Experience the Evolution....
Classic Ultrasound for the Digital Practice

New
17cm ASP Probe

Digital Simplicity

19900 Mona Road, #105 • Tequesta, Florida 33469
(800) 722-6838 • (561) 746-9527 • info@classicmed.com
www.classicmedical.com
Welcome to the Joint Meeting of ADSA™-ASAS

Dave Barbano
ADSA President

David Buchanan
ASAS President

We’re pleased you’ve joined us in Minneapolis to see old friends and make new ones and to exchange information with other scientists, as we provide the very best in professional networking and educational opportunities for dairy and animal science. This joint meeting is also a special year, as ADSA celebrates its Centennial.

We have an outstanding program this year that has something for everyone, including pre-meeting symposia, the Triennial Reproduction Symposium, “Dairy Foods: Advances in Cultured Foods,” and “Disease Risk Management Tools for Beef and Dairy Producer: Train the Trainer.” The Opening Session will highlight the 100 years of ADSA as well as the dairy industry.

Several activities are planned for the Centennial Celebration:

• Opening Session will focus on the history of ADSA and the dairy science industry and will feature some ADSA Pioneers as well as some young leaders of ADSA
• 18 ADSA Pioneers will open 18 oral scientific sessions with presentations
• Universities, companies, and dairy clubs will display posters sharing their organization’s history of dairy
• A coffee table book recounting the history of ADSA and the dairy industry will be available for purchase
• A history of ADSA and the dairy industry will be presented on a DVD during the Opening Session, and will also be available to meeting attendees for purchase.

In an attempt to continue to make the meeting “attendee friendly,” the structure of the meeting will follow the 2005 schedule: poster presentations from 7:30 to 9:30 am on Monday, Tuesday, and Wednesday mornings. Scientific sessions will be from 9:30 am to 12:30 pm on Monday and Tuesday, 10:30 am to 12:30 pm on Wednesday, 2:00 to 5:00 pm each afternoon, and 8:30 am to 12:30 pm on Thursday. The lunch break will be from 12:30 to 2:00 pm We hope you will find this schedule works well with your overall meeting goals.

The award ceremonies are certain to be on the list of highlights again this year. We have again staggered the ceremonies. The ASAS ceremony will be held on Monday, July 10, and the ADSA ceremony will be held on Tuesday, July 11, to allow you to attend one or both. An old-fashioned ice cream social with birthday cake, open to all attendees, will be held Tuesday night after the ADSA award ceremony. Be sure to join us.

We invite all meeting attendees and their families to attend the Closing/International Reception on Wednesday, July 12.

The agenda for this year’s meeting is a testament to the program organizers who have invested enormous amounts of time and effort to bring distinguished scientists in animal agriculture and animal food products from around the world to one place. In addition to several invited speakers, this program includes 30 symposia and almost 1,500 presentations. Many thanks to the ADSA-ASAS program committees and staff of ADSA, ASAS, and FASS for their hard work. Our program committee, Rick Grant (Chair), Jim Oltjen, and Maurice Eastridge, along with FASS staff members, Jennifer Gavel, Carri Tharp, Keely Roy, Louise Audrieth, Ted Veatch, and Kevin Wolter (to name just a few), did a fantastic job. Special thanks go out to the Executive Directors of ASAS and ADSA Meghan Wulster-Radcliffe, Paula Schultz, Peter Studney, and Brenda Carlson prior to her retirement, for keeping everything headed in the right direction.

Thank you for participating in the ADSA-ASAS joint meeting and for making it a success.
Table of Contents

Welcome Letter ................................................................. 1
General Meeting Information ............................................. 3
Headquarter Hotels .......................................................... 4
Transportation ................................................................. 7
Special Events ............................................................... 8
Award Donors ................................................................. 11
Minneapolis Information ................................................... 12
Exhibit Floor Plan ........................................................... 15
Exhibit Directory ............................................................. 17
Corporate Sustaining Members ............................................ 31
Schedule of Events .......................................................... 32
ADSA SAD Schedule of Events .......................................... 37
Downtown Minneapolis Housing Map .................................. 38
Convention Center and Hotel Maps ...................................... 40
Meeting Sponsors ............................................................ 44
Scientific Program Table of Contents .................................. 45
Scientific Sessions ........................................................... 53
Author Index ................................................................. 154
Program at a Glance ......................................................... 172


IMPORTANT MESSAGE

In the event that protestors interrupt your meetings, please ignore them. Their goal is to attract attention. Any attention you give them will only help them. Please ignore them and continue your regular business. Convention staff has a plan in place to handle these situations, and they depend on your cooperation. If the media approaches you for an interview, please politely refuse and direct them to the registration desk where spokespersons are available.

Thank you for your cooperation.

Survey of Meeting Attendees

The 2006 program committee has provided meeting attendees the opportunity to help improve future joint meetings. A meeting survey will be available on line during the meeting. Please take advantage of the Cyber Café in the exhibit hall to log on and complete the survey. We appreciate your feedback!

Strategic Planning Member Survey

ASAS is in the process of creating a new strategic plan; as part of acquiring data for the strategic plan we are asking as many people as possible to complete the ASAS Membership Survey. The survey is open to both ASAS members and nonmembers. The survey can be completed at dedicated computers identified by signs near the registration desk, in the pre-load room, and in the Cyber Café. Each person that completes the survey will receive a free gift. Please take a few minutes to contribute to the drafting of the new ASAS strategic plan.
General Meeting Information

Location

The Minneapolis Convention Center is located in the heart of downtown Minneapolis, connected to all major hotels, shopping, and restaurants by an enclosed skywalk. Minneapolis offers participants a compact downtown with first-class hotels, major retail stores and a variety of dining and nightlife options all within easy walking distance of the Minneapolis Convention Center. Meeting rooms will be equipped for electronic presentations and pre-loaded sessions. The Cyber Café will be available for attendees to keep up-to-date while at the meeting.

Schedule of Events

The meeting will kick off Sunday evening with the opening session and reception and then continue with 3 ½ days of scientific sessions ending on Thursday at noon. The complete schedule of events may be found on page 32 of this program or online at http://adsa.asas.org/2006.

Program Format for 2006

<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>

Registration Hours

Registration will be located on the Mezzanine Level of the Minneapolis Convention Center. Registration hours for the 2006 Joint Annual Meeting will be as follows:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday, July 8</td>
<td>12:00 pm - 5:00 pm</td>
</tr>
<tr>
<td>Sunday, July 9</td>
<td>7:00 am - 7:00 pm</td>
</tr>
<tr