J. Bradford2, 1Kansas State University, Manhattan, 2University of Alberta, Edmonton, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, AB, Canada.

9:45 AM 117 Mammary transcriptomics response to milk fat-depressing or milk fat-enhancing diets in lactating dairy cows. G. Invernizzi1,2, B. J. Thering1, D. E. Graugnard1, P. Planti11, M. A. McGuire3, G. Savoini2, and J. J. Loor1, 1University of Illinois, Urbana, 2University of Milan, Milan, Italy, 3University of Idaho, Moscow.

10:00 AM 118 Mammary glucose metabolism in response to energy and/or protein supply in lactating dairy cows. S. Lemosquet*1,2, F. Bardey1,2, H. Rulquin1,2, H. Lapierre1, and J. Guinard-Flament1,1, 1INRA, Rennes, France, 2Agrocampus ouest, Rennes, France, 3Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.

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<td>Changes in deposition of visceral adipose tissues and expression of lipogenesis-related genes induced by diets with different energy levels in non-lactating cows. P. Ji, J. J. Loor, A. Nikkhold, M. Bionaz, N. A. Janovick, and J. K. Drackley, <em>Department of Animal Science, University of Illinois, Urbana.</em></td>
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<td>11:00 AM</td>
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<td>Nitrogen recycling in lactating dairy cows consuming diets predicted by CPM Dairy to be deficient in either ruminal N or metabolizable protein. E. B. Recktenwald, D. A. Ross, and M. E. Van Amburgh, <em>Cornell University, Ithaca, NY.</em></td>
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<td>11:15 AM</td>
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<td>Effect of metabolizable methionine (MET) and lysine (LYS) concentrations on milk production and N utilization in lactating dairy cows. Z. H. Chen*, G. A. Broderick¹, N. D. Luchini¹, B. K. Sloan¹, and E. Devillard⁴. ¹University of Wisconsin, Madison, ²U. S. Dairy Forage Research Center, Madison, WI, ³Adisseo USA Inc., Alpharetta, GA, ⁴Adisseo, France S.A.S., Commentry, France.</td>
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<td>11:30 AM</td>
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<td>Effects of jugular infused branched-chain amino acid supplementation on milk protein synthesis in high producing dairy cows. J. A. D. R. N. Appuhamy*, J. R. Knapp², C. A. Umerberger³, and M. D. Hanigan³, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²Fox Hollow Consulting, LLC, Columbus, OH.</td>
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<td>11:45 AM</td>
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<td>Effect of carbohydrate source on rumen fluid pH and in vitro gas production (GP) in heifers fed pasture silage. A. Britos*, A. Mendoza¹, M. Clarament³, M. Karlen¹, G. Kelly¹, L. Magallanes¹, S. Ramirez¹, A. Zunini¹, J. L. Repetto¹, and C. Cajarville¹, ¹Department of Animal Nutrition, Faculty of Veterinary, Udelar, Montevideo, Uruguay, ²Department of Bovines, Faculty of Veterinary, Udelar, Montevideo, Uruguay.</td>
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<td>12:00 PM</td>
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<td>TMR particles breakdown through ingesta mastication of dairy cows. I. Schadt*, J. D. Ferguson², G. Azzaro¹, C. Guardiano¹, R. Petriglieri¹, and G. Licitra¹, ¹CoFiLaC, Regione Siciliana, Ragusa, Italy, ²University of Pennsylvania, School of Veterinary Medicine, Kennett Square, ³D.A.C.P.A. University of Catania, Italy.</td>
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### Ruminant Nutrition

**Growing Cattle and Beef Breeding Herd**

**Chair: Cathy Bandyk, Quality Liquid Feeds**

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<tr>
<th>Time</th>
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<tr>
<td>9:45 AM</td>
<td></td>
<td>Residual feed intake in Nellore heifers selected for growth. R. H. Branco¹, S. F. M. Bonilha¹, D. P. D. Lanna¹, L. A. Figueiredo¹, L. Calegare¹, and A. G. Razook¹, ¹Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, São Paulo, Brazil, ²Departamento de Zootecnia, Esalq/USP, Piracicaba, São Paulo, Brazil, ³Nutron Alimentos LTDA, Toledo, Paraná, Brazil.</td>
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<tr>
<td>10:00 AM</td>
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<td>Relationships between residual feed intake and apparent nutrient digestibility, in vitro methane producing activity and VFA concentrations in growing Brangus heifers. W. K. Krueger¹, ², G. E. Carstens¹, ², R. R. Gomez⁴, B. M. Bourg², P. A. Lancaster², L. J. Slay¹, J. C. Miller¹, R. C. Anderson³, S. M. Horrocks³, N. A. Krueger¹, and T. D. A. Forbes⁴, ¹Intercollegiate Faculty of Nutrition - Texas A&amp;M University, College Station, ²Department of Animal Science - Texas A&amp;M University, College Station, ³USDA, ARS, Food and Feed Safety Research Unit, College Station, TX, ⁴Texas AgriLife Research - Texas A&amp;M University, Uvalde.</td>
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<td>10:30 AM</td>
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<td>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, <em>North Carolina State University, Raleigh.</em></td>
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<td>10:45 AM</td>
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<td>Effect of energy source on leucine utilization and nitrogen retention in growing steers. K. S. Spivey*, E. C. Tltgmeyer, and M. L. Jones, <em>Kansas State University, Manhattan.</em></td>
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<tr>
<td>11:00 AM</td>
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<td>Steer performance and digestibility when fed stocker diets with soyhull, corn gluten feed and distillers grain. G. M. Hill*, V. A. Corriher¹, D. J. Renney¹, and A. J. Nichols¹, ¹The University of Georgia, Tifton, ²Texas AgriLife Ext. Ctr., Overton, TX.</td>
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<td>Time</td>
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<tr>
<td>11:30 AM</td>
<td>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. Jarosz¹, L. W. Douglass¹, and S. L. Archibeque¹, ¹Colorado State University, Department of Animal Sciences, Fort Collins, ²University of Maryland, Department of Animal and Avian Sciences, College Park.</td>
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<tr>
<td>11:45 AM</td>
<td>A meta-analysis evaluation of supplementing dried distillers grains plus solubles to cattle consuming forage based diets. W. A. Griffin*, V. R. Bremer², T. J. Klopfenstein¹, L. A. Stalker¹, L. W. Lomas¹, J. L. Moyer⁵, and G. E. Erickson¹, ¹University of Nebraska, Lincoln, ²West Central Research and Extension Center, North Platte, NE, ³Southeast Agricultural Research Center, Parsons, KS.</td>
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<td>12:15 PM</td>
<td>Effect of ZADO®, as enzymes from anaerobic bacterium, on extent of ruminal fermentation, nutrient digestibilities and average daily gain in steers. H. Gado*¹ and B. E. A. Borhami², ¹Ain-Shams University, Dept. of Animal Production, Faculty of Agriculture, Cairo, Egypt, ²Alexandria University, Dept. of Animal Production, Faculty of Agriculture, Alexandria, Egypt.</td>
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**SYMPOSIUM**

**Teaching/Undergraduate and Graduate Education**

**Enhancing the Writing Experience**

**Chair: C. L. Hicks, University of Kentucky**

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<tr>
<th>Time</th>
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<tr>
<td>9:35 AM</td>
<td>Making the writing experience right. D. K. Aaron*, University of Kentucky, Lexington.</td>
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<td>10:15 AM</td>
<td>Discussion</td>
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<td>10:20 AM</td>
<td>Incorporating journals and journal writing into the teaching and learning process. A. Zimmerman*, The Ohio State University, Wooster.</td>
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<tr>
<td>11:20 AM</td>
<td>Break</td>
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<tr>
<td>11:30 AM</td>
<td>Incorporating writing assignments in large animal science courses. J. A. Sterle*, Texas A&amp;M University, College Station.</td>
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<tr>
<td>11:40 AM</td>
<td>Journal writing. C. L. Hicks*, University of Kentucky, Lexington.</td>
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<tr>
<td>12:00 PM</td>
<td>Panel discussion. All participants.</td>
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**SYMPOSIUM**

**ASAS-ADSA Cell Biology Symposium**

**Chair: B. W. Hess, University of Wyoming**

**Sponsors: ASAS, ADSA, USDA, and EAAP**

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<tr>
<th>Time</th>
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<tr>
<td>10:00 AM</td>
<td>Introductions. B. W. Hess.</td>
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<td>10:05 AM</td>
<td>Redox regulation of cysteine-dependent enzymes. R. P. Guttmann*, University of Kentucky, Lexington.</td>
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<td>11:05 AM</td>
<td>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.</td>
</tr>
</tbody>
</table>
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

**11:00 AM** 149 Consumer fluid milk choices: Balancing nutrition, safety, cost, and emotions. K. Bolen* and L. Timms, Iowa State University, Ames.

**11:15 AM** 150 Raw milk: The controversy continues. S. Stelly*, Louisiana State University, Baton Rouge.

**11:30 AM** 151 Human health benefits of bovine colostrum. P. F. Welch*, D. R. Winston, and R. E. James, Virginia Polytechnic Institute and State University, Blacksburg.

**11:45 AM** 152 Importance of conventional dairy products in young adult diets. K. M. Stomack* and E. L. Karcher, Michigan State University, East Lansing.

**12:00 PM** 153 Risks associated with raw milk consumption. A. M. Harshbarger*, The Pennsylvania State University, University Park.

**12:15 PM** 154 Defending the US milk supply with a novel bulk milk transportation security system. C. N. Gravatte* and C. D. Thompson, University of Kentucky, Lexington.

**12:30 PM** 155 On farm pasteurization: Finding a niche market. J. T. Price*, Clemson University, Clemson, SC.

**Graduate Student Paper Competition**

**ADSA Southern Section**

**Chair: Albert DeVries, University of Florida**

513ab

**11:30 AM** 156 Phosphorus and other nutrient disappearance from plants containing condensed tannins using the mobile nylon bag technique. S. Pagán-Riestra*1,2, J. P. Muir1,2, B. D. Lambert2, L. O. Tedeschi1, and L. Redmon3, 1 Texas A&M University, College Station, 2 Texas AgriLife Research, Stephenville, TX, 3 Texas AgriLife Extension, College Station, TX.


**12:00 PM** 158 Effect of probiotics and yeast culture on rumen development and growth of dairy calves. J. M. Laborde*, C. C. Williams, C. Leonardi, C. F. Hutchison, B. F. Jenny, B. L. Fisher, and A. H. Dolejsiova, Louisiana State University AgCenter, Baton Rouge.

**SYMPOSIUM**

**Dairy Foods**

**Milk Protein Fractionation Symposium**

**Chair: Lloyd Metzger, South Dakota State University**

**Sponsor: DMI**

513cd

**1:30 PM** 159 Introduction to milk protein fractionation symposium. L. E. Metzger*, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

**1:40 PM** 160 Global use, opportunities and challenges for dairy proteins. P. Tong*, Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.

**2:05 PM** 161 Isolation of serum proteins from milk. D. M. Barbano*1 and J. Zulewska2, 1 Cornell University, Ithaca, NY, 2 University of Warmia and Mazury, Olsztyn, Poland.

**2:30 PM** 162 Comparison of the functional properties of whey proteins isolated from milk or whey. E. A. Foegeding*1, J. Zulewska2, D. M. Barbano2, M. A. Drake1, P. J. Luck1, Y. H. Yong2, B. Vardhanabhuti3, and T. Berry4, 1 North Carolina State University, Raleigh, 2 Cornell University, Ithaca, NY.
2:55 PM 163 Comparison of the flavor chemistry and sensory properties of whey proteins isolated from milk and whey. M. A. Drake*1, D. M. Barbano2, E. A. Foegeding1, J. Zulewska2, and M. Newbold2, 1North Carolina State University, Raleigh, 2Cornell University, Ithaca, NY.

3:20 PM 164 An integrated processing system to produce beta-casein, native whey protein and casein concentrates from whole milk. J. Lucey*1 and K. Smith2, 1Department of Food Science, University of Wisconsin, Madison, 2Wisconsin Center for Dairy Research, University of Wisconsin, Madison.

3:45 PM 165 Charged ultrafiltration membranes for whey protein fractionation. M. Etzel* and S. Bhushan, University of Wisconsin, Madison.

4:10 PM 166 Utilization of supercritical carbon dioxide to produce milk protein fractions. P. M. Tomasula*, L. M. Bonnailie, and P. X. Qi, Dairy Processing and Products Research Unit, USDA/ARS/ERRC, Wyndmoor, PA.

4:35 PM 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
510bd

2:00 PM 167 Advances in colostrum management. S. Godden*1, S. Wells1, J. Stabel2, D. Haines3, R. Bey1, J. Fetrow1, P. Pithua1, and M. Donahue1, 1University of Minnesota, St. Paul, 2USDA, ARS, National Animal Disease Center, Ames, IA., 3University of Saskatchewan, Saskatoon, SK, Canada.

2:30 PM Development of vaccination programs that enhance heifer immune systems. G. Goodell, Dairy Authority, Greeley, CO.

3:00 PM Strategies to minimize the impact of heat stress on heifer health and performance. J. W. West*, University of Georgia, Tifton.

3:30 PM Differences in health and survivability between purebred and crossbred heifers. B. Cassell, Virginia Polytechnic Institute and State University, Blacksburg.

4:00 PM Producer’s perspective on heifer health challenges in the Southeast and strategies to manage them. B. Patrick, Veterinarian, GA.

4:30 PM ADSA Southern Section Business Meeting

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

2:00 PM 169 The impact of genomic selection on A.I. companies, today and tomorrow. K. L. Westaby* and L. H. Kilmer, Iowa State University, Ames.

2:15 PM 170 Pre-planning considerations for on-farm dairy processing enterprises. E. A. Chaney*, University of Kentucky, Lexington.

2:30 PM 171 Bovine genomics: Mapping the future of the dairy industry. V. Eubanks*, Clemson University, Clemson, SC.


3:00 PM 173 Advanced technology in gender selection: Sexed semen. H. Parkins* and S. Washburn, North Carolina State University, Raleigh.

3:15 PM 174 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. Kononoff, 2 J. F. Pedersen, 2 A. G. Geis, 2 and A. M. Gehman, 2 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 weanling goats when fed a mixed concentrated diet with dried distillers grains compared to a pelleted concentrate. J. Popowski**, M. Raeth-Knight, T. Walsh, J. Linn, and R. Larson, 1University of Minnesota, St. Paul, 2Hubbard Feeds, Mankato, MN.


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.

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<tr>
<td>2:45 PM</td>
<td>Effects of feeding OmniGen-AF on neutrophil-mediated killing of Archanobacterium pyogenes.</td>
<td>A. Rowson*, Y.-Q. Wang, S. B. Puntenney, and N. E. Forsberg, OmniGen Research, Corvallis, OR.</td>
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<tr>
<td>4:00 PM</td>
<td>Protective effect of polysaccharide produced by Enterobacter cloacae 20206 on cyclophosphamide-induced suppression of immune functions in mice.</td>
<td>M. Jin, Y. Wang, X. Yang, C. Xu, and Z. Lu, Institute of Feed Science, Zhejiang University, Hangzhou, Zhejiang Province, China.</td>
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**SYMPOSIUM**

**Bioethics**

**Working through Bioethical Issues in Practice**

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

**Sponsor:** Monsanto

**511be**

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<tr>
<td>2:00 PM</td>
<td>Introductions. J. Siegford, Michigan State University.</td>
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</table>
3:20 PM Break

3:50 PM 202 Utilization of next generation sequencing technologies for development of a high-density pig SNP genotyping platform. R. P. M. A. Crooijmans*,1, M. A. M. Groenen1, and L. B. Schook2, 1Wageningen University, Wageningen, the Netherlands, 2University of Illinois, Urbana.

4:25 PM 203 Bioinformatics requirements to apply whole genome prediction in livestock. D. Garrick*, Iowa State University, Ames.

5:00 PM Panel discussion

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.

2:00 PM Introduction. Kelly Swanson.

2:10 PM 204 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.


3:00 PM 206 The big “S” supplementation in exotic animal diets. N. A. Irlbeck*, Colorado State University, Fort Collins, CO.

3:25 PM Break

3:45 PM 207 From arthritis to zinc deficiency, veterinarians are increasingly recommending pet supplements. P. Brown*, Nutri-Vet LLC, Boise, ID.

4:10 PM 208 Who are we, what do we do and how can we help? W. Bookout*, National Animal Supplement Council, Valley Center, CA.

4:35 PM 2008 Corbin Award Winner: Opportunities in companion animal sciences. Gail Kuhlman, Procter & Gamble Pet Care, Lewisburg, OH.

4:55 PM Reception

Food Safety
Chair: Mandy Carr, National Cattlemen’s Beef Association

2:00 PM 209 Clostridium difficile in cattle and swine. R. Harvey*, FFSRU, ARS, USDA, College Station, TX.

2:30 PM 210 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, 1Aberystwyth University, Wales, UK, 2Nofima Mat, As, Norway.


3:00 PM 212 Oral delivery systems for encapsulating bacteriophage targeted at E. coli O157:H7. K. Stanford*, T. P. Stephens1, T. A. McAllister1, D. Niu1,2, and R. P. Johnson3, 1Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Dalain University of Technology, Dalian, China, 4Public Health Agency of Canada, Guelph, ON, Canada.

3:15 PM 213 Effects of Aviplus® on E. coli O157:H7 in pure culture and in mixed ruminal culture fermentations. T.R. Callaway*1, E. Grilli2, M. R. Messina2, and A. Piva2, 1Food and Feed Safety Research Unit, Agricultural Research Service, USDA, College Station, TX, 2DIMORFIPA, University of Bologna, Bologna, Italy.
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<td>3:30 PM</td>
<td>214</td>
<td>Control of <em>Escherichia coli</em> O157:H7 in corn silage with inoculants under anaerobic and aerobic conditions. A. F. Pedroso², A. T. Adesogan³, O. C. M. Queiroz², and S. K. Williams². <em>Brazilian Agricultural Research Corporation, Embrapa Cattle-Southeast, Sao Carlos, Sao Paulo, Brazil.</em> ¹<em>Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida, USA.</em></td>
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<td>3:45 PM</td>
<td>215</td>
<td>Characterization of antimicrobial-resistant <em>Escherichia coli</em> from samples collected throughout processing of feedlot cattle at a commercial abattoir. T. W. Alexander<em>¹, G. D. Inglis⁵, L. J. Yanke¹, E. Topp¹, and T. A. McAllister¹. <em>Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada.</em> ²</em>Agriculture and Agri-Food Canada, London, Ontario, Canada.*</td>
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<td>4:00 PM</td>
<td>216</td>
<td>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. <em>Harbin Institute of Technology, Harbin, Heilongjiang, China.</em></td>
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**Graduate Student Paper Competition**

**CSAS Oral Competition 2**

**Chair: Luigi Faucitano, Agriculture and Agri-Food Canada**

**514**

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<tr>
<td>2:00 PM</td>
<td>218</td>
<td>The effect of animal location during transit on heart rate of pigs transported to slaughter using two vehicle types. J. A. Correa*, H. Gonyou², R. Bergeron¹, S. Torrey¹, T. Crowe¹, T. Widowski¹, J. P. Laforest², C. Dewey², N. Lewis², and Luigi Faucitano. <em>Laval University, Quebec, Quebec, Canada.</em></td>
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<td>3:00 PM</td>
<td>222</td>
<td>Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case*, M. J. Kelly¹, S. P. Miller¹, and B. J. Wood². <em>University of Guelph, Guelph, Ontario, Canada.</em></td>
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<td>3:30 PM</td>
<td>224</td>
<td>The threonine requirement in sows increases at day 30, 45 and 105 of gestation. C. L. Levesque<em>¹, S. Moehn¹, P. B. Pencharz², and R. O. Ball¹. <em>Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada.</em> ²</em>Hybrid Turkeys, Kitchener, Ontario, Canada.*</td>
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<td>4:00 PM</td>
<td>226</td>
<td>Calcium chloride and sodium nitrate as nutritional means to overcome the reduction in performance of pigs fed high potassium diets. J. Guimaraes*¹, D. Wey, C. Zhu, and C. F. M de Lange. <em>University of Guelph, Guelph, Ontario, Canada.</em></td>
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<tr>
<td>4:15 PM</td>
<td>227</td>
<td>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. <em>Swine Research and Technology Centre, University of Alberta, Edmonton, Alberta, Canada.</em></td>
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SYMPOSIUM
Meat Science and Muscle Biology
Balancing Live Cattle Performance and Beef Quality
Chair: John Stika, Certified Angus Beef LLC
510ac

2:00 PM 229 Growth technologies: Performance benefits and quality considerations. J. D. Tatum*, Colorado State University, Fort Collins.

2:45 PM 230 Production systems to optimize growth and beef quality. I. Rush*, University of Nebraska, Lincoln.


4:05 PM 232 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.


SYMPOSIUM
Nonruminant Nutrition
Improving the Nutritional Value of Alternative Feed Ingredients
Chair: Kevin Herkelman, Wenger Feeds
Sponsors: Evonik Degussa Corp. and Monsanto
518

2:00 PM Introduction. Kevin Herkelman.


2:50 PM 235 Mycotoxins in alternative ingredients. T. K. Smith*, University of Guelph, Guelph, ON, Canada.

3:30 PM 236 Anti-nutritional compounds and other limitations to the use of alternative feed ingredients. H. H. Stein*, University of Illinois, Urbana.

4:10 PM 237 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.

4:50 PM Summary. Kevin Herkelman.

Physiology and Endocrinology
Dairy Cattle Reproduction
Chair: Paul M. Fricke, University of Wisconsin-Madison
516c

2:00 PM 238 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.

2:15 PM 239 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.

2:30 PM 240 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.

2:45 PM 241 Effects of resynchronization programs on fertility, progesterone and PAGs after insemination. I. M. Thompson*3; 3Chungbuk National University, South Korea, 3University of Missouri, Columbia.
3:00 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. Pawlisch1, J. N. Guenther1, and P. M. Fricke1, 1Department of Dairy Science, University of Wisconsin, Madison, 2Brodhead Veterinary Clinic, Brodhead, WI.

3:15 PM

Break

3:30 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 Bonington Campus, Loughborough, UK.

3:45 PM 244 Effect of body condition score on milk yield, milk composition and reproductive performance during the service period of Holstein-Friesian dairy cattle. T. J. Hole2 and J. K. Margerston*1, 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, 1Department of Animal Science, University of Nebraska-Lincoln, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Teagasc Moorepark DPRC, Fermoy, Co. Cork, Ireland, 1SAFVM, University College Dublin, Ireland, 2Teagasc, 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. Aalhus1, W. M. Robertson1, T. A. McAllister1, D. J. Gibb1, 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*1, R. Srinivasan2, 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. Karges2, M. L. Gibson3, J. S. Smith3, 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, I. B. Mandell1, S. P. Miller3, 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.
1Kansas State University, Manhattan; 2Dakota Gold Research Assn, Sioux Falls, SD.

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.

1Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil; 2University of Alberta, Edmonton, Alberta, Canada.

University of Illinois, Champaign-Urbana.

Institution of Feed Science, Zhejiang university, Hangzhou, Zhejiang, China.

2:45 PM 266 Influence of seasonality of the growing-finishing period on carcass characteristics of heavy barrows and gilts. M. A. Latorre*, S. Calvo, and L. Ariño.
1Centro de Investigación y Tecnología Agroalimentaria de Aragón, Zaragoza, Spain; 2Integraciones Porcinas SL, Teruel, Spain.

1Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK; 2Pancosma SA, Geneva, Switzerland.

3:15 PM Break
Changes in expression of swine intestinal Na+/glucose cotransporter in response to increased dietary carbohydrates.  
A. Moran*, M. Al-Rammahi¹, D. Arora¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu¹, D. Bravo¹, and S. Shirazi-Beechey¹, 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. Holl², W. O. Herring², and M. T. See¹, ¹North Carolina State University, Raleigh, ²Smithfield Premium Genetics Group, Rose Hill, NC.

New DFM product (Bacillus) improves performance of grower/finisher swine.  
I. Knap and B. T. Lund*, Chr. Hansen, Hoersholm, Denmark.

Cholecystokinin excited and sensitized porcine gastric mechanoceptors 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 Knegsel*, 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 Psoriasin expression in bovine udder is induced by E. coli infection. P. Regenhard*1, W. Petzl1, H. Zerbe2, and H. Sauerwein4, 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: Osteopon. K. Alain1-3, N. A. Karrow1, C. Thibault1, M. Lessard2, and N. Bissonnette*1,3, 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.

T4 Expression of Toll like receptor 4 on bovine neutrophils is not dependent on transcriptional activation. M. Worku*, A. Morris, H. Mukthar, and N. Mikiashvilli, North Carolina A&T State University, Greensboro.

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*1,2, C. Thibault1, and N. Bissonnette*1,3, 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.


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 quadrovalent mastitis vaccine in dairy cows. S.-C. Lee1 and J.-W. Lee*2, 1Graduate 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. Wellnitz, 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. Frey2, F. Klug3, and N. Vukasinovic4, 1Landesforschungsanstalt für Landwirtschaft und Fischerei M-V, Institut für Tierproduktion, Dummerstorf, Germany, 2FBN, Unit Genetics and Biometry, Dummerstorf, Germany, 3Alexandrastr. 4, Graal-Müritz, Germany, 4Newsham 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. Baba1*, Y. Masuda1, Y. Goto2, and M. Suzuki1, 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. Bignardi1,2, L. El Faro1, G. J. M. Rosa3, F. F. Silva4,5, V. L. Cardoso4, P. F. Machado6, and L. G. Albuquerque1, 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. Lee1, S.-H. Oh2, and N. C. Whitley2, 1 Hankyong 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. Oudah2, 1Kaf El Sheikh University, Kaf El Sheikh, Egypt, 2Mansoura University, Mansoura, Egypt.

T23 Comparing random regression models and analysing first lactation daily milk yield data in Murrah buffaloes by Bayesian inference. F. C. Breda Mello1,2, L. G. de Albuquerque3, R. F. Euclydes2, H. Tonhati2, 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. Breda1,2, R. F. Euclydes2, L. G. de Albuquerque3, H. Tonhati2, 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. Lotfi1, H. Farhangfar*, and A. Shoorideh1, 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*, R. Lotfi2, and M. H. Fathi Nasiri1, 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. Farhangfar1, R. Lotfi1, and M. H. Fathi Nasiri1, 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*, A. Abedini1, K. Shojaeian1, and M. H. Fathi Nasiri1, 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. Tusell1, R. Rekaya1, M. López-Bejar1, M. Garcia-Tomás1, O. Rafel1, J. Ramon1, and M. Piles1, 1Unitat de Cunicultura, IRTA, Barcelona, Spain, 2University of Georgia, Athens, 3UBA, Barcelona, Spain.

T30 Genetic association between male fertility and prolificacy after artificial insemination with semen subjected to limited screening. L. L. Tusell1, R. Rekaya1, M. López-Bejar1, M. Garcia-Tomás1, O. Rafel1, J. Ramon1, and M. Piles1, 1Unitat de Cunicultura, IRTA, Barcelona, Spain.

T31 Mixed model analyzing of some environmental factors affecting average lactation somatic cell score in Iranian Holstein heifers. H. Farhangfar*, A. Abedini1, K. Shojaeian1, and M. H. Fathi Nasiri1, 1Birjand University, Birjand, Iran, 2Zabol University, Zabol, Iran.

T32 Breeding values of fat and protein content in inbred and outbred cows. J. Bezdicek*, J. Subrt1, R. Filipčík1, and J. Riha1, 1Agrovys zkum Rapotín Ltd., Rapotín, Czech Republic, 2MŽLU v Brne, Brno, Czech Republic.

T33 Genetic correlations of dry matter intake with fat corrected milk yield, body weight, and body condition score in eleven commercial tie-stall dairy farms. S. M. Hall4, C. D. Dechow1, J. M. Daubert1, M. D. Dekleva1, J. W. Blum2, G. A. Varga3, C. R. Baumrucker1, and W. Liu1, 1Pennsylvania State University, University Park, 2University of Bern, Bern, Switzerland.

T34 Phenotypic and genotypic variation of bovine immune responses in Cohort dairy herds across Canada. K. A. Thompson1, N. Karrow3, K. Leslie1, M. Quinton1, F. Miglior1, and B. A. Mallard1, 1University of Guelph, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada.

T35 Study on genetic parameters of conception rate and heat detection rate of NY Holsteins. C. Huang4, S. Tsuruta1, I. Misztal1, and T. J. Lawlor1, 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 neutraceutiques et des aliments functionnels (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*, 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.


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. Mu2, H. Yi1, and X. Han1, 1Harbin Institute of Technology, Harbin, Heilongjiang, China, 2Inner 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**, 1Applied 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, 1Key Lab of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China, 2National 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, 1Université de Sherbrooke, Sherbrooke, QC, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.


T55  Growth-promoting activities of bovine and caprine caseinomacroppeptide. G. Robitaille*, R. Ioannini, 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. Noorbakhsh*1, A. Mortazavi1, F. Shahidi2, A. F. Mehdikhani2, M. Ahoei2, and A. Heravi Moussavi1, 1Dept of Food Science and Technology, Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran, 2Dept 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. Pettey, 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*2,3, 1Louisiana State University, Baton Rouge, 2Louisiana 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*2,3, 1Louisiana State University, Baton Rouge, 2Louisiana 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*2,3, 1Louisiana State University, Baton Rouge, 2Louisiana State University Agricultural Center, Baton Rouge.


T64  Environmental scanning of bacteria with the potential to produce rpy milk in a farm. A. Laubscher*1, K. White1, A. Cano1, R. Cano2, and R. Jimenez-Flores1, 1Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo, 2Biological 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. Cerqueira*1,2, M. O. Leite1,2, C. S. P. Fonseca1, C. F. A. M. Penna1,2, and M. R. Souza1,2, 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, 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. Brothersen, and D. J. McMahon1, 1Microbiology Department, Webster State University, Ogden, UT, 2Western 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. Gigante1, and R. Jiménez-Flores1, 1Universidade Norte do Paraná, Londrina, Paraná, Brazil, 2Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, 3California Polytechnic State University, San Luis Obispo.
A modeling system to predict \textit{S. aureus} growth and SEA production in milk. F. Zhao, X. Qu, X. Lv, L. Xiang, B. Yan, and Y. Jiang*, \textit{Northeast Agricultural University, Harbin, China.}

\textit{Salmonella} serotype shift during an endemic dairy infection. J. Van Kessel* and J. Karns, \textit{USDA-ARS, Beltsville, MD.}

Determination of the mechanism(s) by which direct-fed microbials control \textit{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, \textit{Oklahoma State University, Stillwater.}

PCR analysis of pathogenic \textit{E. coli} on three dairy farms in the northeastern US. J. Karns* and J. Van Kessel, \textit{USDA/ARS/BA/ANRI/EMFSL, Beltsville, MD.}

Effect of a mycotoxin deactivating feed additive on the transfer of aflatoxin from dairy feed into milk. U. Hofstetter*1, I. Rodrigues1, A. Pietri2, and T. Bertuzzi2, 1\textit{Biomin Holding GmbH, Herzogenburg, Austria, 2Istituto di Scienze degli Alimenti e della Nutrizione - Facoltà di Agraria U.C.S.C., Piacenza, Italy.}

Food crisis consumer information needs. K. E. Olson*, D. Pelzer, and S. Stevens, 1\textit{KEO Consulting, Schaumburg, IL, 2DMI, Rosemont, IL.}

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. Teixeira3, V. C. e Silva1, B. R. Vieira1, and E. B. Malheiros1, 1\textit{São Paulo State University, Jaboticabal, São Paulo, Brazil, 2Fundação de Amparo a Pesquisa do Estado de São Paulo, São Paulo, São Paulo, Brazil.}

Effects of stocking rate and supplementation on pasture quality, production, and utilization in pasture-based dairy systems in Eastern North Carolina. R. E. Vibart*, S. P. Washburn*, G. A. Benson, and J. T. Green, 1\textit{AgResearch Limited, Palmerston North, New Zealand, 2North Carolina State University, Raleigh.}

Predicting dry matter intake of grazing Brahman bulls selected for high and low feed efficiency. A. D. Aguiar*1, L. O. Tedeschi1, F. M. Rouquette, Jr2, T. D. A. Forbes3, C. M. Hensarling, and R. D. Randel2, 1\textit{Texas A&M University, College Station, 2Texas AgriLife Research, Overton, TX, 3Texas 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. Duckett*, and M. Miller, \textit{Clemson University, Clemson, SC.}

Performance by spring and fall-calving cows grazing with full access, limited access, or no access to endophyteinfected tall fescue—2 year summary. J. Caldwell*, K. Coffey2, D. Philipp1, J. Jennings2, D. Hubbell III1, T. Hess1, D. Kreider1, M. Looper2, M. Popp1, M. Savin3, and C. Rosenkrans Jr.1, 1\textit{University of Arkansas, Fayetteville, 2USDA-ARS, Booneville, AR, 3Cooperative Extension Service, Little Rock, AR.}

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.

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. Berthiaume*1, 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.

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.

Perennial forage kochia for increased production of winter grazed pastures. L. K. Greenhalgh1, D. R. ZoBell*1, B. 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.

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.

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. Cherney2, and M. E. Van Amburgh2, 1Fundación de Apoyo a Pesquisa do Estado de São Paulo, 2Universidad de Guadalajara, 3Cornell University.

The effect of grazing and supplementing with corn byproducts on reproductive performance of Creole × Zebu cows: A simulation model. J. M. Tapia-González*1, A. Tewolde-Medhin1, W. E. Grant1, J. C. Martínez González1, H. Diaz Solís2, A. Moreno Valdéz2, O. Z. Montañez Valdez1, L. F. Galvan-Benavidez1, and G. Rocha Chávez1, 1CUSUR, Univ de Guadalajara, 2Cd Guzman Jalisco Mexico, 3Univ Autonom de Tamaulipas, 4Cd Victoria Tamps. Mexico, 5Texas A&M University, College Station, 6UAAAN, Saltillo Coahuila Mexico, 7Inst Tec de Cd Victoria, 8Cd Victoria Tamps. Mexico.


Nutritive value of the Tanzania grass managed under different residual LAI, at rotational stocking by goats. N. Lima Santos1,2, 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 a Pesquisa do Estado de São Paulo, São Paulo, São Paulo.

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*, J. J. McKinnon1, T. A. McAllister*, and T. Mutsangwa1, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

Effect of ruminal protozoa on urea-nitrogen recycling in growing lambs fed diets varying in ruminally-fermentable carbohydrate. D. Kiran* and T. Mutsangwa, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

Effect of feed borne *Fusarium* mycotoxins on the performance of grain fed veal calves. L. M. Martin*, K. M. Wood1, P. L. McEwen1,2, T. K. Smith1, I. B. Mandell1, A. Yiannikouris1, and K. C. Swanson1, 1University of Guelph, 2Ridgetown Campus, University of Guelph, Guelph, Ontario, Canada, 3Ridgetown Campus, University of Guelph, Guelph, Ontario, Canada, 4Alltech, Nicholasville, KY.

Effect of replacing barley grain with triticale-based dry distillers grains with solubles on lamb performance and nutrient digestibility. L. E. McKeown*1,2, A. V. Chaves3, M. Oba1, T. A. McAllister*, and E. Okine1, 1University of Alberta, Edmonton, Alberta, Canada, 2Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada.

Effect of bioethanol co-product type and bioethanol plant on situ degradation kinetics, effective degradability and rumen bypass of nutrient components. W. G. Nuez Ortín* and P. Yu, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

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 Ortín* 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*, K. M. Wood†, P. L. McEwen‡, I. B. Mandell#, S. P. Miller$, and K. C. Swanson%. 1University of Guelph, Guelph, ON, Canada; 2Ridgetown Campus, University of Guelph, Ridgetown, ON, Canada.

Effects of supplementing beef cows grazing low quality roughages with wheat dried distillers grains with solubles. A. Van De Kerckhove* and H. A. Lardner1, 2University of Saskatchewan, Saskatoon, SK, Canada; 3Western Beef Development Centre, Humboldt, SK, Canada.

Effect of microalgal type and length of incubation on fatty acid composition in vitro cultures of rumen fluid. C. Whitney*, J. Ronquillo†, C. Enright‡, J. Green-Johnson§, L. MacLaren∥, A. Fredeen¶, and K. Glover#, 1Nova Scotia Agricultural College, Truro, Nova Scotia, Canada; 2University of Ottawa Institute on Technology, Ottawa, Ontario, 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, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 3Universidade 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, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 3Universidade 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, 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.

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), Dummerstorf, 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), Dummerstorf, 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 increases 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. Béard2, G. Bee3, and C. Rehfeldt1, 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 IGF2 expression in semitendinosus muscle tissue of the developing fetus. C. J. Fitzsimmons*1,2, R. Feldmann1, Z. A. Kruk1,3, S. Truran1, D. Lines1, D. Rutley1, and S. Hindleeder1,4, 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. Eberlein1, A. Takasuga2, K. Setoguchi3, R. Pfuhl4, K. Flisikowski5, R. Fries6, N. Kloppe5, K. Suhre5, R. Weikard1, and Ch. Kühn*, 1Research Institute for the Biology of Farm Animals, Dummerstorf, Germany, 2Shirikawa 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. Abeni1, L. Calamari2, G. Pirlo*, 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. Pta1, P. Loi1, P. A. Scapolo2, A. Cuomo2, C. Palmieri2, and A. T. Grazul-Boisclair, and D. Bauman, and H. Han1, 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. Hahn1, M. Spurlock2, and A. Jourdan3, 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. Barry2, R. V. Anthony2,3, 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. Daniels2, C. Clover2, and A. V. Capuco2, 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.

Manure management practices on equine farms. M. L. Westendorf*1, T. Joshua2, S. J. Komar3, C. Williams1, and R. Govindasamy1, 1Rutgers, The State University of New Jersey, New Brunswick, 2USDA National Agricultural Statistics Service, Trenton, NJ.

Temporal variables of the Marsh Tacky intermediate gait. M. Nicodemus*1 and J. Beranger2, 1Mississippi State University, Mississippi State, 2American Livestock Breeds Conservancy, Pittsboro, NC.

The use of Doppler ultrasonography to measure vasoconstriction in horses consuming endophyte-infected tall fescue. K. C. Gradert*, J. M. Bormann1, S. F. DeWitt3, L. W. Lomas1, J. M. Koub3, and T. L. Slough1, 1Kansas State University, Manhattan, 2Woodside Equine Clinic, Ashland, VA, 3Southeast Agricultural Research Center, Parsons, KS.

Genistein does not work through estrogen receptors to reduce lipopolysaccharide stimulation of tumor necrosis factor α release from equine peripheral blood mononuclear cells (PBMC). A. Taylor*, C. Paulson, and J. Clapper, South Dakota State University, Brookings.

The evaluation of the miniature horse as a nutritional model for full size horses fed various levels of dietary fat. J. S. Pendergraft*1, B. Gutierrez2, and M. J. Arns3, 1Sul Ross State University, Alpine, TX, 2University of Arizona, Tucson.


**Meat Science and Muscle Biology 2**

Retail and sensory quality of Longissimus thoracis from steers fed corn- or wheat-based dry distillers grains plus solubles (DDGS). N. Aldai*, J. L. Aalhus1, M. E. R. Dugan2, T. A. McAllister2, L. J. Walter1, and J. J. McKinnon3, 1Agriculture & Agri-Food Canada, Lacombe Research Centre, Lacombe, AB, Canada, 2Agriculture & Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 3Department of Animal & Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

Effects of feeding cattle increasing levels of dried distillers grains with solubles (DDGS) from wheat on muscle fatty acid composition. M. E. R. Dugan*, N. Aldai1, D. J. Gibb3, T. A. McAllister3, and J. K. G. Kramer2, 1Lacombe Research Centre, Lacombe, AB, Canada, 2Guelph Food Research Centre, Guelph, ON, Canada, 3Lethbridge Research Centre, Lethbridge, AB, Canada.


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.


Fatty acid composition of western Canadian beef: Hamburger. N. Aldai*, M. E. R. Dugan1, D. C. Rolland3, and J. K. G. Kramer2, 1Lacombe Research Centre, Lacombe, AB, Canada, 2Guelph Food Research Centre, Guelph, ON, Canada.

Effect of slaughter end point on pH of beef carcasses from British or Continental versus Nellore crossbred cattle. R. Mello*, F. D. de Resende2, A. C. de Queiroz3, M. H. de Faria2, F. Maldonado2, and P. V. R. Paulino1, 1Universidade Federal de Roraima, Boa Vista, Roraima, Brazil, 2Agência Paulista de Tecnologia dos Agronegócios, Colina, São Paulo, Brazil, 3Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
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 Oliveira5, 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.

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. Banskalev1, and M. Brown6, 1RM. Kerr Food and Agricultural Products Center, Oklahoma State University, Stillwater, 2USDA-ARS, Grazinglands Research Laboratory, El Reno, OK.


Feeding flaxseed to beef cows increases plasma omega-3 linolenic acid levels. M. L. He*1,2, Y.-H. Chung1, K. A. Beauchemin1, P. S. Mir1, J. L. Aalhus3, M. E. R. Dugan3, and T. A. McAllister1, 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.

Grazing or concentrate feeding for 11 months prior to slaughter: Influence on colour and sensory characteristics of beef. A. P. Moloney**1,2, A. Black1, P. G. Dunne1, and F. J. Monahan3, 1Teagasc, Grange Beef Research Centre, Dunsany, County Meath, Ireland, 2Teagasc, Ashtown Food Research Centre, Ashtown, Dublin, Ireland, 3University College Dublin, Belfield, Dublin, Ireland.


Influence of management systems on meat quality of heifers fed with different lipid supplements in the finishing phase. M. C. A. Santana*, T. T. Berchielli1, R. A. Reis1, A. V. Pires2, G. Fiorentini1, and M. A. A. Balsalobre3, 1São Paulo State University, Jaboticabal, São Paulo, Brazil, 2São Paulo University, Piracicaba, São Paulo, Brazil, 3Bellman, Mirassol, São Paulo, Brazil.

Nonruminant Nutrition
Feed Additives I

Hypocholesteromic effect of turmeric powder and sodium selenite in Ross broilers reared under heat stress conditions. A. Zeinali*1, A. Riasi1, H. Farhangfar1, and H. Ziaei2, 1Birjand University, Birjand, Iran, 2Agricultural Research Center, Birjand, Iran.

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.

Determination of optimal conditions for hydrolysis of conjugated deoxynivalenol in corn and wheat with trifluoromethanesulfonic acid. S.-T. Tran*, and T. K. Smith, University of Guelph, Guelph, Ontario, Canada.

Efficacy of a commercial purified phyllosilicate in preventing fumonisin 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.


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.

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.


Comparative effects of phytase derived from Escherichia coli and Aspergillus niger in laying hens. L. Yan*, H. D. Jang1, S. M. Hong1, H. S. Kim1, Y. Hyun*, 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. Balestrin1, and G. J. M. M. Lima4, 3Vitamix Animal Nutrition, 2Santa Maria Federal University, 1DSM, 4Embrapa.

T178 Effect of phytase supplementation on the calcium and phosphorus balance in adult cannulated ganders. J. Tossenberger1, L. Babinszky*3, 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. Lei*, Cornell University, Ithaca, NY.


T181 Screening based on bacteriidal and phytase activities of lactic acid bacteria towards their use as a chicken probiotic supplement. H. R. Taheri*1, H. Moravej1, F. Tabandeh2, M. Zahghari1, and M. Shivaazad1, 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*1, 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. Zahghari*, and M. Shivaazad, University of Tehran, Karaj, Iran.

Nonruminant Nutrition

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*1, G. Mariscal-Landin1, P. E. Urriola1, and H. H. Stein2, 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*1, E. Sánchez1, A. Morales1, A. Araiza1, W. Sauer1, M. Barrera1, and J. Yáñez1, 1ICA, Universidad Autónoma de Baja California, Mexicali, BC, México, 2Universidad Autónoma de Tlaxcala, Tlaxcala, Mexico.


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 B12 in growing pigs. D. Prévéraud1,2, C. L. Girard1, F. Guay2, N. LeFloc’h1, and J. J. Matte1, 1Dairy & Swine R&D Centre, Agriculture & Agri-Food Canada, STN-Lennoixville, 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.
T200 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.

T201 The effect of period and duration of feeding restriction on nitrogen balance in pigs. M. Richer-Lanciaut1, M. Roy*, J. F. Bernier1, R. Fillion1, M. Lessard2, and F. Guay1, 1Université Laval, Quebec, Quebec, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 3CDPQ, Quebec, Quebec, Canada.

T202 Effects of feeding sodium selenite vs. selenium yeast as the selenium source for sows during late gestation and lactation. T. E. Shipp*, D. W. Funderburke, and C. L. Funderburke, Cape Fear Consulting, LLC, Warsaw, NC.

T203 Efficacy of Cr (III) supplementation on growth, carcass composition, blood metabolites, and endocrine parameters in finishing pigs. M. Q. Wang*, Y. D. He1,2, and Z. R. Xu1,2, 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.

T204 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. Anciutti, F. Rutz, and F. A. B. Del Pino, Federal University of Pelotas, Pelotas, RS, Brazil.


T206 Antagonistic strains isolated from the porcine gastrointestinal tract. V. Klose*, K. Bayer1, R. Bruckbeck1, A. P. Loibner2, and G. Schatzmayer2, 1BOKU-University, Vienna, A-3430 Tulln, Austria, 2BIOMIN Research Center, A-3430 Tulln, Austria.

T207 The effect of period and duration of feeding restriction on compensatory growth and global growth performances in pigs. M. Richer-Lanciaut*, J. F. Bernier1, R. Fillion2, M. Lessard2, and F. Guay1, 1Université Laval, Quebec, Quebec, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada, 3CDPQ, Quebec, Quebec, Canada.

T208 Citrulline as a parameter for villus atrophy in weaned piglets. L. der Kinderen*, H. Zwolschen1, D. Bravo1, A. Mul1, and E. Bruininx1,4, 1CCL Research, Veghel, The Netherlands, 2Cehave Landbouwbelang Voeders Nederland, Veghel, the Netherlands, 3Pancosma, Geneva, Switzerland, 4Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands.

Physiology and Endocrinology


T210 Effect of duration of CIDR treatment on reproductive performance of dairy heifers using a timed-Al protocol. G. Lopes Jr.*, L. G. D. Mendoça1, R. C. Chebel1, J. C. Dalton2, and A. Ahmadzadeh1, 1Veterinary Medicine Cooperative Extension, University of California-Davis, Tulare, 2Caldwell Research and Extension Center, University of Idaho, Caldwell, 3University of Idaho, Moscow.

T211 Effect of reusing CIDRs on the pregnancy rate of beef cattle. W. A. Greene* and M. L. Borger, The Ohio State University, Wooster.
Reproductive outcomes of beef heifers treated with various duration of CIDR exposure in a modified timed-AI protocol. A. Ahmadzadeh1, D. Falk2, D. Gunn4, J. B. Hall1, and B. Glaze1. 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.


Effect of increasing GnRH and PGF2α dose during double-Ovsynch on fertility of lactating dairy cows at first postpartum timed artificial insemination. J. O. Giordano1, P. M. Fricke3, S. Bas1, A. P. Cunha2, R. A. Pawlisch1, J. N. Guenther1, and M. C. Wiltbank1. 1Department of Dairy Science, University of Wisconsin, Madison, 2Brodhead Veterinary Clinic, Brodhead, WI.

Use of eCG, hCG, or estradiol cypionate (ECP) after CIDR removal in Creole Rodeo multiparous cows. J. A. Ramirez-Godinez1, L. V. Beltran-Prieto, E. Santellano-Estrada, and A. Flores-Mariñelareña, Universidad Autonoma de Chihuahua, Chihuahua, Chihuahua, Mexico.

Effect of body condition score on estrus expression, and AI and breeding season pregnancy rates in beef cows synchronized with progesterone supplemented protocols. R. Kasimanickam1 and W. D. Whittaker, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg.

Comparison of the CIDR Select and 5 day CO-Synch + CIDR protocols for synchronizing estrus in beef heifers. P. J. Gunn1, K. C. Culp1, R. P. Arias1, R. P. Lemenager1, K. Heaton1, S. L. Lake1, and G. A. Bridges1. 1Purdue University, West Lafayette, IN, 2Utah State University, Logan, 3University of Wyoming, Laramie.

Effect of double prostaglandin injections in the Ovsynch® protocol on serum progesterone in cycling dairy cows. J. L. Fain1, R. L. Waggoner, and J. R. Gibbons, Clemson University, Clemson, SC.

In vitro assessment of corpus luteum function in cows induced to ovulate with porcine LH, GnRH or estradiol benzoate. D. J. Ambrose1, M. G. Colazo1, J. P. Kastelic1, T. O. Ree1, M. K. Dyck1, P. Ponce Barajas1, and A. G. A. Lamont1, 1Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3University of Alberta, Edmonton, AB, Canada, 4Lakeland College, Vermilion, AB, Canada.


Follicular wave of the ovulatory follicle and not cyclic status influences fertility of dairy cows. R. S. Bisinotto1, R. C. Chebel2, and J. E. P. Santos1. 1University of Florida, Gainesville, 2University of California Davis, Tulare.


Low progesterone concentration during superstimulation of the first follicular wave impairs embryo quality of lactating dairy cows. F. A. Rivera*, L. G. D. Mendonça1, G. Lopes Jr.2, R. V. Perez2, F. Guagnini2, M. Amstalden1, R. G. S. Bruno1, J. E. P. Santos1, and R. C. Chebel1. 1Veterinary Medicine Cooperative Extension, University of California Davis, Tulare, 2Animal Reproduction Laboratory, Texas A&M University Agricultural Research Station, Beeville, 3Department of Animal Science, University of Florida, Gainesville.


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. Lozano1 and C. F. Aréchiga1. 1Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Aguascalientes, Aguascalientes, México, 2Universidad Autónoma de Zacatecas, Zacatecas, Zacatecas, México.


Effects of presynchronization with hCG 7 d prior to estrous synchronization and fixed-time AI (TAI) on fertility and concentrations of progesterone in suckled beef cows. G. Marquezeni1, C. R. Dahlén4, S. L. Bird3, B. J. Funnell1, 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.

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*, G. Mohammadi1, and E. Dirandeh, 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*, 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*, 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 exogenous progesterone. L. F. Uribe Velásquez*, 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*, M. G. Colazo1, J. P. Kastelic3, M. K. Dyck2, 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*, R. Bertheaume1, S. Turcotte1, A. Robichaud1, and P. Lacasse1, 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*, G. Azzaro2, A. Pozzebon2, S. Ventura2, and G. Licitra1, 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*, 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. Vaziregohar* and M. Dehghan Banadaki, University of Tehran, Karaj, Tehran, Iran.


T245  Deviation of reticular temperatures in association with mastitis and estrus. J. M. Bewley*, M. E. Einstein1, M. W. Grott1, and M. M. Schutz1, 1Purdue University, West Lafayette, IN, 2University of Kentucky, Lexington.

Ruminant Nutrition

Additives

T249 Effects of capsicum extract on intake and performance of feedlot calves. A. L. Cardillo1, A. D. Garciaarena1, C. Faverin1, G. A. Gagliostro1, J. M. Hernandez Vieyra2, and D. Colombo**1, INTA, Balcarce, Buenos Aires, Argentina; 2University of Buenos Aires, Buenos Aires, Argentina, CONICET, Buenos Aires, Argentina, Pancosma, 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, Pancosma, Geneva, Switzerland, Sanders Nutrition Animale, Brux, France, ADM Research, Decatur, IL.

T251 Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini1, D. Bravo*1, S. Calsamiglia1, M. Rodriguez1, and A. Ferret1, Universitat Autonoma de Barcelona, Bellaterra, Spain, Pancosma, 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. Benchaa*, B. N. Ameta2, M. L. He1, and K. A. Beauchemin1, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada; 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, University 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. Benchaa*, W. Z. Yang2, H. V. Pettit1, and P. Y. Chouinard1, Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, Université 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. Benchaa*1, W. Z. Yang2, H. V. Pettit1, and P. Y. Chouinard1, Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, Université Laval, Département 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. Benchaa*1 and P. Y. Chouinard1, Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, Université 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 Mesgaran*, A. R. Vakili1, A. R. Heravi Moussavi1, and M. Hashemi1, Ferdowski University of Mashhad, Mashhad, Khorasan Razavi, Iran, Research and Petroleum Engineering Center of Kermanshah, Kermanshah, Iran.

T257 Effects of cinnamaldehyde on in vitro methane production and ruminal fermentation of medium and high-concentrate diets. C. Kamel1, H. M. R. Greathed2, M. L. Tejido2, M. J. Ranilla*, M. E. Martinez3, C. Saro3, and M. D. Carro2, Faculty of Biological Sciences, University of Leeds, Leeds, United Kingdom, Departamento de Producción Animal, Universidad de León, León, Spain.

T258 Evaluation of plant extracts in natural-fed finishing cattle. N. A. Pyatt*1, D. Bravo2, and P. H. Doane1, ADM Research, Decatur, IL, Pancosma Research, Geneva, Switzerland.

T259 Effect of yellow mustard glucosinolates on ruminal fermentation in vitro. R. A. Hristova1, A. N. Hristov2, S. Zaman1, and V. Borek3, Pennsylvania State University, University Park, University of Idaho, Moscow.


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 Ondarza*, C. J. Sniffen2, L. Dussert1, E. Chevaux1, J. Sullivan1, and N. Walker1, Paradox Nutrition, LLC, West Chazy, NY, Fencrest, LLC, Holderness, NH, Lallemand Animal Nutrition, Milwaukee, WI.
Effect of Optigen® on milk yield, composition, and component yields in commercial Wisconsin dairy herds. J. F. Inostroza*, 1, R. D. Shaver1, V. E. Cabrera1, and J. M. Tricarico1, 1Department of Dairy Science, University of Wisconsin, Madison, 2Alltech Inc., Brookings, SD.

Supplementation of grazing dairy cows with isopropyl ester of 2-hydroxy-4-methylthiobutanoic acid (HMBi). L. F. Greco*1, 2, S. T. Neves Neto1, A. Moreira1, 2, M. A. Penatti1, 2, C. M. M. Bittar1, 2, G. B. Mourao1, 2, and F. A. P. Santos1, 1University of Sao Paulo, Piracicaba, Sao Paulo, Brazil, 2University of Florida, Gainesville.

Effects of feeding 2-hydroxyl-4-methylthio butanoic acid (HMTBa) and HMTBa chelated trace minerals on dairy cattle production. M. Gallardo1, G. Conti1, G. Castilho1, S. Toffano*, 1Novus International Inc., Capital Federal, Buenos Aires, Argentina, 2EEA- Inta Rafaela, Rafaela, Santa Fe, Argentina, 3Universidad del Litoral, Esmeraldas, Ecuador, 4Argentina.

The impact of a blend of synthetic antioxidants (AGARDO® Plus) on milk fatty acids in dairy cows fed a high rumen unsaturated fatty acid load (RUFAL) diet. C. L. Preseault*, 1, J. Kraif, 1, 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.


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, Intervet/Schering-Plough, DeSoto, KS.


Zilpaterol hydrochloride impact on core body temperature, performance, and carcass characteristics of finishing steers. J. L. Wahrmund1, 2, B. P. Holland1, 2, C. R. Krehbiel1, 2, M. N. Streeter1, 2, D. A. Yates2, 2, J. P. Hutcheson3, 2, W. T. Nicholls1, 2, C. L. Goad2, and C. J. Richards3, 1Department of Animal Science, Oklahoma State University, Stillwater, 3Intervet/Schering-Plough, DeSoto, KS.


Ruminant Nutrition Efficiency

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. Bonilha1, L. A. Figueiredo1, and A. G. Razzak1, 1Programa de Pós-graduação emZootecnia - UNESP, Botucatu, São Paulo, Brazil, 2CAPTA Pecuária de Corte - Instituto de Zootecnia, Sertãozinho, São Paulo, Brazil.

Effects of residual feed intake on carcass characteristics of Nellore bulls. S. F. M. Bonilha*, 1, R. H. Branco2, G. F. Alleoni1, A. M. Castilhos1, L. A. Figueiredo1, and A. G. Razzak1, 1Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Sertãozinho, SP, Brazil, 2Instituto de Zootecnia, Agência Paulista de Tecnologia dos Agronegócios, Novo Odessa, SP, Brazil, 3Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu, SP, Brazil.

Relationships between residual feed intake and internal organs of Nellore bulls. S. F. M. Bonilha*, 1, R. H. Branco2, T. L. S. Corvino1, G. F. Alleoni1, L. A. Figueiredo1, and A. G. Razzak1, 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, Novo Odessa, SP, Brazil.

Genetics of feed conversion efficiency: Using a dynamic metabolic model to investigate the patterns of nutrient flux in the most efficient dairy animals. C. Shachtschneider, J. L. Vierck, and J. P. McNamara*, Washington State University, Pullman.

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. Dowd1, R. R. Gomez1, 2, and W. E. Pinchak1, 1Intercollegiate Faculty of Nutrition, Texas A&M University, College Station, 2Department of Animal Science, Texas A&M University, College Station, USDA, ARS, Food and Feed Safety Research Unit, College Station, TX, 3Medical Biofilm Research Institute, Lubbock, TX, 2Texas AgriLife Research, Texas A&M University, Vernon.
Proteomic analyses in beef cows with low and high maintenance energy requirements. M. J. Prado-Cooper1,2, R. D. Madden1, J. W. Dillworth1, C. L. Bailey1, E. C. Wright1, C. R. Krehbiel1, D. L. Step1, and R. P. Wettermann1, 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. Lawrence1,2, M. McGee1, D. Kenny1, D. H. Crews, Jr1, and B. Earley1, 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. Patino1, 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 transition from a high-forage to high-concentrate diet. L. Holtshausen*, 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*, M. Cervantes1, M. A. Lopez-Soto1, D. May1, and R. A. Zinn1, 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. Zalinko1, B. G. Rossnagel2, V. J. Racz1, D. A. Christiansen1, 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-Shahrbabak, 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. Costa2, A. M. Pedroso1, J. A. D. Pacheco Junior1, and J. C. Martinez1, 1University of Sao Paulo, Piracicaba, Sao Paulo, Brazil, 2University of Queensland, St. Lucia, Brisbane, Australia, 3Facultad de Ciencias Agrarias y Veterinarias, Jaboticabal, Sao Paulo, Brazil.

The effects of crude protein concentration and urea source on nitrogen metabolism in Holstein steers. V. B. Holder*, S. Elkadi1, J. M. Tricarico2, 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. Gonzáles2, L. S. Lopes1, R. L. Oliveira2, M. S. Bassi1, D. M. Oliveira1, J. S. Ribeiro1, and E. O. S. Saliba1, 1Federal University of Lavras, Lavras, MG, Brazil, 2Federal University of Bahia, Salvador, BA, Brazil, 3Federal 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*, 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*1, C. L. Girard2, D. Cinq-Mars2, and R. Berthiaume2, 1Département des Sciences Animales, Pavillon Paul-Comtas, Université Laval, Québec, QC, Canada, 2Agriculture 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, University of Guelph, ON, Canada, Centre de Recherche sur le Bovin Lai

T333  A meta-analysis of dry matter intake in Nellore and Zebu-crosses cattle. J. A. G. Azevedo1,2, S. C. Pina2, M. L. Chizzotti3, and O. G. Pereira*4, 1Universidade Estadual de Santa Cruz, Ilheus, Bahia, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Universidade Federal do Vale do São Francisco, Petrolina, Pernambuco, Brazil.

T334  Dry matter intake and performance of steers fed sugar cane ensiled with different levels of calcium oxide. F. H. M. Chizzotti1, O. G. Pereira*1, S. C. Valadares Filho1, M. L. Chizzotti3, and R. T. S. Rodrigues4, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Universidade Federal do Vale do São Francisco, Petrolina, PE, Brazil.

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. Hadlích, 1UNIDEF/ANHANGUERA, Campo Grande, Mato grosso do Sul, Brazil, 2IAGRO, Campo Grande, Mato grosso do Sul, Brazil, 3UNESP, Botucatu, Sao Paulo, Brazil.

T336  Effect of supplemental energy level on performance, blood parameters and carcass characteristics of steers finished on pasture. H. O. Patino*, 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.

Small Ruminant
Lactation, Physiology, Reproduction, Health


T339  Thyroid hormones and blood metabolites of dairy goats supplemented with dietary iodine. A. Nudda1, G. Battacone1, G. Bomboi1, B. Floris1, and G. Pulina*1,2, 1Dipartimento di Scienze Zootecniche, University of Sassari, Italy, 2Dipartimento di Biologia Animale, University of Sassari, Italy, 3Agricultural 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-Macias1, N. Castro1, J. Capote2, I. Moreno-Infanzón1, and A. Argüello*, 1Las Palmas de Gran Canaria University, Arucas, Las Palmas, Spain, 2Instituto 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. Zhang1,2, G. R. Wiggans3, J. Clay4, R. LaCroix5, J. Z. Wang1, T. Gipson5, and S. S. Zeng*, 1Langston University, Langston, OK, 2Agricultural Research Center of China, Changchun, Jilin, China, 3Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD, 4Dairy Records Management Systems, North Carolina State University, Raleigh, 5AgSource 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. Nudda1, M. Decandia2, A. Mazzette1, M. Acciaro2, and G. Pulina1,2, 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. Zimerman3, C. Giraudo1, and F. Santini1, 1INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina, 2INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina, 3INTA-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. Gulay1, 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. Ramsey1, M. Salisbury2, 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. Glimp1, and T. Filbin2, 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-Rodriguez2, and B. Malpau2, 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’Brien1, E. K. Crook1, R. A. Barczewski1, and N. C. Whitley3, 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. Castro1, J. Capote2, A. Morales-deLaNuez1, and B. Sim3, 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. Terrill2, J. E. Miller3, W. R. Getz4, S. Mobini5, E. Valencia6, and M. J. Williams7, 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

9:30 AM

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 272 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 273 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


9:45 AM 276 Computing procedures for genetic evaluation including phenotypic, full pedigree and genomic information. I. Aguilar*†‡, I. Misztal*, and A. Legarra†, 1University of Georgia, Athens, 2Instituto Nacional de Investigación Agropecuaria, Las Brujas, Uruguay, 3INRA, SAGA, Castanet-Tolosan, France.

10:00 AM 277 Genetic evaluation including phenotypic, full pedigree and genomic information. I. Misztal*, A. Legarra†, and I. Aguilar†, 1University of Georgia, Athens, 2INRA SAGA, 32326 Castanet-Tolosan, France.

10:15 AM 278 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†, 1ARS, USDA, Beltsville, MD, 2University Medical Center Groningen and University of Groningen, Groningen, the Netherlands.

10:30 AM 279 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

11:00 AM 280 Application of kernel partial least squares to estimate genomic breeding values of crossbred beef cattle. G. Vander Voort*†, M. Kelly†, T. Caldwell‡, D. Lu‡, Z. Wang*, I. Mah‡, G. Plastow‡, S. Moore‡, and S. Miller‡, 1Centre for Genetic Improvement of Livestock, University of Guelph, Guelph, Ont., Canada, 2Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada.

11:15 AM 281 Visualization of results from genomic predictions. J. B. Cole*, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.

11:30 AM 282 Comparison of Student’s t, LASSO, and multiple shrinkage methods for the prediction of genomic breeding values. C. Maltecca* and J. P. Cassady, North Carolina State University, Raleigh.

11:45 AM 283 Equivalent mixed model for joint genetic evaluation considering molecular and phenotypic information. N. Gengler*†‡ and F. Colinet†, 1Gembloux Agricultural University, B-5030 Gembloux, Belgium, 2National Fund for Scientific Research, B-1000 Brussels, Belgium.
Effect of estimation approach and number of QTLs in accuracies of genomic breeding values for simulated data. G. Gaspa1, E. L. Nicolazzi2, R. Steri1, C. Dimaro1, and N. P. P. Macciotta*, 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.

9:30 AM Introduction. Gail Kuhlman.

9:40 AM Protein quality differences exist among high quality mammalian, avian, and marine protein sources evaluated using avian assays. T. A. Faber*, D. C. Heriot1, C. M. Parsons1, K. S. Swanson1, S. Smiley1, P. J. Bechtel1,3, and G. C. Fahey, Jr.1, 1University of Illinois, Urbana, 2University of Alaska, Fairbanks, Alaska, 3Agricultural Research Service, Fairbanks, Alaska.

9:55 AM Total tract nutrient digestibility, fecal characteristics, and blood chemistry profiles of dogs as affected by alpha-cyclodextrin supplementation. M. A. Guevara*1, K. A. Garleb1, and G. C. Fahey1, 1University of Illinois, Urbana, 2Abbott Nutrition, Columbus, OH.

10:10 AM Influence of dietary protein on fecal quality and colonic tight junction gene expression in Miniature poodles and German shepherds. J. Nery1,2, V. Leray1, V. Biourge3, L. Martin1, H. Dumon1, and P. Nguyen1, École Nationale Vétérinaire de Nantes, France, 1University of Turin, Italy, 4Royal Canin, Aimargues, France.

10:25 AM 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 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 Apparent macronutrient digestibility of four raw meat diets in African wildcats, jaguars, and Malayan tigers. K. R. Kerr1, A. Beloshpaka1, C. Dikeman2, S. Burke1, L. G. Simmons1, and K. S. Swanson1, 1University of Illinois, Urbana, 2Henry Doorly Zoo, Omaha, NE.

11:25 AM 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*, S. McCusker1, J. P. Richmond3, L. A. Shipley2, E. A. Koutsos1, and S. A. Zinn1, University of Connecticut, Storrs, 1Washington State University, Pullman, 2Mazuri Exotic Animal Nutrition, St. Louis, MO.

11:40 AM Effects of zinc amino acid complex and iron amino acid complex on performance, health and pelt quality of weanling blue fox (Alopex lagopus). Y. Zhang1, H. Wei1, D. J. Tomlinson*2, and T. L. Ward2, 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

9:30 AM Introduction


10:05 AM Interactions of nutrition and behavior in dairy calves. J. K. Drackley*, University of Illinois, Urbana.
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<th>Time</th>
<th>Number</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>10:35 AM</td>
<td>296</td>
<td>Understanding the behavior of growing dairy heifers from a nutritional perspective. T. J. DeVries*, University of Guelph, Kemptville Campus, Kemptville, Ontario, Canada.</td>
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<tr>
<td>11:35 AM</td>
<td>298</td>
<td>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.</td>
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<td>12:05 PM</td>
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**SYMPOSIUM**

**Forages and Pastures**

**Forage Management Strategies of Offset High Input Costs**

Chair: David Combs, University of Wisconsin

524

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<th>Time</th>
<th>Number</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>9:30 AM</td>
<td>299</td>
<td>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.</td>
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<tr>
<td>11:00 AM</td>
<td>301</td>
<td>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.</td>
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**Growth and Development**

**Physiology of Growth In Vivo and In Vitro**

Chair: Erin Connor, USDA ARS, Beltsville

Sponsor: Elanco Animal Health

511be

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<th>Time</th>
<th>Number</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>9:30 AM</td>
<td>303</td>
<td>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.</td>
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<td>9:45 AM</td>
<td>304</td>
<td>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.</td>
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<tr>
<td>10:15 AM</td>
<td>306</td>
<td>Effect diet composition on precocious puberty and concentrations of IGF–1 in beef heifers. M. Maquivar*, L. A. Souto1, D. E. Grum1, D. M. Halford, S. C. Loerch1, A. V. Pires3, and M. L. Day1, The Ohio State University, Columbus, 1New Mexico State University, Las Cruces, NM, 2University of Sao Paulo, Piracicaba, Sao Paulo, Brazil.</td>
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<td>11:00 AM</td>
<td>309</td>
<td>Effect of the beta-agonist RU-42173 on growth and body composition of bulls. D. P. D. Lanna*, P. R. Leme2, F. G. F. Castro1, A. C. Vieira1, V. M. Quecini1, L. O. Tedeschi1, and L. L. Coutinho1, ESALQ/USP, Piracicaba, SP, Brazil, 2FZEA/USP, Pirassununga, SP, Brazil, 3Texas A&amp;M University, College Station.</td>
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<td>11:15 AM</td>
<td>310</td>
<td>Effects of ractopamine and gender on serum hormones and skeletal muscle gene expression in finishing steers and heifers. D. K. Walker*, E. C. Titgemeyer1, T. J. Baxa1, K. Y. Chung1, D. E. Johnson1, S. B. Laudert1, and B. J. Johnson1, 1Kansas State University, Manhattan, Elanco Animal Health, Greenfield, IN.</td>
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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. Invernizzi1,2, A. K. G. Kadegowda1, M. Bionaz1, G. Savoini2, R. E. Everts1, H. A. Lewin1, and J. J. Loor1, 1University 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. Boisclair2, and D. E. Bauman2, 1Pennsylvania 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. Man1, M. T. Sorensen1, K. Sejrsen1, R. M. Bruckmaier*, and C. Albrecht1, 1Institute 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.
SYMPOSIUM
Meat Science and Muscle Biology
Effects of By-product Feeding on Meat Quality Traits
Chair: Giuseppe Bee, Agroscope Liebefeld-Posieux
Sponsor: EAAP
514


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 Corporation, 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 Lange1, 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. Ball12, 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. Gutierrez*, D. Y. Kli, 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. Santschi1,2, D. Lefebvre3, C. L. Girard4, and D. Pellerin3, 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. Jolicoeur1,2, A. F. Brito2, D. Pellerin2, D. Lefebvre3, R. Berthiaume4, and C. L. Girard2, 1Université Laval, Québec, QC, Canada, 2Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 3Valacta, 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. Talbot1, and P. Lacasse1, 1Université de Sherbrooke, Sherbrooke, QC, Canada, 2Dairy 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*, S. Rungruang2, V. Wuthiranarith3, M. J. LeBruck3, and J. F. Smith1, 1University of Arizona, Tucson, 2Charoen Pokphand Group Co., Ltd., Bangkok, Thailand, 3Kansas 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. Campbell1, K. Hand1, D. F. Kelton1, F. Miglior2,3, and S. J. LeBlanc*1, 1University of Guelph, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada, 3Dairy 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. Weigel1, N. B. Cook1, C. L. Rawson2, and N. R. Zwald2, 1University of Wisconsin, Madison, 2Alto 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. Gohary4, S. S. Aly4, D. C. Wagner1, B. R. Hoar2, V. M. Lane3, and J. D. Rowe4, 1William R. Pritchard Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California, Davis, 2Department of Veterinary Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis, 3Department 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. DeVries, University of Florida, Gainesville.
Ruminant Nutrition
Fat Supplementation
Chair: Paul Kononoff, University of Nebraska
516c

9:30 AM 352 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. Nikkhah2, 1Isfahan University of Technology, Isfahan, Iran, 2Zanjan University, Zanjan, Iran.


10:00 AM 354 Effect of prepartum feed restriction and oilseed supplementation on peripartum cow metabolism. A. Hayirli1* and L. Doepel2, 1Atatürk University, Erzurum, Turkey, 2University of Alberta, Edmonton, AB, Canada.

10:15 AM 355 Effects of duodenal infusion of linolenic acid on milk fatty acid composition in dairy cows. D. P. Bu1, Khas-Erdene1, J. Q. Wang1*, 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.


11:00 AM 358 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.


11:30 AM 360 Lactation performance of dairy cows supplemented with different oil sources. J. A. Ye¹, C. Wang¹, H. F. Wang², H. W. Ye³, B. X. Wang², 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.

11:45 AM 361 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. Reis²*, 1Animal Science Department, Federal University of Ceará, Brazil, 2Veterinary School, Federal University of Minas Gerais, Brazil.

12:00 PM 362 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. Coyne¹*, 1, 2D. A. Kenny¹, and S. M. Waters¹, 1Animal Bioscience Centre, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, 2School of Agriculture, Food Science & Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.

Ruminant Nutrition 1
Chair: John Wagner, Colorado State University
516ab

9:30 AM 363 Oats grain as an alternative to corn in beef cattle diets. J. A. Marcenac1, H. M. Arelović1,2, M. F. Martinez1, M. I. Amelia1, and R. D. Bravo1,2, 1Dto. Agronomía-Universidad Nacional del Sur, 2Comisión de Investigaciones Científicas de la Provincia de Buenos Aires (CIC); CER20S, Bahía Blanca, Argentina.


10:15 AM 58 Effect of butyrate absorption on the severity of subacute ruminal acidosis... G. B Penner¹*, J. R. Aschenbach², G. Gäbel¹, and M. Oba¹, 1University of Alberta, Edmonton, AB, Canada, 2Universität Leipzig, Leipzig, Germany.
Effect of nitrogen supplementation on urea kinetics and microbial use of recycled urea in steers consuming corn-based diets. D. W. Brake*1, E. C. Titgemeyer1, M. L. Jone2, and D. E. Anderson2, 1Department of Animal Sciences and Industry, Kansas State University, Manhattan, 2Department of Clinical Sciences, Kansas State University, Manhattan.

Effects of a slow-release urea product on the N balance of growing cattle fed steam flaked corn. B. M. Bourg*1, T. A. Wickersham2, L. O. Tedeschi1, and J. M. Tricarico2, 1Dept. of Animal Science, Texas A&M University, College Station, 2Alltech Inc., Nicholasville, KY.

Effects of a slow-release urea product on performance and carcass characteristics of growing cattle fed steam-flaked corn. B. M. Bourg*1, L. O. Tedeschi1, J. M. Tricarico2, T. A. Wickersham2, and W. K. Krueger3, 1Dept. of Animal Science, Texas A&M University, College Station, 2Alltech Inc., Nicholasville, KY.

Dose and release pattern of anabolic implants affects growth of finishing beef steers. S. L. Parr*1, K. Y. Chung1, J. P. Hutcheson2, W. T. Nichols2, D. A. Yates2, M. N. Streeter2, R. S. Swingle3, M. L. Galyean1, and B. J. Johnson1, 1Texas Tech University, Lubbock, 2Intervet / Schering-Plough Animal Health, De Soto, KS, 3Cactus Research Ltd., Amarillo, TX.

ASAS Early Career Achievement Award: Nutritional and management methods to decrease nitrogen losses from beef feedlots. G. E. Erickson* and T. J. Klopfenstein, University of Nebraska, Lincoln. Sponsor: ASAS Foundation

Increasing dietary concentration of coconut oil reduces enteric methane emission from lactating Holstein cows. M. Hollmann*, W. J. Powers1,2, A. Fogiel1, N. M. Bello1,3, J. S. Liesman1, and D. K. Beede1, 1Department of Animal Science, Michigan State University, East Lansing, 2Department of Biosystems Engineering, Michigan State University, East Lansing, 3College of Agriculture and Natural Resources Statistical Consulting Center, Michigan State University, East Lansing.

Effects of two strains of Saccharomyces cerevisiae on methane emissions from Holstein dairy cattle. Y.-H. Chung*1, S. M. McGinn1, N. Walker2, and K. A. Beauchemin1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Lallemand Animal Nutrition, Montréal, QC, Canada.

The effect of pre-grazing herbage mass on growth rate and methane emissions of grazing beef cattle. T. M. Boland*, K. J. Hart, K. M. Pierce, B. M. Lynch, R. McDonnell, D. Murphy, A. K. Kelly, and D. A. Kenny, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin, Ireland.

SYMPOSIUM
Small Ruminant
Organic and Grass-Fed Small Ruminant Challenges and Opportunities
Chair: Joan Burke, USDA, ARS, Booneville, AR
Sponsor: AMPA

Obstacles to organic and grass fed small ruminant production in the U.S. J. M. Burke*, USDA, Agricultural Research Service, Booneville, AR.

Ecology as a model for organic dairy production. F. Thicke*, Radiance Dairy, Fairfield, IA.

Successful organic dairy systems. K. J. Soder*, USDA-ARS, Pasture Systems & Watershed Mgmt. Research Unit, University Park, PA.

Grass-fed management systems for profitable livestock production. S. K. Duckett* and J. G. Andrae, Clemson University, Clemson, SC.

Discussion

Dairy Foods
Danisco International Dairy Science Award Lecture
Chair: John Lucey, University of Wisconsin
Sponsor: Danisco

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 I
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*1, J. Feddes2, D. Korver2, D. B. Haley3, 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. Marti*1,2, A. Velarde2, J. L. de la Torre1,3, A. Bach1,2, X. Manteca1,3, A. Aris2, A. Serrano2, and M. Devant1,3, 1Animal Nutrition, Management, and Welfare Group, Barcelona, Spain, 2IRTA, Barcelona, Spain, 3UAB, 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. González*, K. S. Schwartzkopf-Genswein1, E. Fierheller1, E. Janzen2, N. A. Caulkett3, T. A. McAllister4, D. B. Haley5, J. M. Stookey5, and S. Hendrick6, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2University of Calgary, Calgary, AB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada, 4University 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. Higginson*, K. E. Leslie1, S. T. Millman2, and D. F. Kelton1, 1University of Guelph, Guelph, Ontario, Canada, 2Iowa State University, Ames.


3:30 PM 384 Break

3:45 PM 384 A comparison of the effects of two different Korral Kool® systems on dairy cows in a desert environment. X. Ortiz*, J. Smith1, B. Bradford1, J. Harner1, and A. Oddy2, 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. Oddy2, 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. Burdick*, J. A. Carroll2, R. D. Randel1, S. T. Willard1, R. C. Vann1, C. C. Chase, Jr.1, D. A. Neuendorff1, A. W. Lewis1, J. W. Dailey1, L. E. Hulbert7, L. C. Caldwell1, J. G. Lyons1, 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*, J. 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. Gengler1,2, and H. Soyeurt1, 1Gembloux Agricultural University, Animal Science Unit, Gembloux, Belgium, 2National Fund for Scientific Research, Brussels, Belgium.

3:00 PM Break


3:30 PM 407 Estimates of genetic parameters among body condition score and fertility traits in first-parity Canadian cows. C. Bastin*, 1, S. Loker1, N. Gengler1,2, and F. Miglior1,2,3, 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. Cutulicic*, 1, L. Delaby1, G. Michel1, and C. Disenhaus1, 1INRA UMR1080 Dairy Production, Rennes, France, 2INRA UE326 Le Pin-au-Haras, Exmes, France.

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*, B. 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, S. Tsuruta1, W. O. Herring1, J. Holl2, and M. Culbertson1, 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. Holl2, W. O. Herring1, 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*, C. Maltecca1, J. P. Cassidy1, S. Price1, and M. T. See1, 1North Carolina State University, Raleigh, 1Ivey 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 Berkell1, S. Wyss1, B. Sullivan1, and S. Chen2, 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.
Estimation of the IG2F 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.

Impact of grazing 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.

Proximal promoter of the pig HMGCR gene: Structural and functional study. A. Cánovas1, R. Quintanilla2, J. M. Reecy2, M. Marqués1, and R. N. Pena3,1IRTA. Genetica e I Millora Animal, Lleida, Spain, 2Iowa State University, Ames, INDEGA. 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, 1Laboratory of Milk Quality Analysis, UFMG, Belo Horizonte, MG, Brazil, 2University 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. Barbano2*,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. Barbano2*,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, 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. Bansal1*, N. Y. Farkye2, and M. A. Drake3, California 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*, S. Govindasamy-Lucey2, J. A. Lucey1, J. J. Jaeggi1, and M. E. Johnson2, Department of Food Science, University of Wisconsin, Madison, Wisconsin 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*, M. M. Motawee1, 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*, M. E. Johnson1, and J. A. Lucey1, 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, 1University of Lorraine, Nancy, France, 2Cairo University, Cairo, Egypt.

4:15 PM 439 Impact of varying CO2 and O2 concentrations during the peak of lactation on milk quality, yield and mammary gland health. L. Maignel*, J.-P. Daigle2, and B. Sullivan1, 1Canadian Centre for Swine Improvement, Ottawa, ON, Canada, 2Centre de Développement du Porc du Québec, Lévis, QC, Canada.

4:30 PM 440 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

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


2:30 PM 448 Impact of varying CO2 and O2 concentrations during stunning and carcass chilling conditions on pork quality traits. G. Bee*, M. Gerritzen2, M. Mull2, C. Bioley1, G. Guex1, B. Dougoud1, and C. Vonnez1, Agroscope Liebefeld Posieux, Research Station ALP, Posieux, Switzerland, Animal 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*, 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. Riley1, C. C. Chase Jr., 2, M. F. Miller, 1, J. C. Brooks, 2, D. D. Johnson, 1, W. A. Phillips, 1, and T. A. Olson, 1 1USDA ARS STARs, Brooksville, FL, 2Texas Tech Univ., Lubbock, 1Univ. 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*, 1, T. M. Nath, 2, D. M. Wulf, 3 and A. D. Weaver, 1 South Dakota State University, Brookings.

4:00 PM  453  Water access and the carcass characteristics of Holstein slaughter cows. K. D. Vogel*, 1, J. R. Claus, 2, T. Grandin, 3 G. R. Oetzel1, 2, and D. M. Schaefer, 1 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*, 1, S. T. Willard, 2 E. L. Schenck, 2, J. M. Martin1, K. Moulton1, W. Holmes1, A. Brown2, B. Thomas, 1, T. E. Lawrence2, and M. S. Brown1, 1MAFES-Brown Loam Exp. Stat., Mississippi State University, Raymond, 2Mississippi State University, Starkville, 4West 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*, 1, D. L. McLaren1, H. C. Block, 1, M. E. R. Dugan, 2, Y. Wang, 1, and T. A. McAllister1, 1Teagasc, Ashtown Beef Research Centre, Ashtown, Dublin, Ireland, 2University College Dublin, Belcamp, Dublin, Ireland, 3Teagasc, Grange Beef Research Centre, Dunsany, County Meath, Ireland.

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. Dunne1, F. J. Monahan2, and A. P. Moloney*, 1, 3, 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  Panel discussion: How should future mineral requirement studies be designed? James Fleet, Gretchen Hill, and Scott Radcliffe.

4:40 PM  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*, 1North 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.

3:05 PM 463 Comparison of progestin-based protocols to synchronize estrus and facilitate AI in postpartum beef cows. D. J. Wilson*, D. A. Mallory1, D. C. Busch1, N. R. Leitman1, J. K. Haden1, D. J. Schafer2, M. R. Ellersieck1, M. F. Smith1, and D. J. Patterson1, 1University of Missouri, Columbia, 2MFA, Inc., Columbia, MO.

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.


3:50 PM Break

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. Lemenager1, M.C. Claeyi1, 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 Presynchronization with hCG 7 d prior to estrous synchronization and replacement of GnRH with hCG at fixed-time AI (TAl) in suckled beef cows. G. Marquezini*, C. R. Dahlén3, S. L. Bird4, B. J. Funnell3, 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.

4:30 PM 468 Administration of human chorionic gonadotropin (hCG) 7 days after insemination of suckled beef cows. C. R. Dahlén*, S. L. Bird2, C. A. Martel1, K. C. Olson1, J. S. Stevenson2, and G. C. Lamb3, 1Northwest Research and Outreach Center, University of Minnesota, Crookston, 2North Central Research and Outreach Center, Grand Rapids, MN, 3Department of Animal Sciences and Industry, Kansas State University, Manhattan, 4North Florida Research and Education Center, University of Florida, Marianna.

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. Ahmad1, M. Mushtaq2, and J. Singh3, 1Department of Theriogenology, University of Veterinary & Animal Sciences, Lahore, Pakistan, 2Buffalo Research Institute, Pattoki, Pakistan, 3Department 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. Shreck*, N. A. Pyatt2, L. L. Berger2, J. M. Dahlquist1, T. G. Nash1, and D. Bravo3, 1University of Illinois, Urbana, 2ADM Research, Decatur, IL, 3Pancosma, Geneva, Switzerland.


2:30 PM 472 Synergy of cinnamaldehyde, eugenol and garlic for reduction of methane production in vitro. S. Cavini1, D. Bravo*, S. Calsamiglia1, M. Rodriguez1, A. Ferret1, and G. Schroeder1, 1Universitat Autonoma de Barcelona, Barcelone, Spain, 2Pancosma, Geneva, Switzerland, 3ADM Research, Decatur, IL.

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. Bravo*, 1Universitat Autonoma de Barcelona, Bellatera, 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. Santos*, P. H. Robinson4, and P. W. Williams5, 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. Kamel*, H. M. R. Greathead5, and P. W. Cardozo5, 1School of Biology, University 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. Varga, 1, T. Cassidy 1, M. Long 1, K. Heyler 1, C. J. Hovde 1, and I. Yoon 1, 1Pennsylvania State University, University Park, 2University of Idaho, Moscow, 3Diamond 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 4, H. Nursoy 4, G. A. Broderick 4, and A. P. Faciola 4, 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.

4:15 PM 479 Effects of dietary antioxidants, trace minerals and calcium salt of 2-hydroxyl-4-methylthio butanoic acid (Ca-HMTBa) supplementation on lactation performance. G. R. Bowman*, 1, M. Vázquez-Añón 1, D. E. Diaz 1, and J. Nocek 1, 1Novus International, Inc., St. Charles, MO, 2Spruce Haven Research, Union Springs, NY.

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. Hippen 1, K. F. Kalscheur 1, D. J. Schingoethe 1, D. L. Prentice 1, and H. B. Green 1, 1South Dakota State University, Brookings, 1Elanco 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. Vlaeminck 4, M. Hostens 2, G. Opsomer 2, and V. Fievez 1, 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
517b

2:00 PM Introduction. Masahito Oba.

2:05 PM 482 Introduction to molecular techniques currently used in ruminant nutrition research. J. R. Knapp*, Fox Hollow Consulting, LLC, Columbus, OH.

2:30 PM 483 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.

3:10 PM 484 Metagenomics of the rumen microbial ecosystem. D. Krause*, University of Manitoba, Winnipeg, Canada.

3:50 PM 485 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 486 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
511cf

2:00 PM 487 Effects of kid genotype on carcass traits of meat goats from a three-breed diallel. R. Browning, Jr.*, 1, W. Getz 2, O. Phelps 2, and C. Chisley 4, 1Tennessee State University, Nashville, 2Fort Valley State University, Fort Valley, GA, 1USDA-AMS, Lakewood, CO, 2Southern University, 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. Mendel 1, P. V. Kremer 1, E. Gruber 1, A. Steiner 1, K.-U. Goetz 2, and M. Foerster 1, 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*1,2, F. Castonguay3, 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 anthelminitics and copper oxide wire particles in meat goat kids. M. Rothaug2, K. Andries*1, E. Sherrow1, and J. Burke1, 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**1, S. D. Nelson1, J. C. Laurenz1, and M. R. Garcia1, 1Texas A&M University, Kingsville, 2Texas AgriLife Research, Beeville, 3Eastern 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. Tomaszewski1, 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. Ahmadi1, R. A. Verdugo1, G. A. E. Gall2, and J. F. Medrano**, 1Genética 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 absorbent on blood metabolites of dairy cows challenged with aflatoxin B1. M. R. Akkaya1, M. A. Bal1, F. Inanc Tolun1, F. Bilge1, Y. Atlı1, and V. Akay*, 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*,1, M. A. G. von Keyserlingk2, D. M. Veira3, D. M. Weary1, and W. Heuwieser1, 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 Alamouti*, H. Amanlou1, K. Rezayazdi1, and A. Towhid1, 1University of Tehran, Karaj, Tehran, Iran, 2Zanjan University, Zanjan, 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. Nelson*, D. C. Beltz1, T. A. Reinhardt1, and J. D. Lippolis1, 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. Byrem*, 1Animal Improvement Programs Laboratory, ARS, USDA, Beltsville, MD, 2Antel BioSystems, Lansing, MI.


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*, K. E. Olson2, and J. McDonald1, 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*, S. Dufour1, D. T. Scholl1, and J. T. DeVries2, 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*, 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. Santos1, and R. G. S. Bruno1, 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*, H. B. Roman1, T. R. Overton1, D. E. Bauman2, W. R. Butler, 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*, University of Alberta, Edmonton, Alberta, Canada.


W17 Effects of Bacillus subtilis on antioxidant capacity and immunity of broilers. Y. Dongyou, M. Xiangfei, O. Yan, and L. Weifen*, College 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. Łu*, L. Yan, J. Guo, Z. Sun, and S. Zhu, Research and Development Center, Liuhe Feed Co., Ltd., Qingdao, Shandong, China.
W20 Immune response in quail fed with or without genetically modified Bt-maize. N. Scholtz*, G. Flachowsky2, and H. Sauerwein1, 1University of Bonn, Bonn, Germany, 2Friedrich-Loeffer-Institute, Braunschweig, Germany.

W21 Ameliorating effect of ascorbic acid on subacute endosulfan toxicity in male New Zealand White rabbits. F. S. Hatipoglu1, O. Ozmen3, A. Ata5, T. Ileri-Buyukoglu1, S. Sahinduran5, F. Mor6, O. Yildiz-Gulay1, and M. S. Gulay*, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Pathology, Burdur, Turkey, 2Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Pathology, Burdur, Turkey, 3Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Burdur, Turkey, 4Burdur State University, Department of Animal Science, Stillwater, 5Oklahoma State University, Department of Veterinary Clinical Sciences, Stillwater, 6Oklahoma State University, Department of Veterinary Pathobiology, Stillwater.

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. Zanieratto*, 1Veterinary Medicine Faculty, Department of Biopathological Science and Hygiene of Food and Animal Productions, Perugia, Italy, 2SOP Srl, Busto Arsizio, Italy.


W26 Residual feed intake in progeny of Nellore bulls. Y. B. Farjalla1, C. U. Magnabosco2, F. Manicardi2, F. R. C. Araújo4, D. P. D. Lanna*1, and R. D. Sainz5, 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, 5University of California, Davis.


W28 Carcass traits of beef heifers of different genetic groups finished with different concentrate allowance levels. S. F. Reis1, P. V. R. Paulino*, E. J. Souza1, J. F. Lage1, R. A. A. Torres Júnior1, S. C. Valadares Filho2, 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*, B. E. Steep1, R. W. Fulton1, L. J. DeSilva1, and C. R. Krehbiel, 1USDA-ARS, Grazinglands Research Laboratory, El Reno, OK, 2University of Nebraska, Lincoln.

W31 Fatty acid profile of back fat and intramuscular fat from yak and Chinese Yellow Cattle. Y. S. Peng*, 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.

Improving the profitability of beef from pastures: A case study of Tasmania’s Circular Head Beef Business Group. A. E. O. Malau-Adull1, I. 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.

Breeding and Genetics
Genomic Evaluation, Molecular Genetics, Statistical Methods, Sheep Breeding, and Swine Breeding

Value of genome-wide selection in Japanese dairy population. H. Ohmiya* and M. Suzuki, Obihiro University of Agriculture & Veterinary Medicine, Obihiro, Hokkaido, Japan.


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. Wiggins, 1University of Guelph, Guelph, ON, Canada, 2Canadian Dairy Network, Guelph, ON, Canada, 3Dekoppel Consulting, Chiaverano, TO, Italy, 4Agricultural Research Service-USDA, Beltsville, MD.

Integrated software tools for genome-wide association analysis and genomic prediction in livestock. J. R. O'Connell*, University of Maryland School of Medicine, Baltimore.


Investigation for increase reproduction rate with used of identification QTL associated with twining in Shall sheep. N. Hedayat-Ervigh*, S. R. Miraei-Ashadi, and A Nejati-Javaremi, University of Tehran, Karaj, Tehran, Iran.


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, Milano, Italy.


Development of a two-species cDNA microarray for transcriptional profiling of sow and dairy cow reproductive traits. M. F. Palin*, D. Beaudry, M. Vallée, N. Bissonnette, B. D. Murphy, and H. V. Peet, 1University of Guelph, Guelph, ON, Canada, 2University of Laval, Québec, QC, Canada, 3University of Montreal, St-Hyacinthe, QC, Canada.

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.

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.

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. Aldal, 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, 3Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403-1st Avenue South, Lethbridge, Alberta, Canada.

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.
Dairy Foods
Dairy Products/Chemistry/Enzyme

W63 Calcium reduces DMH-induced large intestinal tumors in male Wistar rats. K. Sivieri*1 and E. Rossi2, 1Universidade Norte do Paraná-UNOPAR, Londrina, Paraná, Brazil, 2Universidade Estadual Pílula-UNESP, Araraquara, São Paulo, Brasil.

W64 Effect of storage temperatures on ice cream quality. J. Buyck* and R. Baer, South Dakota State University, Brookings.

W65 Obtention of a dairy ingredient rich in milk fat globule membrane material from whey buttermilk. M. R. Costa*2, R. Jiménez-Flores1, and M. L. Gigante2, 1Universidade Norte do Paraná, Londrina, Paraná, Brazil, 2Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, 3California Polytechnic State University, San Luis Obispo.

W66 Effect of pH on functional properties of regular and whey buttermilk powders. M. R. Costa*2, R. Jiménez-Flores1, and M. L. Gigante2, 1Universidade Norte do Paraná, Londrina, Paraná, Brazil, 2Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, 3California Polytechnic State University, San Luis Obispo.

W67 Milk iodine concentration in goats supplemented with potassium iodide. A. Nudda*1, F. Aghini-Lombardi2, G. Batteacone1, M. Decandia1, M. Frigeri1, and G. Pulina11, 1Dipartimento di Scienze Zootecniche, University of Sassari, Italy, 2Dipartimento di Endocrinologia e Metabolismo, University of Pisa, Italy, 3Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.

W68 Antioxidant properties of milk protein dispersions preheated with various sugars. H. J. Giroux*, J. Houde, and M. Britten, Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint-Hyacinthe, QC, Canada.

W69 Main phospholipids content of sweet whey cream, butter and buttermilk. M. R. Costa*2, R. Jiménez-Flores1, and M. L. Gigante2, 1Universidade Norte do Paraná, Londrina, Paraná, Brazil, 2Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, 3California Polytechnic State University, San Luis Obispo.

W70 Expression of milk-derived angiotensin-converting-enzyme-inhibiting peptide in Lactococcus lactis. X. Han2, L. Yao1, M. Wang1, D. Sun1, B. Li2, and Y. Jiang*1, 1National Dairy Engineering & Technical Research Center, Northeast Agricultural University, Harbin, China, 2Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China.

Improvement of emulsifying 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, Louisiana State University, Baton Rouge, Louisiana State University Agricultural Center, Baton Rouge, Louisiana State University, 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, Louisiana State University Agricultural Center, Baton Rouge, Baton Rouge, Baton Rouge, LA.

Improving the quality of yogurt with modified whey protein ingredients. P. T. Matumoto-Pintro*, L. Rabiei, 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. Nouira1,2, Z. Guler2, and Y. W. Park*, Fort Valley State University, Fort Valley, GA, Mustafa 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. Gragson3, D. W. Everett3, 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.


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. Zhang*1,2 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 nongerminated 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. Lanwei1, 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. Li3, Y. Jiang4, 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. Silva², L. M. Fonseca*¹,², and R. L. Bradley Jr.³, 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* 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. Pereira², and A. C. Gerry³, 1University of California, Riverside, 2University of California, Riverside, 3University of California, Davis.

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.

W100 Financial performance of dairies in Florida and Georgia in 2007. L. O. Ely*¹, A. DeVries², R. Giesy³, M. Sowerby⁴, B. Broadus⁵, and C. Vann⁶, 1University of Georgia, Athens, 2University of Florida, Gainesville.


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 Martí⁴, 1University of Idaho, Caldwell, 2University of Idaho, Marsing, 3University of Idaho, Twin Falls, 4University of Idaho, Gooding.

W106 Hoof care workshop in English and Spanish. M. Chahine*¹, T. S. Hirsch², J. M. DeFreain³, T. Fife³, and M. E. de Haro Martí⁴, 1University of Idaho, Twin Falls, 2Zinpro Corporation, Eden Prairie, MN, 3University of Idaho, Gooding.

W107 TMR feeder schools in English and Spanish. R. J. Norell*¹, M. Chahine², and M. E. de Haro Martí³, 1University of Idaho, Idaho Falls, 2University of Idaho, Twin Falls, 3University of Idaho, Gooding.


Forages and Pastures
Silages

W111 Master goat producer’s training certification program at Tuskegee University. O. U. Bolden-Tiller*, S. Solaiman, and N. K. Gurung, Tuskegee University, Tuskegee, AL.

W112 Influence of citronella and geranium essence treatment on milk aroma. S. Carpino1, G. Belvedere2, T. Rapisarda*, G. Azzaro*, and G. Licitra1;2,1CorRiLaC, Regione Siciliana, Ragusa, Italy;2D.A.C.P.A. University of Catania, Italy.


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. Conrado1, J. Pavan Neto1, P. Meyer2, C. Marino1, and P. Rodrigues1,1University of São Paulo, Pirassununga, São Paulo, Brazil;2Brazilian 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 Bedrosian1, W. Hu2, O. G. Pereira1, L. A. Williams3, M. A. Gilinsky1, and L. Kung Jr.,1University of Delaware, Newark;2Universidade de São Paulo, Piracicaba, SP, Brazil;3Universidade Federal de Vícosa, Vícosa, MG, Brazil.

W118 Using molecular techniques to identify and differentiate bacterial species and strains used in commercial silage inoculants. N. D. Walker*, M. E. Quintino Cintora1, R. Schmidt*, and R. Charley1,1Lallemand Animal Nutrition, Montreal, Quebec, Canada;2Lallemand 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, University of Milan, Milan, Italy.

W120 Nutritive value and fermentation profile of sorghum silages with urea and two storage periods. F. E. P. Fernandes1, R. Garcia*, A. J. V. Pires2, O. G. Pereira1, and C. S. Fernandes1,1Federal University of Viçosa, Viçosa, MG, Brazil;2State University of Bahia, Itapetinga, BA, Brazil;3Fapemig, Belo Horizonte, MG, Brazil.

W121 Elephantgrass with and without wilting, added of cassava meal in silage production. R. Garcia*, A. C. Oliveira1, A. J. V. Pires2, O. G. Pereira1, and F. E. P. Fernandes1,1Federal University of Viçosa, Viçosa, MG, Brazil;2State University of Bahia, Itapetinga, BA, Brazil.

W122 Effects of ensiling corn and sorghum silages under normal or adverse conditions on proportion of long chain fatty acids. B. C. do Amaral1, S. C. Kim2, O. F. Zacaroni1, A. T. Adesogan1, and C. R. Staples*,1University of Florida, Gainesville;2Gyeongsang National University, Jinju, South Korea.

W123 Nutritive value of corn hybrids for silage production according to the maturity stage. M. Zoppallato*, L. G. Nussio1, J. O. Sartur1, G. B. Mourão1, A. P. Duarte2, C. M. M. Bittar1, and V. P. Santos1,1University of Sao Paulo/ESALQ, Piracicaba, SP, Brazil;2University of Nebraska, Lincoln;3Apta Regional, Assis, SP, Brazil.

W124 Nutritional quality of sunflower silage associated with additives. R. H. de Tonissi e Buschinelli de Goes*, K. A. de Souza1, E. S. Myagi1, R. A. Patussi1, K. C. da Silva Brabes1, A. C. Martinez1, C. O. de Abreu1, E. R. de Oliveira1, and D. D. Alves1,1Universidade Federal da Grande Dourados, Dourados, Mato Grosso do Sul, Brazil;2Universidade Estadual de Maringá, Umuarama, Paraná, Brazil;3Universidade Estadual de Goiás, Goiânia, Goiás, Brazil;4Universidade Estadual de Montes Claros, Janaúba, 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-Ramirez*1;2, C. Rodríguez-Muela1, R. Bocourt-Salabarria1, C. Chávez-Hernández2, O. Ruiz-Barrera1, C. Hernández-Gómez2, R. Jasso-Ibarra2, and C. Holguín-Licón1,1Universidad Autónoma de Chihuahua, Chihuahua, México;2INIFAP, Campo Experimental Delicias, Delicias, Chihuahua, México;3Instituto de Ciencia Animal, Habana, Cuba.


W130 Nitrogenous compounds and fermentation characteristics of king grass - leucaena silages. T. Clavero and R. Razz.


W140 Factors affecting milk production in Brazil. R. P. Lana, G. Guimarães, A. V. Guimarães, and M. A. Santos.


Nonruminant Nutrition
Feed Additives II

W144  Effect of dietary medicinal plants or an organic acid on ileal nutrient digestibility of Ross broiler chickens. H. Ziaei*, M. Bashtani†, M. A. Karimi Torshizi‡, H. Farhangfar*, H. Naeemipour‡, and A. Zeinali*, †Agricultural Research Center, Birjand, Iran, ‡Birjand University, Birjand, Iran, †Tarbiat Modares University, Tehran, Iran.

W145  Effect of a dietary herbal medicine and an organic acid on bone characteristics of Ross broiler chickens. H. Ziaei*, M. Bashtani†, M. A. Karimi Torshizi‡, A. Zeinali*, H. Naeemipour‡, and H. Farhangfar*, †South Khurasan Agricultural and Natural Resources Researches Center, Birjand, Khorasan, Iran, ‡Birjand University, Birjand, Khorasan, Iran, †Tarbiat Modares University, Tehran, Iran.

W146  The effect of ractopamine and ileal digestible lysine levels on growth performance and carcass characteristics of finishing pigs. D. Fontes*, E. C. Almeida†, E. T. Fialho*, M. A. Zangeronimo‡, N. O. Amaral‡, L. M. Pereira, Jr.†, and P. B. Rodrigues‡, †University Federal of Lavras, Lavras, MG, Brazil, ‡University Federal Minas Gerais, Belo-Horizonte, Brazil.


W149  Effects of ginger root powder on growth performance and antioxidant status of broiler chickens. G. F. Zhang†, Z. B. Yang*, Y. Wang‡, W. R. Yang§, X. Y. Zhao†, and S. Z. Jiang†, †Shandong Agricultural University, Tai-an, Shandong, China, ‡Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, §Tsinghua University, Beijing, China.


W151  The effect of dietary laminarin and fucoidan in the diet of the weanling 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, Newcals, Co Dublin, Ireland.

W152  Ananthopanax senticosus extract improved growth performance and antioxidative capacity in weaned piglets. X. Wu†, F. Y. Yan§, Y. L. Yin*, X. F. Kong‡, T. J. Li*, R. L. Huang†, and L. X. Chen‡, †The Chinese Academy of Sciences, Changsha, China, ‡Guang An Biological Technique Company, China.


W156  Effects of dietary wild-ginseng adventitious root meal and meat quality in broiler chicks. H. D. Jang*, E. J. Han†, W. K. Jeon‡, K. Y. Paek§, S. D. Lee†, J. C. Park*, and I. H. Kim*, †Dankook University, Cheonan, Choongnam, Korea, ‡Chungbuk University, Cheongju, Chungbuk, Korea, §Korea Institute of Oriental Medicine, Daejeon, Korea, *National Institute of Animal Science, RDA, Cheonan, Choongnam, Korea.


W159  Effects of delta-aminolevulinic acid and antibiotics on the growth performance, nutrient digestibility, hematological status, and immune responses of weaning pigs. J. C. Park†, J. S. Yoo‡, J. H. Lee†, R. Noble†, S. H. Oh‡, and I. H. Kim†, †Dankook University, Cheonan, Choongnam, Korea, ‡North Carolina A&T State University, Greensboro.


W163  Effects of complex probiotics supplementation on growth performance, fecal gas emission and meat quality in finishing pigs. J. H. Jung**, H. J. Kim†, S. M. Hong†, C. Y. Lee†, and B. C. Park†, Dankook University, Cheonan, Chungnam, Korea; Jinju National University, Jinju, Gyeongnam, Korea; CI Feed Inc., Inchon, Gyeonggi, Korea.


W165  Effects of yucca and Bacillus subtilis on nutrient digestibility, fecal noxious gas content and meat quality in finishing pigs. J. H. Lee**, H. J. Kim†, S. M. Hong†, S. H. Oh†, R. Noble†, and I. H. Kim†, Dankook University, Cheonan, Chungnam, Korea; North 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. Shivasad, University of Tehran, Karaj, Tehran, Iran; National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.


W173  Effects of yeast fermentation products on fecal consistency and gut microbial population in weaned piglets challenged with Escherichia coli K88+. S. K. Bhandari*, E. Kiarie1, M. Sco*, E. McCartney†, and M. I. Gracia†, University of Guelph, Ontario, Canada; Institute of Animal Science, RDA, Cheonan, Choongnam, Korea; National Institute of Animal Science, RDA, Cheonan, Chungnam, Korea.

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.

W175  Effects of acids on growth performance and intestine health in weanling piglets. P. Li†, H. J. Zhang†, Y. Miao†, S. G. Wu**, H. Y. Yue†, and G. H. Qi†, Feed Research Institute of Chinese Academy of Agricultural Sciences, Beijing, China; Institute of Animal Husbandry and Veterinary Science, Tianjin Academy of Agricultural Sciences, China; Beijing General Station of Animal Husbandry and Veterinary, China.

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.
Physiology and Endocrinology
Livestock and Poultry

W188 Early prediction tools for the selection of reproductive traits on spring born crossbred Angus heifers. R. A. Franco*, G. Scaglia1, W. S. Swecker1, and M. L. Wahlberg2, 1Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg, 2Virginia State University AgCenter-Iberia Station, Jeanerette, 1Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg.

W189 Endometrial gene expression of estradiol, progesterone, and oxytocin receptors in anestrous Bos indicus cows treated with progesterone. O. G. Sa Filho*, 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, 1Amlan International, Chicago, IL.

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, 1Amlan International, Chicago, IL.

W185 Evaluation of the efficacy of a commercial purified phyllosilicate to reduce the toxicity of zearalenone + deoxynivalenol in gilts. K. Bond1, C. K. Maune1, J. R. Stoltz2, R. J. Malone1, and D. Zaviezo*1, 1Trilogy Analytical Laboratory, Washington, MO, 2Special Nutrients, Miami, FL.


W191 Embryo transfer following treatment of cystic ovaries in cattle. C. E. Ferguson*, F. M. LeMieux1, D. J. Kesler2, and R. A. Godke3, 1McNeese State University, Lake Charles, LA, 4University of Illinois, Urbana, 2Louisiana State University, Baton Rouge.

W192 GnRH affects emergence of a new follicular wave in cows with cystic ovaries. E. Dirandeh, H. Kohram*, T. Saberifar, and A. Zare Shahneh, University of Tehran, Iran.

W193 Immediate and carryover effects of Gram-negative or Gram-positive toxin-induced mastitis on follicular functions in cows. Y. Lavon1, G. Leitner2, R. Meidan3, U. Moallem2, E. Klipper1, and D. Wolfenson1, 1The Hebrew University, Rehovot, Israel, 2The Veterinary Institute, Bet-Dagan, Israel, 3Agricultural Research Org, Bet-Dagan, Israel.


W195 Pregnancy success and luteal function of lactating Holstein cows after hCG on day 5 after insemination. E. Urzua1, C. G. Gutierrez2, A. Garza1, C. Corona1, G. Mapes1, and J. Hernandez-Ceron*1, 1Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, México, 2Beta San Gabriel S.A. de C.V., Torredel, México, 1Intervet Schering Plough Animal Health, México.

W196 Plasma LH concentrations and CL function in Holstein cows given porcine LH, GnRH, or estradiol benzoate. M. G. Colazo*, T. O. Ree2, A. G. A. Lamont3, J. P. Kastelic4, R. J. Mapletoft5, and D. J. Ambrose*1, 1Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 2Lakehead College, Vermilion, AB, Canada, 3University of Alberta, Edmonton, AB, Canada, 4Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 5Agriculture and Agri-Food Canada, Saskatoon, SK, Canada.

W197 Prostaglandin (PG) E1 or E2 (PGE1, PGE2) luteal implants prevent luteolysis in cows. C. W. Weems*, Y. S. Weems2, R. C. Vann2, S. P. Ford1, D. A. Neuendorff1, A. W. Lewis1, T. A. Welsh2, T. M. Nettt2, P. J. Bridges1, and R. D. Randle3, 1University of Hawaii, Honolulu, 2Mississippi State University, Raymond, 3University of Wyoming, Laramie, 4Texas A&M University, Overton, 5Texas A&M University, College Station, 6Colorado State University, Fort Collins, 7University of Kentucky, Lexington.
W198 The effect of a shortened dry period on follicular dynamic in early lactation Holstein cows. S. Safa1, A. Heravi Moussavi1,1, M. Danesh Megasaran1, and A. Soleimani1,2, 1Department of Animal Science, Ferdowsi University of Mashhad, Iran, 2Islamic Azad University- Kashmar Branch, Iran.

W199 Characteristic of the largest follicle of the waves emerged after treatment with GnRH during estrous cycle of Iranian Holstein cows. E. Diran and H. Kohram*, University of Tehran, Karaj, Tehran, Iran.

W200 Subclinical mastitis effects on steroid concentrations and gene expression in theca cells of preovulatory follicles in cows. Y. Lavon*, G. Leitner2, R. Meidan3, E. Klipper3, and D. Wolfenson1, 1The Hebrew University, Rehovot, Israel, 2The Veterinary Institute, Bet-Dagan, Israel.

W201 Effect of dry period lengths on complete blood count in early lactating Holstein cows. A. Soleiman1,2, A. Heravi Moussavi3, M. Danesh Megasaran4, A. Golian1, and S. Safa1, 1Department of Animal Science, Ferdowsi University of Mashhad, Iran, 2Islamic Azad University-Kashmar Branch, Iran.


W203 Effect of melatonin on in vitro manipulated rat oocytes and embryos. S. Nandi1,2, V. Girish Kumar2, and F. C. Gwadzakas2, 1National Institute of Animal Nutrition and Physiology, Bangalore, India, 2Karnataka Veterinary Animal and Fishery Sciences University, Bangalore, India, 3Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg.

W204 17β-estradiol and spontaneous myometrial contractions in ovariectomized rats. O. Yildiz-Gulay*, A. Bulbul3, M. S. Gulay4, K. Altunbas3, and O. Ozden-Akayaya*, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey, 2Afyonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Physiology, Afyonkarahisar, Turkey, 3Afyonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Histology and Embryology, Afyonkarahisar, Turkey.


W206 Detection of alternative splicing form of PRL mRNA in the chicken anterior pituitary gland. N. Kansaku*1, T. Sasanami2, T. Ohkubo3, and E. Dirandeh and H. Kohram*, 1University-Kashmar Branch, 2University of Tehran, Karaj, Tehran, Iran.

W207 Culture of chicken germline stem cells. J. N. Peff, 17th Estradiol and spontaneous myometrial contractions in ovariectomized rats. O. Yildiz-Gulay*, A. Bulbul3, M. S. Gulay4, K. Altunbas3, and O. Ozden-Akayaya*, 1Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Department of Physiology, Burdur, Turkey, 2Afyonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Physiology, Afyonkarahisar, Turkey, 3Afyonkarahisar Kocatepe University, Faculty of Veterinary Medicine, Department of Histology and Embryology, Afyonkarahisar, Turkey.

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. Betancourt1, C. J. Jaramillo1, A. Umaña1, D. Barrera1, and D. R. Chamorro1, 1Universidad de La Salle, Bogotá, Colombia, 2Corpoica, 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 new co-products from bio-energy production using infrared spectroscopy with multivariate techniques-AHCA and PCA: Comparison among blends 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, University of Saskatchewan, Saskatoon, SK, Canada.


W213 Copper and zinc accumulation in dairy production systems. T. Downing*, K. Stiglbauer, M. Gamroth, and J. Hart, Oregon State University, Corvallis.

W214 Growth performance, carcass yield and economical evaluation of two genotypes of quails under two housing systems. D. Cardoso-Jiménez1, R. Rojo-Rubio1, A. Z. M. Salem1,2, S. Rebullar-Rebullar1, J. L. Martínez-Benítez1, and J. Hernández-Martínez1,1Centro Universitario UAEM-Temascaltepec, Universidad Autónoma del Estado de México, Toluca-Tejupilco, Estado de México, México, 2Department of Animal Production, Faculty of Agriculture (El-Shatby), Alexandria University, Alexandria, Egypt.
W215 The effects of management and environmental factors on broiler breeder performance in Iran. H. Hosain*,1, M. Moradi Shahrbabak1, A. Nosheri1, M. Zaghari2, and M. B. Zandi1, 1Tehran Azad University, Karaj Tehran Iran, 1University of Tehran, Karaj Tehran Iran, 2Young Researchers Cloob, Sanandaj Kurdistan Tehran.

W216 Effects of stocking rate of weaned to finishing pigs on bermsudgrass ground cover. S. Pietrosemoli*1, J. T. Green2, and R. Vibart3, 1Animal Science Department, North Carolina State University, Raleigh, 2Crop Science Department, North Carolina State University, Raleigh, 3AgResearch Limited, Grasslands Research Centre, New Zealand.

W217 Suckling effect on the survival of crossbred goat kids at weaning. L. F. D. Medeiros1, D. H. Vieira2, C. A. Oliveira2, D. F. Guerson1, G. M. Fagundes1, J. P. F. Silveira1, R. S. B. Pinheiro1, V. L. Tierzo1, and J. L. C. B. Reis*4, 1Rural Federal university of Rio de Janeiro, Seropedico, 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 Marilia, Marilia, SP, Brazil.

W218 The effect of Clarifly™ larvacide in purchased grains on fly populations on dairy farms in northern Vermont. E. E. Osmanski*1, R. E. Butzler2, C. S. Ballard2, and C. S. Mooney1, 1The University of Vermont, Burlington, 1William H. Miner Agricultural Research Institute, Chazy, NY.

W219 Black soldier fly larvae grown on cow manure. M. Chahine*1; M. E. de Haro Marti2, S. St Hilaire3, O. Pozo4, and R. E. Sheffield4, 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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W220 The influence of parity, sex and twinning on birth weight of Holstein calves. M. H. Fathi Nasri1 and H. Farhangfar, Department of Animal Science, The University of Birjand, Iran.

W221 Influence of altering conventional milk replacer feeding rate and protein source on pre- and post-weaning performance and health of dairy calves. D. Carlson*1, S. Hayes1, B. Ziegler2, R. Larson2, M. Raeth-Knight3, G. Golombeski1, J. Linn1, D. Ziegler4, and H. Chester-Jones2, 1Milk Products, LLC, Chilton, WI, 2Hubbard Feeds Inc., Mankato, MN, 3University of Minnesota, St. Paul, 4University of Minnesota, Southern Research and Outreach Center, Waseca.

W222 Effect of milk replacer carbohydrate source on performance and health of dairy calves. J. K. Bernard*1 and A. F. Kertz2, 1University of Georgia, Tifton, 2MZHIL LLC, St. Louis, MO.

W223 Impact of glycerol in milk replacer on dairy calf performance. M. Raeth-Knight*,1, J. Linn1, R. Larson2, and J. Salzer1, 1University of Minnesota, St. Paul, 2Hubbard Feeds, Mankato, MN.

W224 Effect of group penning on dairy calf performance. D. Carr* and A. Chestnut, Vigortone Ag Products, Hiawatha, IA.

W225 Relationship between immunoglobulin G intake and serum immunoglobulin G concentrations in calves fed titrated levels of immunoglobulin G in colostrum replacers. J. M. Campbell*1, J. C. Gawthrop2, A. W. Riad2, L. E. Russell1, S. K. Hayes1, J. D. Quigley1, and J. D. Crenshaw1, 1APC, Inc., Ankeney, IA, 2CalfCare, North Manchester, IN.

W226 Effects of protein sources in calf milk replacers on growth and fecal score of dairy calves. S. Y. Luan1, J. Q. Wang*1, D. P. Bu1, H. T. Zhang1, Z. F. Zhou1, and A. F. Kertz2, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, 2ANDIL LLC, St. Louis, MO.

W227 Effects of combining hydrolyzed wheat gluten and spray dried plasma in calf milk replacer (CMR) on calf performance. D. Wood*, J. Sowinski, and R. Blome, Animix, Juneau, WI.

W228 Hydrolyzed proteins from animal origin can replace dried skim milk from milk replacer formula. M. Terré*1, E. Borda2, F. Boe3, and A. Bach1, 1IRTA-Unitat de Remugants, Barcelona, Spain, 2Bioinerica, S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.

W229 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.

W230 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*1, A. Ferrer1, D. Martinez-Puig2, and J. Ahedo1, 1ICREA, Barcelona, Spain, 2IRTA-Ruminant Production, Caldes de Montbui, Spain, 3Bioiberica, Barcelona, Spain, 4RGA NFO Las Nieves, Mallén, Spain.


W232 Flavor effects on feed intake and performance of calves. C. Montoro*1, I. Ipharragueure2, and A. Bach1, 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. Ipharraguerre1, 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. Ziegler1, M. Raeth-Knight1, G. Golombeski1, B. Ziegler1, R. Larson1, J. Linn1, and H. Chester-Jones1, 1APC, Inc., Ankeny, IA, 2Milk Products, Chilton, WI, 3University of Minnesota Southern Research and Outreach Center, Waseca, 4University of Minnesota, St. Paul, 5Hubbard 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*, 1, S. Hayes*, 1, R. Larson1, B. Ziegler1, D. Ziegler1, M. Raeth-Knight1, G. Golombeski1, and J. Linn1, 1University of Minnesota Southern Research and Outreach Center, Waseca, 1APC, Inc., Ankeny, IA, 2Hubbard Feeds, Inc., Mankato, MN, 3University of Minnesota, St. Paul.

Performance of post weaned Holstein heifer calves fed limit or free-choice pelleted grain mixes with two differing fiber levels along with free-choice hay. D. Ziegler*, 1, R. Larson1, B. Ziegler1, M. Raeth-Knight1, G. Golombeski1, H. Chester-Jones1, and J. Linn1, 1University of Minnesota Southern Research and Outreach Center, Waseca, 1APC, Inc., Ankeny, IA, 2Hubbard Feeds, Inc., Mankato, MN, 3University of Minnesota, St. Paul.

Correlation between future production performance and hepatic gene expression in postpartum Holstein dairy heifers. J. Doelman*, N. G. Purdie, H. Cao, N. A. Karrow, and J. P. Cant, University of Guelph, Guelph, ON, Canada.


Ruminant Nutrition
Fat Supplementation

Effect of dietary lipids on selected strains of ruminal bacteria. R. B. Potu*, 1, A. AbuGhazaleh1, K. L. Jones1, R. L. Atkinson1, D. Hastings1, J. D. Haddock1, and S. Ibrahim1, 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*, E. Gnemmi2, K. Glover1, and A. Fredeen1, Dalhousie University, Halifax, NS, Canada, 2Nova Scotia Agricultural College, Truro, NS, Canada.
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.

Performance and metabolic measures of lactating dairy cows fed diets supplemented with either mostly saturated or more unsaturated fatty acids. J. K. Bernard*1 and A. F. Kertz2,1, The University of Georgia, Tifton,2 ANDHIL LLC, St. Louis, MO.

Effects of duodenal infusion of linolenic acid on nutrient digestion, milk production, and milk composition in dairy cows. Khas-Erdene1, D. P. Bu1, J. G. Wang*,1, Q. S. Liu1, L. Wang1, H. Y. Wei1, L. Y. Zhou1, and J. K. Drackley2,1, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, P. R. China, Department of Animal Sciences, University of Illinois, Urbana.

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.

Fatty acids profile of milk fat from cows with different forage and lard levels in the diet. M. A. Oliveira1, M. M. Ladeira2, I. G. Pereira3, B. N. Faria1, and R. B. Reis*,1, Veterinary School, Federal University of Minas Gerais, Brazil, Animal Science Department, Federal University of Lavras, Brazil, Animal Science Department, Federal University of Jequitinhonha and Mucuri Valley, Brazil.

Milk fatty acid composition of dairy cows fed whole flaxseed or/and Ca-salts of flaxseed oil. C. Côrtes*,1, D. C. da Silva1,2, R. Kazama1,2, N. Gagon2, C. Benchaa1, G. T. d. Santos1,2, L. M. Zeoula1,2,3, and H. V. Petit4, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, Universidade Estadual de Maringa, Parana, Brazil, CNPq, Brazil.

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.

Effect of coconut oil and lauric acid on ruminal protozoa and milk production and composition in dairy cows. A. Faciola*1 and G. Broderick2, University of Wisconsin, Madison, U. S. Dairy Forage Research Center, Madison, WI.


Assessment of whole Nutrasaff safflower seed as a fat supplement to lactating Holstein dairy cows. C. M. Dschaak*1, J.-S. Eun1, A. J. Young1, and J. W. Bergman2, Utah State University, Logan, Safflower Technologies International, Sidney, MT.

Effects of protected fat supplements on total tract digestion and plasma metabolites of early lactation Holstein cows. M. GanjkhaniLou*1, K. Reza Yazdi2, G. R. Ghorbani3, M. Dehghan Banadaky4, H. Morrave5, W. Z. Yang2, and A. Zali6, University of Tehran, Karaj-Tehran, Iran, Isfahan University of Technology, Isfahan, Iran, Lethbridge Research Centre, Lethbridge, AB, Canada.

Effect of lipids source and supplementation frequency on digestive behavior of beef heifers grazing tropical grass. M. Cristina Araújo Santana1, T. Teresinha Berchielli1, R. Andrade Reis1, A. Vaz Pires2, G. Fiorenza3, P. Henrique de Moura Dian2, J. Cesar Martinez*1, and M. Antonio Alvaes Balsalobre1, São Paulo State University, Jaboticabal,São Paulo, Brazil, São Paulo University, Piracicaba, São Paulo, Brazil, Bellman, Mirassol, São Paulo, Brazil.

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.


Ruminant Nutrition

Metabolism

Malate and fumarate enhanced CLA production and reduced methane emission by rumen microbes when incubated with linoleic acid. G. L. Jin*,1, X. Z. Li1, C. G. Yan2, R. J. Long3, and M. K. Song4, Department of Animal Science, Chungbuk National University, Cheongju, Chungbuk, Korea, Animal Science department of Agricultrue college, Yanbian University, Yanji, Jilin, China, International Centre for Tibetan Plateau Ecosystem Management, Lanzhou University, Lanzhou, Gansu, China.

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, Department of Animal Nutrition and Feed Science, College of Animal Science and Technology, Beijing, P.R. China, State key Laboratory of Animal Nutrition, Beijing Institute of Animal Science, China Academy of Agricultural Sciences, Beijing, P.R. China.

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 Mesgaran1, A. Heravi Moussavi1, A. R. Y. hez Ruiz2, and C. J. Newbold2, Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran, Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, UK, Unidad 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 cellulyolytic Ruminococcus flavefaciens, Fibrobacter succinogenes, and non-cellulyolytic Prevotella ruminicola and Prevotella bryantii: 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. Umucalılar1, N. Gulsen1, A. Hayırlı*, and M. S. Alatas1, Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey, Department 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. Gulsen1, H. D. Umucalılar1, A. Hayırlı*, and O. B. Citi2, Department of Animal Nutrition and Nutritional Disorders, Faculty of Veterinary Medicine, Selçuk University, Konya, Turkey, Department 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. Zebeli*, 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 rumen fluid and synthesis of end products. J. W. Cone* and P. M. Becker2, Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, Animal Nutrition 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. Escobar2, O. Becvar3, D. Kirovski4, and M. D. Hanigan1, 1Department 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. Sauvant2, D. R. Ouellet1, J. Vernet1, I. Ortigues-Marty1, S. Amblard1, and H. Lapierre3, Agriculture and Agri-Food Canada, Stn Lennoxville, Sherbrooke, QC, Canada, AgropolisTech INRA, Paris, France, UHR INRA Clermont-Ferrand, Theix, St-Genès Champel, France.

W281 Acute fasting-induced changes in motilin, luteinizing hormone and metabolites in goat wethers. O. Gazal1, B. Kouakou*, W. Mboko1, S. Bialka1, and J. H. Lee1, St. Cloud State University, St. Cloud, MN, Fort 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. Crompton1, S. C. Loerch1, and C. K. Reynolds2, The Ohio State University, Wooster, University of Reading, Reading, UK.

W284 Gluconeogenesis and carbon recycling in beef steers is modulated by energy-substrate supply. B. J. Bequette*, J. Sumner-Thomson1, J. A. Moorefield1, D. Hucht1, M. Niland1, and R. L. Baldwin VI, Department of Animal and Avian Sciences, University of Maryland, College Park, Bovine 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. Debus1, Y. Chilliard2, and F. Bocquier1, INRA, Montpellier, France, INRA, Theix, St-Genès-Champanelle, France.

**Ruminant Nutrition**

**Vitamins and Minerals**


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.


Total mixed ration mineral content in California dairy farms. A. R. Castillo*, N. Silva del Rio*, and N. St-Pierre*, University of California, Tulare, 2The Ohio State University, Columbus.

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**


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.


Degradation kinetics of N in rumen fluid determined with the gas production technique. J. W. Cone**, P. M. Becker*, and M. A. M. Rodrigues*, Animal Nutrition Group, Wageningen University, Wageningen, the Netherlands, 2Animal Sciences Group of WUR, Lelystad, the Netherlands, 3CECAV-UTAD, Vila Real, Portugal.

Effect of pH and nonforage fiber sources 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. Pai1, Y.-F. Zeng1, 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. Heuwieser1,2, 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-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. Teleschi1, 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 degradation 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. Teleschi1, G. A. Holub1, W. Chalupa2, and C. A. Macgregor*3, 1Texas A&M University, College Station, 2University of Pennsylvania, Kennett Square, 3Grain States Soy 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. Goetsch*, 1Ethiopia Sheep and Goat Productivity Program, Addis Ababa, Ethiopia, 2Agricultural Experiment Station, Fort Valley State University, Fort Valley, GA, 3American Institute for Goat Research, Langston University, Langston, OK.

W313 Growth performance and carcass characteristics of goat kids fed diets containing sericea lespedeza. S. Solaiman*, J. Thomas, N. Gurung, Y. Dupree, 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, L. J. Dawson1,2, R. Puchala1, G. D. Detweiler1, R. C. Merkel1,2, Z. Wang3, K. Tesfai4, T. Sahl4, C. L. Ferrell1, 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. Paulino*1, 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.


W320  Effect of shed type and supplementation on fatty acid profile in lamb tissues. M. A. Brown*, Y. S. Peng1, and J. P. Wu2, 1USDA-ARS, Grazinglands Research Laboratory, El Reno, OK, 2Gansu Agricultural University, Lanzhou, Gansu, PRC.

W321  Fatty acid profile from the longissimus muscle of grazing Merino lambs with or without winter supplementation in Northern Patagonia. L. Villar*, E. Pavan1, C. Giraudo1, and F. Santin1, 1INTA-EEA Bariloche, Bariloche, Rio Negro, Argentina, 2INTA-EEA Balcarce, Balcarce, Buenos Aires, Argentina, 3INTA-CIA Castelar, Hurlingham, Buenos Aires, Argentina.


W324  The use of glycerin in lamb and ewe diets. M. Terré1, P. Casado2, M. Salas1, and A. Bach1, 1General de Piensos de Soria S.A., Soria, Spain, 2Generalitat de Catalunya, Barcelona, Spain.

W325  Methane emission by goats consuming condensed tannin-containing forage at different frequencies. R. Puchala*, G. Animent1, L. Goetsch1, T. Sahl1, V. H. Varel2, and J. Wells1, 1American Institute for Goat Research, Langston University, Langston, OK, 2USDA, ARS, US Meat Animal Research Center, Clay Center, NE.


W327  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. Medeiros4, 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, 4Rural Federal University of Rio de Janeiro, Seropedica, RJ, Brazil, 5Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.

W328  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. Persichetti Junior1, C. Costa1, L. F. D. Medeiros4, 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, 4Rural Federal University of Rio de Janeiro, Seropedica, RJ, Brazil, 5Agricultural Municipal School Adolfo Alves Rezende, Campina Verde, MG, Brazil.

W329  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. Gonzalez, E. Valencia, and P. Randel, University of Puerto Rico, Mayaguez, PR.

W330  Effects of feeding peanut skins on growth performance and carcass traits of Kiko x 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, 3Auburn University, Auburn, AL.

W331  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.

W332  Protein requirements of Boer crossbred kids. I. A. M. A. Teixeira*, K. T. Resende1, J. M. Pereira Filho2, R. C. Canesin3, and T. T. Berchielli4, 1Universidade Estadual Paulista/Unesp, Jaboticabal, SP, Brazil, 2Universidade Federal de Campina Grande/UFCG, Patos, PB, Brazil.


W334  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.

W335  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.

W336  Blood mineral concentration of goats in semiarid rangelands of central zone in Mexico during the rainy and dry season. R. Rojo-Rubio*, A. Z. M. Salem1,2, A. Olmedo-Juárez1, A. Hernández-Rodríguez2, B. Albarrán-Portillo1, D. Lópe-Aguirre1, S. Rebollar-Rebollar1, J. F. Vázquez-Armijo3, D. Cardoso-Jiménez2, and J. Hernández-Martínez1, 1Centro Universitario UAEM, Temascaltepec. Universidad Autónoma del Estado de México, Temascaltepec, Estado de México, México, 2Department of Animal Production, Faculty of Agriculture, Alexandria University, Alexandria, Egypt.
Swine Species

W337 Anti-obesity effect of ethanol extract of seed sprouts in porcine preadipocytes. M.-Y. Lee¹, J.-J. Lee², H.-J. Lee³, and S.-H. Oh*⁴, 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.


W339 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.


W341 A survey of North American sow farm reproductive management. R. Knox*¹, T. Safranski², D. Levis³, and W. Singleton⁴, ¹University of Illinois, Urbana, ²University of Missouri, Columbia, ³University of Nebraska, Lincoln, ⁴Purdue University, West Lafayette, IN.

W342 Combined Acanthopanax senticosus extract and inulin improves growth performance, diarrhea and intestinal morphology in weaned piglets. X. Wu¹, Y. Yin², F. Yan³, X. Kong⁴, R. Huang⁵, T. Li⁶, and L. Chen⁷, ¹Laboratory of Animal Nutritional Physiology and Metabolic Process, Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China, ²Guang An Biological Technique Company, China.

W343 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.


W345 Dietary requirement of true digestible lysine for growing pigs. Y. Zhang¹,², Y. Yin¹, L. Li¹, R. Huang², and Y. Chen¹,², ¹Key Laboratory of Subtropical Agro-ecology, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, ²People’s Republic of China, ³The Graduate University of Chinese Academy of Sciences, Beijing, The People’s Republic of China.

W346 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. Dimarco, and G. Pulina, Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy.

W347 Mechanisms for transcellular transport of glucose in swine small intestine. M. Al-Rammahi*¹, A. Moran¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu¹, D. Bravo¹, and S. Shirazi-Beechey¹, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.

W348 Expression of sweet taste receptor, gustducin and carbohydrate responsive gut hormones in swine small intestine. M. Al-Rammahi*¹, A. Moran¹, D. Batchelor¹, E. Coulter¹, N. Jones¹, C. Ionescu¹, D. Bravo¹, and S. Shirazi-Beechey¹, ¹Department of Veterinary Preclinical Sciences, University of Liverpool, Liverpool, UK, ²Pancosma SA, Geneva, Switzerland.

W349 Microbiological and molecular analysis of bacterial community by probiotic mixture in wearing pig in vivo intestinal models. Y. S. Kim¹, Y. Kim¹, K. Y. Whang¹, S. H. Kim¹, 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.

W350 Administration of probiotics influences enterotoxigenic Escherichia coli F4 attachment and expression of intestinal cytokines in weaned pigs. J.-F. Daudelin*¹, M. Lessard², F. Beaudoin², N. Bissonnette², E. Nadeau², and J. M. Fairbrother¹, ¹Reference laboratory for E. coli (EcL), Université de Montréal, Saint-Hyacinthe, Quebec, Canada, ²Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Sherbrooke, Quebec, Canada.

W351 Inclusion of live yeast S. cerevisiae boulardii (CNMC I-1079) in sow lactation diets: Effects on sows and nest performances. F. Mariella¹, A. Agazzi¹, G. Invernizzi¹, G. Savoini¹,², E. Chevaux¹, and Y. Le Treut¹, ¹University of Milan Faculty of Veterinary Medicine, Milan, Italy, ²Lallemand S.A.S., Blagnac, France.

W352 Consumer preferences for U.S. pork in urban China. D. Ortega*¹, H. Wang¹, and L. Wu¹, ¹Purdue University, West Lafayette, IN, ²China Agricultural University, Beijing, R. China.

W353 Gastrointestinal morphology of pigs farrowed in indoor versus outdoor management systems and weaned into an indoor, off-site nursery. E. Davis¹, C. V. Maxwell¹, J. D. Spencer¹, R. L. Moser¹, J. Reherberger¹, and T. Rehberger¹, ²Agtech Products, Inc., Waukesha, WI, ³University of Arkansas, Fayetteville, ²IBS United, Inc., Sheridan, IN.


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
510ac


11:00 AM 505 Selection of tannins by sheep in response to gastro-intestinal nematode infections. J. J. Villalba, F. D. Provenza, J. O. Hall, and L. D. Lisonbee, Utah State University, Department of Wildland Resources, Logan, Utah State University, Department of Animal, Dairy and Veterinary Sciences, Logan.

11:15 AM 506 Feed volatile compounds affect lambs and ewes palatability. T. Rapisarda, A. Mereu, A. Cannas, S. Carpino*, and G. Licitra, CoRFiLaC, Regione Siciliana, Ragusa, Italy, Dipartimento di Scienze Zootecniche, University of Sassari, Italy, Agris Sardegna, DRPA, Olmedo, Italy, D.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. Leslie, G. J. Mason, B. W. McBride, and T. J. DeVries, Department of Animal and Poultry Science, University of Guelph, Kemptville Campus, Kemptville, ON, Canada, Department of Population Medicine, Ontario Veterinary College, Guelph, ON, Canada, Department 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
511ad

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

Breeding and Genetics
Beef Cattle & Sheep Breeding
Chair: Janice M. Rumph, Michigan State University
513ef

10:30 AM 515 Genotype by region and season interactions for postweaning gain in beef cattle. J. L. Williams*, M. Lukaszewicz1, I. Misztal1, and J. K. Bertrand1, 1University of Georgia, Athens, 2Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Jastrzebiec, Poland.

10:45 AM 516 Estimation of genetic parameters for mature weight in Angus cattle. R. B. Costa*, I. Misztal1, J. K. Bertrand1, and S. Northcut2, 1University of Georgia, Athens, 2American Angus Association, St. Joseph, MO.

11:00 AM 220 Identification of single nucleotide polymorphisms influencing feed efficiency and performance in multi-breed beef cattle using a candidate gene approach. M. K. Abo-Ismail*, I. Misztal1, K. C. Swanson1, J. D. Nkrumah2, and S. P. Miller1, 1University of Guelph, Guelph, ON, Canada, 2Igenity Livestock Production Business Unit, Merial Ltd., Duluth, GA.


12:00 PM 520 Wool quality and growth traits of Tasmanian pasture-fed crossbred lambs and relationships with plasma metabolites. A. E. O. Malau-Aduli*, C. F. Ranson, and C. W. Bignell, University of Tasmania, Hobart, Tasmania 7001, Australia.

12:15 PM 521 Bayesian estimation of genetic parameters for body weight traits and litter size of Moghani sheep using Gibbs sampling. N. Ghavi Hossein-Zadeh*, 1University of Tehran, Karaj, Iran, 2University of Guilan, Rasht, Iran.

Dairy Foods
Dairy Foods/Microbiology
Chair: James Steele, University of Wisconsin
513cd

10:30 AM 522 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.

10:45 AM 523 Physiological and transcriptional response of Lactobacillus casei ATCC 334 to acid stress. R. Thompson*, V. Deibel1, J. Steele2, J. Broadbent2, 1Utah State University, Logan, 2University of Wisconsin, Madison, 3TracMicro, Madison, WI.

11:00 AM 64 Growth of Lactobacillus casei at 8°C in Cheddar cheese extract requires supplementation. W. S. Tan*, M. F. Budinich1, R. Ward1, J. R. Broadbent2, and J. L. Steele1, 1University of Wisconsin, Madison, 2Utah State University, Logan.

11:15 AM 525 CpG oligodeoxynucleotide from Streptococcus thermophilus regulates anti-inflammatory responses. T. Shimosato*, M. Tohno1, T. Sato1, and H. Kitazawa1, 1Shinshu University, Kamiina, Nagano, Japan, 2Tohoku University, Sendai, Miyagi, Japan, 3Yokohama City University, Yokohama, Kanagawa, Japan.
Survival of probiotic adjunct cultures added to low-fat, reduced-fat, and full fat cheddar cheese. C. J. Oberg*1, L. Moyes*1, C. Brodersen*, and D. J. McMahan*1, 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*, S. C. Ingham2, J. L. Steele2, and J. R. Broadbent2, 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*, and H. Yi1, 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 azidol (liquid or tablet) and bronopol. M. O. Leite*, N. J. Andrade*, 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

10:30 AM 530 A diagnostic tool to assess calf welfare and management on-farm. E. Vasseur*, J. Rushen2, A. M. de Passillé2, D. Lefebvre3, 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-Hyacinthe, Quebec, Canada.

10:45 AM 531 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.

11:00 AM 532 On-line access to the Cattle Producer’s Library for disseminating beef cattle educational information. J. C. Whittier*, J. W. Oltjen*, J. A. Paterson1, D. R. Zobell*, and Western Beef Resource Committee*, 1Colorado State University, Fort Collins, 2University of California, Davis, 3Montana State University, Bozeman, 4Utah State University, Logan, 5WBRC, 12 Western USA States.

11:15 AM 533 Using audience response software in equine extension programs. K. Martinson*, University of Minnesota, St. Paul.

11:30 AM 534 Partnering with outside entities to broaden extension’s reach: Theory, practice, challenges, impacts, and impact. E. A. Greene*, R. E. Greene2, and R. L. Parsons1, 1University of Vermont, Burlington, 2Kleine Lelli Consulting, Wayland.

11:45 AM 535 Maximizing reach via providing the internet while using information dissemination in traditional extension environments. E. A. Greene*, A. S. Griffin*, K. P. Anderson*, and C. D. Skelly*, 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

10:30 AM 536 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.


11:00 AM 538 Metabolic maturity at birth and neonate 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. Blache*, and J. R. Roche*, 1Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia, 2University of Western Australia, Perth, WA, Australia.

11:15 AM 539 Metabolic maturity at birth and neonate 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. Blache*, R. B. Jackson1, E. Downie1, J. R. Roche*, 1Tasmanian Institute of Agricultural Research, Mt Pleasant, TAS, Australia, 2University of Western Australia, Perth, WA, Australia.
11:30 AM 540 Maternal over-nutrition induces inflammatory response in large intestine of fetal sheep in late gestation. X. Yan1, M. Du1, B. W. Hess1, S. P. Ford1, P. W. Nathanielsz2,3, and M. J. Zhu1, 1University of Wyoming, Laramie, 2University of Texas Health Science Center, San Antonio.

11:45 AM 541 An in vivo comparison of muscles formed from broiler and layer chick somites. P. E. Mozdzia3*, D. Hodgson, and J. N. Petitte, Department of Poultry Science, North Carolina State University, Raleigh.

**SYMPOSIUM**

**International Animal Agriculture**

**ASAS-EAAP Global Issues**

**Chair:** Melvin Yokoyama, Michigan State University

**Sponsors:** ASAS, AMPA, and EAAP

510bd

10:30 AM Introduction: The impact of dynamic economic and environmental changes on livestock sectors in developing countries. M. Yokoyama.


11:00 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 Pecuarioas, Mexico City, D.F., Mexico.

11:10 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, 1Lacasse, Saskatoon, SK, Canada; 2United States Department of Agriculture, Fort Collins, CO.

**Lactation Biology 2**

**Chair:** Darryl Hadsell, Baylor College of Medicine

512ae

10:30 AM 546 Prolactin, insulin and cortisone regulate expression of GLUT8 gene in bovine mammary explants. K. Zhao*, H. Y. Liu, and J. X. Liu, Institute of Dairy Science, Ministry of Education Key Laboratory of Molecular Animal Nutrition, Zhejiang University, Hangzhou, P. R. China.

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 Effects of unilateral frequent milking of dairy heifers during early lactation. J. B. Wright*, E. H. Wall, and T. B. McFadden, University of Vermont, Burlington.


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.


12:00 PM 552 Fluoxetine and phenelzine disrupt tight junctions in primary bovine mammary epithelial cells. L. L. Hernandez*1, R. J. Collier2, and N. D. Horseman1, 1University of Cincinnati, Cincinnati, OH, 2University of Arizona, Tucson.

Nonruminant Nutrition
Minerals and Vitamins
Chair: Gretchen Hill, Michigan State University
518

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 glycines in aqueous solution by electrospray QqTOF mass spectrometry. S. Oguey*1, V. Vacchina2, R. Lobinski3, and D. Bravo1, 1Panicosma, Geneva, Switzerland, 2UT2A, Pau, France, 3CNRS, Pau, France.

11:00 AM  556  Analysis of Zn, Mn, Cu and Fe glycines by size-exclusion liquid chromatography coupled to an inductively coupled plasma mass spectrometry detection. S. Oguey*1, V. Vacchina2, R. Lobinski3, and D. Bravo1, 1Panicosma, 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. Hoffman, 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*1, S. Carter1, M. Lachmann1, J. Bundy1, and B. De Rodas2, 1University of Wisconsin, Madison, 2Land O’Lakes Purina Feed, Gray Summit, MO.


SYMPOSIUM
Physiology and Endocrinology
Impact of Gonadal Steroids on Brain Development and Function
Chair: Fredrick Stormshak, Oregon State University
524

10:30 AM
Introduction. Fredrick Stormshak.

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*1, 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*12, 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
519


10:45 AM  54  The effect of two calving seasons on cow and calf performance in western Canada. L. C. Girardin*1, H. A. Lardner1, A. D. Iwaasa1, S. L. Scott1, and S. H. Hendrick1, 1University of Saskatchewan, Saskatoon, Saskatchewan, Canada, 2Western Beef Development Centre, Lomigon, 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.
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<th>Time</th>
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<tr>
<td>11:00 AM</td>
<td>565</td>
<td>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.</td>
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<td>11:15 AM</td>
<td>566</td>
<td>Modeling cow body shape for objective estimation of body condition score from digital images. G. Azzaro1, M. Caccamo1, J. D. Ferguson1, S. Battiato1, G. M. Farinella1, G. C. Guarnera1, G. Puglisi1, and G. Licitra1,2, CoRFLaC, Regione Siciliana, Ragusa, Italy, University of Pennsylvania, Kennett Square, IPLAB, University of Catania, Italy, D.A.C.P.A., University of Catania, Italy.</td>
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<td>11:30 AM</td>
<td>567</td>
<td>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.</td>
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**Ruminant Nutrition**

**Dairy Calves**

Chair: JoAnne Knapp, Fox Hollow Consulting, LLC

Sponsor: Intervet/Schering-Plough Animal Health

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<td>11:45 AM</td>
<td>576</td>
<td>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.</td>
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**Ruminant Nutrition**

**Rumen Microbiology**

Chair: Cathy Bandyk, Quality Liquid Feeds

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10:05 AM 578  

11:00 AM 579  
Effect of supplemental carbohydrate source and level on in vitro gas production estimates. A. Britos*, 1 N. Pomies, J. L. Repetto, and C. Cajarville. 1 Department of Animal Nutrition, Faculty of Veterinary, UdelaR, Montevideo, Uruguay, 2 Department of Bovines, Faculty of Veterinary, UdelaR, Montevideo, Uruguay.

11:15 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.

11:30 AM 580  
Differential chemotaxis by entodiniomorphids and isotrichids toward glucose after incubation with emulsified polyunsaturated fatty acids. H. L. Diaz*, A. M. Stalford, K. N. Barr, and J. L. Firkins. The Ohio State University, Department of Animal Sciences, Columbus.

11:45 AM 581  
From Redox potential field measurement to its bioenergetic meaning in the rumen. J. P. Marden*, 1,2 E. Ungerfeld, R. A. Kohn, C. Julien, E. Auclair, R. Moncoulon, and C. Bayourthe. 1 Université de Toulouse, INRA, Castanet-Tolosan, France, 2 Lesaffre Feed Additives, Marquette-Lez-Lille, France, 3 Agriculture and Agri-Food Canada, Lethbridge, Canada, 4 University of Maryland, College Park.

Ruminant Nutrition 2  
Chair: Cathy Bandyk, Quality Liquid Feeds  
514

10:30 AM 582  
Pharmacological amounts of nicotinic acid can reduce isoproterenol-stimulated lipolysis in cattle, but also reduce feed intake. K. S. Spivey, E. C. Tigitmeyery*, and B. J. Bradford. Kansas State University, Manhattan.

10:45 AM 583  

11:00 AM 584  

11:15 AM 585  

11:30 AM 586  
Effects of extended zilpaterol hydrochloride withdrawal on performance, carcass traits, and shear-force value of steaks from finishing heifers. G. L. Parsons*, 1 B. E. Depenbusch, 1 C. D. Reinhardt, 2 D. A. Yates, 3 J. P. Hutcheson, 3 and J. S. Drouillard. 1 Kansas State University, Manhattan, 2 Intervet Schering-Plough, Desoto, KS.

11:45 AM 587  
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.

12:00 PM 588  
Feeding behaviour of wethers fed a temperate pasture with different time of access to food and supplemented with or without additives. A. Pérez-Ruchel*, 1 J. L. Repetto*, 3 M. Michelini, 1 L. Pérez, 2 G. Soldini, 1 and C. Cajarville. 1 Departamento de Nutrición Animal, Facultad de Veterinaria, Montevideo, Uruguay, 2 Departamento de Bovinos, Facultad de Veterinaria, Montevideo, Uruguay.

12:15 PM 61  
Impact of feed waste on the nutrition and economics of wintering beef cows. B. J. Yaremcio*, 1 E. K. Okine, M. Oba, and D. McCartney. 1 Alberta Agriculture and Rural Development, Canada, 2 University of Alberta, Canada, 3 Agriculture and Agri-Food Canada, Canada.

Small Ruminant Nutrition  
Chair: Ken Andries, Kentucky State University  
513ab

10:30 AM 589  

10:45 AM 590  
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, and K.-H. Südekum*. 1 Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh, India, 2 University of Bonn, Bonn, Germany.
11:00 AM 591 Performance of lambs fed ensiled orange pulp treated with exogenous enzymes. H. Gado*, A. Z. M. Salem²,⁴, H. Alsersy¹, B. E. Borhami³, and M. El-Adawy², 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.


11:30 AM 593 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.


12:00 PM 595 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. Erasmus¹, 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&M University, College Station.

12:15 PM 596 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.

OTHER EVENTS
Mixed Models
520ad
10:30 AM–12:30 PM

SYMPOSIA 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

2:00 PM Introduction. Karen Plaut (Michigan State University) and Tony Capuco (USDA).

2:05 PM 597 The dairy scientist’s role in re-connecting the dairy food-chain. K. Murphy*, Food-Chain Communications, Lee’s Summit, MO.


3:25 PM Break

3:40 PM 599 Accelerating genetic improvement with SNP chips and DNA sequencing. C. P. Van Tassell*, P. M. VanRaden¹, G. R. Wiggins¹, L. K. Matukumalli¹,², S. Schroeder¹, J. O’Connell¹,², R. D. Schnabel³, J. F. Taylor⁴, E. J. Pollak⁵, M. Munson⁶, D. Bailey⁴, 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.

4:20 PM 600 Affects of climate change and environmental regulation on management of dairy farms. W. Powers* and D. Meyer², ¹Michigan State University, East Lansing, ²University of California, Davis.
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<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Institutions</th>
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<tr>
<td>2:15 PM</td>
<td>602</td>
<td>Assessment of the health status of newborn dairy replacement and</td>
<td>K. Waalderbos*, K. Leslie, T. Duffield, T. DeVries, and B. McBride</td>
<td>Department of Population Medicine, University of Guelph, Guelph, Ontario, Canada, Department of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada.</td>
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<tr>
<td>2:45 PM</td>
<td>604</td>
<td>Factors affecting performance of pre-weaned dairy calves under</td>
<td>M. Razzaque*, T. Al-Mutawa, S. Abbas, and M. Bedair, Aridland Agriculture and Greenery Department, Kuwait Institute for Scientific Research, Kuwait, Safat, Kuwait.</td>
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<td>3:00 PM</td>
<td>605</td>
<td>Associations between herd risk of high precalving NEFA and</td>
<td>T. F. Duffield*, M. Carson, M. Capel, S. Godden, M. Overton, J. Santos, and S. J. LeBlanc</td>
<td>University of Guelph, Guelph, ON, Canada, University of Minnesota, Minneapolis, University of Georgia, Athens, University of Florida, Gainesville, Perry Veterinary Clinic, Perry, NY.</td>
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<tr>
<td>3:15 PM</td>
<td>606</td>
<td>Associations between herd risk of high precalving NEFA and dietary</td>
<td>T. F. Duffield*, M. Carson, M. Capel, S. Godden, M. Overton, J. Santos, and S. J. LeBlanc</td>
<td>University of Guelph, Guelph, ON, Canada, University of Minnesota, Minneapolis, University of Georgia, Athens, University of Florida, Gainesville, Perry Veterinary Clinic, Perry, NY.</td>
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<td>4:00 PM</td>
<td>609</td>
<td>Transcriptome analysis of muscle tissue from calves infected with</td>
<td>R. L. Mills*, L. Carlos-Valdez, L. O. Burciaga-Robles, D. Stein, D. L. Step, R. W. Fulton,</td>
<td>Oklahoma State University, Stillwater.</td>
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<td>4:30 PM</td>
<td>611</td>
<td>Evaluation of enzymatically hydrolyzed yeast in vitro and in</td>
<td>S. Jalukar* and J. Nocek, Varied Industries Corporation, Mason City, IA, Spruce Haven Farm and Research Center, Auburn, NY.</td>
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<tr>
<td>5:15 PM</td>
<td>613</td>
<td>mRNA expression of genes regulating oxidative phosphorylation in</td>
<td>A. K. Kelly*, S. M. Waters, M. McGee, C. Carberry, D. H. Crews Jr, T. M. Boland, and D. A. Kenny, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, Animal Bioscience Centre, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, Colorado State University, Fort Collins.</td>
<td>Beef Species Health, Efficiency and Beef Quality Chair: Ryon Walker, University of Minnesota</td>
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</table>

* These authors are designated as presenters at the event.
**2:15 PM 614**  Relationship between metabolic hormones, metabolites and energetic efficiency in growing beef heifers. A. K. Kelly*, M. McGee*, D. H. Crews Jr., T. M. Boland, and D. A. Kenny, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, Colorado 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*, M. McGee, T. M. Boland, D. H. Crews Jr., and D. A. Kenny, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland, Colorado State University, Fort Collins.

**3:00 PM 617**  The immune response of heifers divergently ranked for residual feed intake. A. G. Fahey*, B. Earley, A. K. Kelly, M. McGee, and D. A. Kenny, School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland.

**3:15 PM 618**  Rubber mats improve finishing beef cattle welfare. M. R. Elmore*, M. F. Elischer, M. C. Claey, 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.

**4:15 PM 621**  Comparison of fatty acid profiles of longissimus muscle from Angus and Charolais finishing steers. A. K. Lunsford*, J. W. Dillwith, C. R. Krehbiel, 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. Battacone, R. Boe', M. G. Manca, M. Mele, A. Serra, and G. Pulina, Dipartimento di Scienze Zootecniche, University of Sassari, Italy, Dipartimento di Agronomia e Gestione dell'Agricola, University of Pisa, Italy, Agricultural Research Agency of Sardinia - AGRIS Sardegna, Sassari, Italy.

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**Breeding and Genetics**

**Breeding and Genetics Workshop**

**Chair: Ron Lewis, Virginia Tech**

**512ae**

**2:00 PM 624**  Recent developments in genetic evaluation tools. D. Garrick*, Iowa State University, Ames.


**4:00 PM**  Discussion/Q & A

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**Breeding and Genetics**

**Molecular Genetics II**

**Chair: Cathy Ernst, Michigan State University**

**510bd**

**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.

2:30 PM 627 Whole genome candidate gene approaches to identifying gene SNP markers influencing fat deposition and carcass merit in beef cattle. C. Li*1,2, M. Vinsky1, R. Creeds1, E. Okine2, S. S. Moore2, and D. H. Crews Jr.1,2, 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.


3:00 PM 629 Reproductive responses of dairy cows to supplemental fat. J. D. Ferguson1, D. W. Remsburg*1, E. Block1, and Z. Wu2, 1University of Pennsylvania, New Bolton Center, Kennett Square, 2Arm and Hammer Animal Nutrition Group, Church & Dwight Co. Inc., Princeton, NJ.


3:30 PM 631 Effects of high-sulfur water on growth performance and gene expression of steers fed forage-based diets. K. L. Kessler*, K. C. Olson1, C. L. Wright2, K. J. Austin1, K. McNinnerney1, P. S. Johnson2, and K. M. Cammack1, 1University of Wyoming, Laramie, 2South Dakota State University, Brookings, 3University of Montana, Bozeman.

3:45 PM 632 Development and independent validation of SNP markers comprising the IGENITY® profile for feed intake and efficiency in indicus-influenced beef cattle. B. W. Woodward*1, J. D. Nkrumah1, P. A. Lancaster1, G. E. Carstens1, and D. J. Johnston3, 1Merial Limited, Duluth, GA, 2Texas A&M University, College Station, 3University of New England, Armidale, NSW, Australia.

4:00 PM 633 Impacts of contemporary group differences in dietary DM and ME on genomic association studies and validation of DNA marker profiles. J. D. Nkrumah*1 and J. A. Basarab2, 1Merial Ltd., Duluth GA, 2Alberto Agriculture and Food, Lacombe, AB, Canada.

4:15 PM 634 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.


4:45 PM 636 Analysis of quantitative trait loci affecting female fertility and twinning rate in Israeli Holsteins on chromosome 7. J. I. Weller*1, G. Glick1, M. Golik1, E. Ezra2, Y. Zeron3, E. Seroussi2, and M. Ron1, 1ARO, The Volcani Center, Bet Dagan, Israel, 2Israle Cattle Breeders Association, Caesarea, Israel, 3Sion, Shikmim, Israel.

5:00 PM 222 Seasonal based genetic regulation of reproductive traits in a male turkey line. L. A. Case, University of Guelph.

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**SYMPOSIUM**

**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**

2:00 PM Opening remarks. Stephanie Clark (Washington State Univ.) and Kerry Kaylegian (Pennsylvania State Univ.).

2:05 PM 637 Effects of cattle production practices on environmental quality. F. M. Mitloehner*, University of California, Davis.


3:05 PM 640 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

**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*, 1X. 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 microbes to mitigate pathogens and enhance production in cattle. T. A. McAllister*, K. A. Beauchemin1, J. Baah1, R. M. Teather2, and K. Stanford2, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Alberta 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

**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
513cd

2:00 PM 653 Indigenous enzymes in mammalian milk: Scientific, technological and physiological significance. A. Kelly*, University College Cork, Cork, Ireland.


3:00 PM 655 Proteolytic enzymes associated with somatic cell count and their relevance in raw milk and dairy products. L. B. Larsen*, Institute of Food Science, Faculty of Agricultural Sciences, Aarhus University, Denmark.

3:30 PM 656 Lipases and lipolysis in milk and dairy products. H. C. Deeth*, School of Land, Crop and Food Sciences, University of Queensland, Brisbane, Queensland, Australia.

4:00 PM 657 Native proteases in milk: Current knowledge and relevance to dairy industry. B. Ismail*1 and S. Nielsen2, 1University of Minnesota, St. Paul, 2Purdue University, West Lafayette, IN.

SYMPOSIUM
Extension Education
Models for Dairy Production Decision Making
Chair: Tamilee Nennich, Purdue University
511be

2:00 PM Introduction. Tamilee Nennich.

2:05 PM 658 To keep or cull a cow: An economic decision. A. De Vries*, University of Florida, Gainesville.

2:35 PM 659 Modeling the economic impact of reproductive change. M. W. Overton*, University of Georgia, Athens.

3:05 PM 660 Modeling nutrition decisions. M. D. Hanigan*, Virginia Polytechnic Institute and State University, Blacksburg.

3:35 PM 661 A large Markovian linear program model for dairy herd decision-making. V. E. Cabrera*, University of Wisconsin, Madison.

4:05 PM 662 Impact of disease on dairy production decisions. D. Galligan*, University of Pennsylvania, Kennett Square.

4:35 PM Discussion

Forages and Pastures
Harvested Forages, Ensiling and Forage Utilization
Chair: Marie Krause, West Virginia University
510ac


2:15 PM 664 Amaferm level and form on digestibility of forage differing in quality. J. Nocek*1 and H. Jensen2, 1Spruce Haven Research Center, Auburn, NY, 2Biozyme Inc, St Joseph, MO.

2:30 PM 665 The ability of enterococci to survive the ensiling process. S. N. Masiello* and C. S. Petersson-Wolfe, Virginia Polytechnic Institute and State University, Blacksburg.

2:45 PM 666 Expression of genes related to cell wall digestibility of tropical forages. S. S. Stabile1, L. Jank1, A. P. Bodini1, N. S. Oliveira1, L. V. Março1, and L. F. P. Silva*1, 1Universidade de São Paulo, Pirassununga, SP, Brazil, 2EMBRAPA, Campo Grande, MS, Brazil.

3:00 PM 667 Effect of citrate synthase genes transformed into alfalfa on aluminum tolerance of its cells. F. Fan*, J. J. Li, Y. M. Wu, and J. X. Liu, Zhejiang University, Hangzhou, P. R. China.
3:15 PM 668 A survey of condensed tannin concentrations in vegetative and mature legume forages in western Canada. N. Berard1, K. Ominsinski*, K. Wittenberg2, D. Krause1, T. McAllister2, and Y. Wang3, 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. Fleener1, S. L. Lake1, and L. J. Unruh-Snyder1, 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. Obi2, P. E. Juskiw3, 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.


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*, C. Vasquez2, A. Saraiva3, 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*, C. Vasquez3, 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 López2, A. Pedroche Quevedo3, and T. Steiner*, 1Biomim Holding GmbH, Herzogenburg, Lower Austria, Austria, 2Agropecuaria ALFA S.A., Cundinamarca, Colombia, 3NUTRECO S.A., Bogotá, Colombia.

2:45 PM 676 Selection of probiotic strains for combined competitive exclusion treatment in piglets. V. Klose*, K. Bayer1, R Bruckbeck1, V. A. Sattler1, A. P. Loibner1, C. Mair2, and G. Schatzmayr1, 1BOKU-University, Vienna, Department IFA-Tulln, A-3430 Tulln, Austria, 2BOKU-University, Vienna, Department of Food Sciences and Technology, A-1180 Vienna, Austria, 3BIOMIN Research Center, A-3430 Tulln, 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*, The 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*, M. J. Estienne1, J. B. Meldrum2, R. J. Harrell3, and D. E. Diaz4, 1Virginia Polytechnic Institute and State University, Blacksburg, 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 diet containing 20% corn dried distiller’s grains. J. A. Jendza*, A. Owusu-Asiedu2, 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*, W. R. Lamberson1, D. R. Ledoux2, R. R. Cockrum1, K. L. Kessler1, K. J. Austin3, and K. M. Cammack1, 1University of Missouri, Columbia.


Physiology and Endocrinology  
Livestock Physiology  
Chair: Rhonda C. Vann, Mississippi State University  
513ab

2:00 PM  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*, J. C. Breqe, R. Gervais, C. Lessard, D. Venne, M. R. LeFrancois, P. Y. Chouinard, G. Vandenbergh, and J. L. Bailey. Centre de recherche en biologie de la reproduction, Qc, Canada, Département des sciences animales, Université Laval, Québec, QC, Canada, Couvoir Scott Ltee, Scott Junction, QC, Canada.


2:30 PM  686  Use of infrared thermal imaging of the muzzle as a measure of body temperature in sheep and cattle. R. W. Godfrey*, R. C. Ketting, S. S. Robinson, and S. T. Willard. University of the Virgin Islands, Agricultural Experiment Station, St Croix, VI, Mississippi State University, Department of Animal and Dairy Sciences and Department of Biochemistry and Molecular Biology, Mississippi State.


3:15 PM  689  Impact of long-term genetic selection for age at puberty on postpartum reproductive physiology in cows. G. A. Bridges*, N. C. Ames, M. C. Berg, M. J. D'Occhio, and M. L. Day. Purdue University, West Lafayette, IN, AgResearch, Ruakura Research Centre, Hamilton, New Zealand, The University of Queensland, Brisbane, Australia, The Ohio State University, Columbus.

3:30 PM  Break


4:00 PM  692  Association between seasonality, cleavage timing and gene expression in bovine oocytes. Z. Roth* and M. Gendelman. Faculty of Agriculture, The Hebrew University of Jerusalem, Israel.


4:30 PM  694  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.

Physiology and Endocrinology  
Metabolic Physiology  
Chair: Rhonda C. Vann, Mississippi State University  
514

2:00 PM  695  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.

2:15 PM  696  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.

Residual feed intake and heat production of Holstein cows throughout lactation. A. Brosh*, A. Asher1, J. Miron2, A. Shabtay1, G. Adin1, U. Moollem3, Y. Aharoni1, and A. Arieli4. 1Agricultural Research Organization, Bet-Dagan, Israel, 2Hebrew University of Jerusalem, Faculty of Agricultural, Rehovot, Israel.

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.


Overfeeding energy prepartum dramatically affects peripartal expression of mRNA transcripts in subcutaneous adipose tissue explants in vitro. A. Hosseini*, H. Sauerwein, and M. Mielenz, University of Bonn, Germany.


The acute phase response: Differentiating corticotrophin-releasing hormone (CRH)- versus lipopolysaccharide (LPS)-induced proinflammatory cytokine and acute phase protein profiles in beef calves. J. A. Carroll*, L. E. Hultbet1, N. C. Burdick2,3, L. C. Caldwell2,3, M. A. Ballou4, J. D. Arthington5, R. C. Vann5, A. N. Loyd2,3, and R. D. Randel3,1. 1Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, 2Texas AgriLife Research, Texas A&M System, College Station, 3Texas AgriLife Research Center, Texas A&M System, Overton, 4Department of Animal and Food Sciences, Texas Tech University, Lubbock, 5University of Florida - IFAS, Range Cattle Research and Education Center, Ona, 6MAFES, 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*1 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*1, 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. Ghorbani3, H. R. Rahmani2, and R. M. Bruckmaier*1. 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, Germany.

Effect of grain type and processing method on rumen fermentation and milk rumenic acid production. R. Mohammed*, J. J. Kennelly2, J. K. G. Kramer2, K. A. Beauchemin1, C. S. Stanton4, and J. J. Murphy5. 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. Janovick*, J. J. Loor1, P. Ji1, R. E. Everts3, H. A. Lewin1,2, S. L. Rodriguez-Zas1, and J. K. Drackley1. 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. Tiltgomeyer, and B. J. Bradford, Kansas State University, Manhattan.
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<th>Time</th>
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<tr>
<td>3:30 PM</td>
<td>712</td>
<td>Effects of feeding increasing levels of wet corn gluten feed on digestibility, rumen pH, and VFA concentrations of lactating Holstein cows. C. R. Mullins*1, L. K. Mamedova1, K. N. Grigsby2, and B. J. Bradford1, 1Kansas State University, Manhattan, 2Cargill Inc., Blair, NE.</td>
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<tr>
<td>3:45 PM</td>
<td>713</td>
<td>Effects of wet corn gluten feed inclusion rates on productivity of lactating Holstein cows. C. R. Mullins*1, K. N. Grigsby2, and B. J. Bradford1, 1Kansas State University, Manhattan, 2Cargill Inc., Blair, NE.</td>
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<td>4:00 PM</td>
<td>714</td>
<td>Response of lactating dairy cows to high protein distillers grains or three other protein supplements. K. A. Christen*1, D. J. Schingoethe2, K. F. Kalscheur1, A. R. Hippen1, K. Karges2, and M. L. Gibson2, 1South Dakota State University, Brookings, 2Dakota Gold Research Association, Sioux Falls, SD.</td>
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<tr>
<td>4:30 PM</td>
<td>716</td>
<td>Effects of forage type on nitrogen utilization in dairy cows consuming diets high in wet distillers grains with solubles. A. M. Gehman* and P. J. Kononoff, University of Nebraska, Lincoln.</td>
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</table>

**Ruminant Nutrition**

**Minerals**

Chair: Allen Young, Utah State University

516ab

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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</thead>
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<tr>
<td>2:00 PM</td>
<td>719</td>
<td>ADSA Pioneer: Thirty-eight years of vitamin D and calcium research: From dairy cows to humans. R. L. Horst*, Heartland Assays, Inc., Ames, IA.</td>
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<tr>
<td>2:30 PM</td>
<td>720</td>
<td>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. Tremblay1, 1University of Alberta, Edmonton, AB, Canada, 1Agriculture and Agri-Food Canada, Quebec, QC, Canada.</td>
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<tr>
<td>2:45 PM</td>
<td>721</td>
<td>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 Carolina State University, Raleigh, 1Colorado State University, Fort Collins.</td>
<td></td>
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<tr>
<td>3:00 PM</td>
<td>722</td>
<td>Strategic use of naturally selenium-rich milling coproducts to manage selenium deficiency. J. B. Taylor*, USDA, Agricultural Research Service, Dubois, ID.</td>
<td></td>
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<tr>
<td>3:15 PM</td>
<td>723</td>
<td>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. Taylor1, L. P. Reynolds1, D. A. Redmer1, K. A. Vonnahme1, and J. S. Caton1, 1North Dakota State University, Fargo, 2USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID.</td>
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<tr>
<td>3:30 PM</td>
<td>724</td>
<td>Mineral balances in California dairy farms. A. R. Castillo*1, N. St-Pierre2, and N. Silva del Rio1, 1University of California, Cooperative Extension, Merced, 2The Ohio State University, Columbus.</td>
<td></td>
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<tr>
<td>3:45 PM</td>
<td>725</td>
<td>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. Richards1, C. A. Atwell1, T. D. Wineman1, and T. R. Overton1, 1Cornell University, Ithaca, NY, 2Novus International, St. Charles, MO.</td>
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<tr>
<td>4:00 PM</td>
<td>726</td>
<td>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.</td>
<td></td>
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<tr>
<td>4:15 PM</td>
<td>727</td>
<td>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. Kluth1, 1Zinpro Corporation, Eden Prairie, MN, 2Standard Dairy Consultants, Omaha, NE.</td>
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<tr>
<td>4:30 PM</td>
<td>728</td>
<td>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.</td>
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173

OTHER EVENTS
Mixed Models
520ad
2:00 PM–5:00 PM

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.

9:00 AM 730 Effect of distance moved during loading, lairage time, and distance moved to stun on blood lactate concentration of pigs in a commercial slaughter plant. L. N. Edwards*1, T. Grandin1, T. E. Engle2, M. J. Ritter2, A. Sosnicki3, B. A. Carlson1, and D. B. Anderson1, 1Colorado State University, Fort Collins, 2Elanco Animal Health, Greenfield, IN, 3PIC, Hendersonville, TN.

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*1, H. Gonyou2, R. Bergeron2, S. Torrey3, T. Crowe4, T. Widowski5, J. P. Laforest5, C. Dewey4, N. Lewis4, and L. Faucitano5, 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*1, N. J. Cook2, and H. W. Gonyou1, 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*1, S. Hayne2, R. Bergeron3, L. Faucitano4, T. Widowski5, N. Lewis5, T. Crowe6, C. Dewey7, and H. Gonyou8, 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.

10:15 AM 734 The motivation of gestating sows for environmental enrichment in a stall. M. R. Elmore*1, J. P. Garner2, A. K. Johnson2, R. D. Kirkden2, E. G. Patterson-Kane1, B. T. Richert1, and E. A. Pajor1, 1Purdue University, West Lafayette, IN, 2Iowa State University, Ames.


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*1, J. P. Garner1, J. N. Marchant-Forde2,3, and E. A. Pajor4, 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.*1 and J. P. Garner2, 1Agricultural Research Service - USDA, West Lafayette, IN, 2Purdue University, West Lafayette, IN.
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. Cassell1, K. M. Olson2, A. J. McAllister3, and S. P. Washburn1.1University of Illinois, Urbana, 2Virginia Polytechnic Institute and State University, Blacksburg, 3University 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.


10:30 AM  745  Preliminary analysis of NRF-Holstein crossbred cattle in Israel. E. Ezra1, Y. Zeron1, and J. I. Weller*, 1Israel Cattle Breeders Association, Caesaria, Israel, 3Sion, Shikmim, Israel, 1ARO, The Volcani Center, Bet Dagan, Israel.

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. Bloe, B. G. Cassell, L. B. Hansen, A. J. Seykora, D. G. Johnson, and J. G. Linn, University of Minnesota, Saint Paul.


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.


9:30 AM  751  Impact of bleaching on the flavor of whey protein concentrate. A. E. Croissant*, J. Kang1, R. E. Campbell1, E. Bastian2, and M. A. Drake1, 1North Carolina State University, Raleigh, 2Glanbia Nutritional, Twin Falls, ID.

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.

10:30 AM 755  Dairy food intake among historically African American college campus students. A. M. Patterson* and S. A. Ibrahim, North Carolina A&T State University, Greensboro.

<table>
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<tr>
<th>Time</th>
<th>Session</th>
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</table>
| 8:30 AM  | 756     | Effect of fall grazing system on annual ryegrass quality and beef cattle performance. J. M. Kelzer*, S. Bird, R. D. Mathison, P. R. Peterson, and R. S. Walker, 1University of Minnesota, St. Paul, 2University of Minnesota, Grand Rapids, 3University of Minnesota, Andover.
| 10:00 AM | 762     | 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.
| 10:30 AM | 764     | Sequence grazing of perennial and annual cool-season grasses to extend the grazing season for stocker calves. B. K. Northup, W. A. Phillips*, and A. A. Hopkins, 1USDA-ARS Grazinglands Research Laboratory, El Reno, OK, 2Noble Foundation Inc., Ardmore, OK.
| 10:45 AM | 765     | Comparison of fescues versus orchardgrass—Forage characteristics and stocker performance. M. H. Ramos*, J. W. Lehmkhuhler, and K. A. Albrecht, 1University of Missouri, Columbia, 2University of Kentucky, Lexington, 3University of Wisconsin, Madison.
| 11:00 AM | 766     | Use of N fertilization versus interseeded legume—Forage characteristics and stockers performance. M. H. Ramos*, J. W. Lehmkhuhler, and K. A. Albrecht, 1University of Missouri, Columbia, 2University of Kentucky, Lexington, 3University of Wisconsin, Madison.
The use of a handheld glucometer for measuring glucose concentration.


Fatty acid synthesis in equine adipose and liver tissue explants. J. K. Suagee*, R. A. Cori1, M. V. Crisman2, J. G. Wearn1, L. J. McCutcheon1, and R. J. Geor3, Virginia Polytechnic Institute and State University, Blacksburg, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, Michigan State University, East Lansing.

Effects of the insulin sensitizing drug, pioglitazone, on genes regulating glucose and fat metabolism in horses. J. K. Suagee*, R. J. Geor3, L. J. McCutcheon1, J. G. Wearn1, M. V. Crisman2, B. A. Cori1, and M. W. Hulver2, Virginia Polytechnic Institute and State University, Blacksburg, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, Michigan State University, East Lansing.

The use of a handheld glucometer for measuring glucose concentrations from whole blood collected from the horse. C. D. Gunkel*, J. S. Drouillard, and T. L. Slough, Kansas State University, Manhattan.

The effect of consuming endophyte-infected tall fescue on lameness in the horse. K. C. Gradert*, J. M. Bormann1, S. F. DeWitt1, L. W. Lomas1, J. M. Kouba1, and T. L. Slough1, Kansas State University, Manhattan, Woodside Equine Research Center, Parsons, KS.

The use of thermal imaging to monitor temperature in the hoof of horses consuming endophyte-infected tall fescue. K. C. Gradert*, J. M. Bormann1, S. F. DeWitt1, L. W. Lomas1, J. M. Kouba1, and T. L. Slough1, Kansas State University, Manhattan, Woodside Equine Clinic, Ashland, VA, Southeast Agricultural Research Center, Parsons, KS.

Nonruminant Nutrition
Chair: Charles Starkey, DSM Nutritional Products
Fats and Oils


Apparent and 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.

The impact of dried distillers grains with solubles withdrawal programs on swine carcass fatty acid profiles and bacon quality. J. Stevens, A. Schinckel, B. Richert, and M. Latour*, Purdue University, West Lafayette, IN.


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.

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 Borne1, E. M. A. M. Bruininx1, E. van Heugten2, J. van Milgen2, and W. J. J. Gerrits*1, Wageningen University, Wageningen, the Netherlands, North Carolina State University, Raleigh, INRA, UMR1079, Systèmes d’Élevage, Nutrition Animale et Humaine, St Gilles, France.

### Production, Management and the Environment

**Beef**

**Chair: Joe Dalton, University of Idaho**

**513ab**

<table>
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<th>Title</th>
<th>Authors</th>
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<tr>
<td>8:30 AM</td>
<td>782</td>
<td>An evaluation of residual feed intake estimates obtained with computer models versus empirical regression.</td>
<td>C. B. Williams*, C. L. Ferrell, and T. G. Jenkins, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.</td>
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<tr>
<td>8:45 AM</td>
<td>783</td>
<td>Influence of feed management on random herd curves from random regression test-day model.</td>
<td>M. Caccamo*, R. F. Veerkamp², J. D. Ferguson¹, R. Petriglieri¹, F. La Terra¹, and G. Licitra¹,²,³,⁴,⁵ CoRiLaC, Regione Siciliana, Ragusa, Italy,²Animal Breeding and Genomics Centre, ASG, WageningenUR, Lelystad, The Netherlands,³University of Pennsylvania, Kennett Square,⁴D.A.C.P.A. University of Catania, Italy.</td>
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<tr>
<td>9:00 AM</td>
<td>784</td>
<td>Effects of programmed growth on yearling Brangus and Angus heifers. ¹</td>
<td>R. Austin, M. J. Hersom*, and J. V. Yelich, University of Florida, Gainesville.</td>
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<td>9:30 AM</td>
<td>786</td>
<td>Predicting the success of fixed-time AI from passive monitoring of body temperature in beef heifers. ²</td>
<td>J. A. Small*, A. D. Kennedy², L. M. Pfeifer³, and J. Singh¹, Agriculture and Agri-Food Canada, Brandon, MB, Canada,¹University of Manitoba, Winnipeg, MB, Canada,²University of Saskatchewan, Saskatoon, SK, Canada,³Nova Scotia Agricultural College, Truro, NS, Canada.</td>
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<td>9:45 AM</td>
<td>787</td>
<td>Does fertility-associated antigen on sperm collected from Nellore (Bos indicus) bulls affect fertility at first-service timed AI?</td>
<td>J. C. Dalton*, L. Deragon², J. L. M. Vasconcelos³, and A. Ahmadzadeh⁴, University of Iowa, Caldwell,²Alta Genetics Brazil, Uberaba, MG, Brazil,³FMVZ-UNESP, Botucatu, SP, Brazil,⁴University of Idaho, Moscow.</td>
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<td>10:00 AM</td>
<td>788</td>
<td>Mastitis in beef bulls caused by Arcanobacterium pyogenes.</td>
<td>S. C. Nickerson*, E. Rollin², D. T. Enslvy², and R. D. Berghaus¹, University of Georgia, College of Agricultural and Environmental Sciences, Department of Animal and Dairy Science, Athens,¹University of Georgia, College of Veterinary Medicine, Department of Population Health, Athens.</td>
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### Ruminant Nutrition

**Dairy 3**

**Chair: Allen Young, Utah State University**

**511cf**

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<tr>
<td>8:30 AM</td>
<td>789</td>
<td>Short-term changes in forage dry matter affect milk production responses in dairy cows.</td>
<td>D. R. Mertens*,¹ and P. Berzaghi²,¹US Dairy Forage Research Center, Madison, WI,²University of Padua, Italy.</td>
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<tr>
<td>8:45 AM</td>
<td>790</td>
<td>Meta-analysis of influence of dietary NDF on energy partitioning in dairy cows.</td>
<td>D. Sauvant*,¹, O. Martin*, and D. Mertens*,¹Agroparistech-INRA, Paris, France,¹US Dairy Forage Center, Madison, WI.</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>791</td>
<td>Effect of feeding low-starch, low-forage diets to mid-lactation dairy cows on lactational performance and ruminal characteristics.</td>
<td>E. R. Myers*,¹, H. M. Dann², K. W. Cotanch³, C. S. Mooney³, R. J. Grant³, A. L. Lock¹, and K. Yagi⁴,¹University of Vermont, Burlington,²William H. Miner Agricultural Research Institute, Chazy, NY,³ZEN-NOH National Federation of Agriculture Co-Operative Associations, Tokyo, Japan.</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>793</td>
<td>Determining fiber requirements in dairy cows by modeling digestive responses to dietary physically effective NDF.</td>
<td>Q. Zebelli*¹,², D. Mansmann¹,², H. Steingass¹, W. Drochner², and B. N. Amentaj¹,¹University of Alberta, Edmonton, AB, Canada,²University of Hohenheim, Stuttgart, Germany.</td>
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<td>9:45 AM</td>
<td>794</td>
<td>Nutritional value of bahiagrass, bahiagrass-alfalfa, or brown mid rib sorghum baleage for lactating Holstein cows.</td>
<td>M. E. McCormick*, V. R. Moreira¹, D. C. Blouin², and K. J. Han³,¹Louisiana State University Agricultural Center, Southeast Research Station, Franklin,²Louisiana State University Department of Experimental Statistics, Baton Rouge.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>795</td>
<td>Diurnal patterns of rumen pH and function in dairy cows on high quality temperate pastures of the South Island of New Zealand.</td>
<td>J. Gibbs* and J. Laporte, Lincoln University, Canterbury, New Zealand.</td>
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<tr>
<td>10:15 AM</td>
<td>796</td>
<td>Effect of pre-grazing herbage mass and daily herbage allowance on rumen, plasma and milk fatty acids.</td>
<td>R. A. Palladino¹, M. O’Donovan², J. J. Murphy², M. McEvoy¹,², and D. A. Kenny*,¹University College Dublin, Belfield, Dublin, Ireland,²Teagasc, Fermoy, Co. Cork, Ireland.</td>
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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. Kaufmann1, A. Münger1, M. Rérat1, P. Junghans2, S. Görs2, C. C. Metges3, and F. Dohme*4, 1Agriscope Liebefeld-Posieux, Research Station ALP, Postieux, 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, University 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, School 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. Hill1, J. K. Bernard1, T. Jenkins2, and B. G. Mullinix3, 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 Ortn* and P. Yu, University 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*, Department 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*1, P. J. Van Soest2, and G. Licitra13, 1CoRFiLaC, Regione Siciliana, Ragusa, Italy, 2Cornell University, Ithaca, NY, 3D.A.C.P.A. University of Catania, Italy.


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*1, R. Fievisohn1, K. W. Cotanch1, R. J. Grant1, L. E. Chase1, and M. E. Van Amburgh1, 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-Ruchel1, A. Britos1, E. Almanza1, J. L. Repetto2, N. Pomiés1, and C. Cajarville*1, 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*1, K. Glover1, R. Teather2, S. Iverson3, and A. Fredeen1, 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, North 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

8:30 AM  Introduction
8:35 AM  809  Research and extension needs in air and water quality. D. J. Meisinger*, US Pork Center of Excellence, Ames, IA.
8:50 AM  810  Occupational and environmental concerns in swine production. K. Donham*, University of Iowa, Iowa City.
9:30 AM  811  The potential ability of swine nutrition to influence environmental factors positively. S. T. Petersen*, Land O’Lakes Purina Feed LLC, Shoreview, MN.
10:10 AM  Break
10:25 AM  812  Potential of anaerobic digestion to address current environmental concerns on swine operations. D. I. Massé*, Agriculture and Agri-Food Canada, Sherbrooke, Québec, Canada.
11:05 AM  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.

OTHER EVENTS
Mixed Models
512ae
8:30 AM–11:30 AM

Writers’ Workshop
525
8:30 AM–5:00 PM
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>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>
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<tr>
<td>513cd</td>
<td>Small Ruminant Symposium: Organic and Grass-Fed Small Ruminant Challenges and Opportunities</td>
<td>Dairy Foods: Oral Session 1</td>
<td>(5:00–6:00 pm) USDA-ARS Staff Update Session</td>
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<tr>
<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>515ab</td>
<td>Pre-Load</td>
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<td>Speaker Ready</td>
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<tr>
<td>516ab</td>
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<td>Ruminant Nutrition 1</td>
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<td>Beef Species Symposium: Population Data Analyses to Evaluate Trends in Animal Production Systems</td>
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<tr>
<td>516c</td>
<td></td>
<td>Ruminant Nutrition: Fat Supplementation</td>
<td>Ruminant Nutrition: Feed Additives</td>
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<tr>
<td>517a</td>
<td></td>
<td>CSAS Symposium: Nutrition - Behavior Interactions in Ruminants</td>
<td>Ruminant Nutrition Symposium: Using Molecular Techniques to Advance Research in Ruminant Nutrition</td>
<td>(7:00 pm) ADSA Awards Program</td>
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<td>517b</td>
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<td>Growth and Development Symposium: Fetal Programming in Animal Agriculture</td>
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<td>518</td>
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<td>Nonruminant Nutrition: Amino Acids and Energy</td>
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<td></td>
<td>Physiology and Endocrinology: Estrous Synchronization of Beef Cattle</td>
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<tr>
<td>520ad</td>
<td>(8:30–9:30 am) ADSA-Student Business Meeting–Elec. of Officers/(9:30–11:00 am) ADSA-SAD Student Career Roundtable</td>
<td></td>
<td>(2:30–3:30 pm) ADSA-SAD Committee Meeting – Old and New Officers and Advisors</td>
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<tr>
<td>520be</td>
<td>(2:00–3:00 pm) ADSA-SAD Award and Club Photos/(3:00–5:00 pm) ADSA Award Photos</td>
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<td>(5:00–7:00 pm) ADSA Award Photos</td>
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<td>520c</td>
<td>(11:45 am–2:00 pm)</td>
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<td>(3:00–5:00 pm) ADSA Award Donor Dinner Setup</td>
<td>(5:00–6:30 pm) ADSA Award Donor Dinner</td>
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<td>520f</td>
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<td>ADSA-SAD Awards Luncheon</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>525a</td>
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<td>(10:30 am–12:30 pm) ARPAS Exam</td>
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<td>NE ASAS/ADSA Business Meeting &amp; Awards Luncheon</td>
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<tr>
<td>Exhibit Hall 220cde</td>
<td>Poster presentations</td>
<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>
<td>Breeding and Genetics: Molecular Genetics II</td>
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<tr>
<td>511ad</td>
<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>
<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>511be</td>
<td>Extension Education</td>
<td>Extension Education Symposium: Models for Dairy Production Decision Making</td>
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<td>511cf</td>
<td>Growth and Development: Fetal Development</td>
<td>Animal Health: Calf Health, Respiratory Disease, etc.</td>
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<tr>
<td>512ae</td>
<td>Lactation Biology</td>
<td>Breeding &amp; Genetics Workshop</td>
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<td>512bd</td>
<td>ASAS Business Meeting</td>
<td>Growth and Development: Fetal Development</td>
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<td>513ab</td>
<td>Small Ruminant: Nutrition</td>
<td>Physiology and Endocrinology: Livestock Physiology</td>
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<tr>
<td>513cd</td>
<td>(10:00–10:30 am) ADSA Business Meeting</td>
<td>Dairy Foods Symposium: Challenges and Opportunities of Microencapsulation Technology in Application to Dairy Foods</td>
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<tr>
<td>513ef</td>
<td>Breeding and Genetics: Beef Cattle &amp; Sheep Breeding</td>
<td>Physiology and Endocrinology: Metabolic Physiology</td>
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<td>514</td>
<td>Ruminant Nutrition 2</td>
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<td>516ab</td>
<td>Ruminant Nutrition: Dairy Calves</td>
<td>Ruminant Nutrition: Minerals</td>
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<td>Ruminant Nutrition: Dairy 2</td>
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<td>Nonruminant Nutrition: Minerals and Vitamins</td>
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<td>519</td>
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<td>Nonruminant Nutrition: Minerals and Vitamins</td>
<td>Production, Management and the Environment: General</td>
<td>Beef Species: Health, Efficiency and Beef Quality</td>
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<tr>
<td>520ad</td>
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<td>(10:30 am–5:00 pm)</td>
<td>Mixed Models Workshop</td>
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<td>522</td>
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<td>(11:30 am–12:30 pm)</td>
<td>ADSA-ASAS Joint Executive Committee Meeting</td>
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<td>Physiology and Endocrinology Symposium: Impact of Gonadal Steroids on Brain Development and Function</td>
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Wednesday, July 15
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<thead>
<tr>
<th>Room</th>
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<tr>
<td>510ac</td>
<td>Swine Species Symposium: Environmental Concerns Based on Swine Production</td>
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<tr>
<td>510bd</td>
<td>Breeding and Genetics: Dairy Breeding IV - Crossbreeding</td>
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<tr>
<td>511ad</td>
<td>Animal Behavior and Well-Being 2</td>
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<tr>
<td>511be</td>
<td>Ruminant Nutrition Research Methods</td>
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<td>511cf</td>
<td>Ruminant Nutrition: Dairy 3</td>
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<tr>
<td>512ae</td>
<td>Mixed Models</td>
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<tr>
<td>513ab</td>
<td>Production, Management and the Environment: Beef</td>
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<td>513cd</td>
<td>Dairy Foods: Dairy Foods Processing/Enzymes</td>
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<td>513ef</td>
<td>Horse Species</td>
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<td>514</td>
<td>Forages and Pastures: Grazing and Pasture Utilization</td>
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<td>515ab</td>
<td>Pre-Load</td>
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<td>515c</td>
<td>Speaker Ready</td>
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<tr>
<td>516ab</td>
<td>Nonruminant Nutrition: Fats and Oils</td>
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<tr>
<td>521a</td>
<td>Hospitality Room</td>
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<tr>
<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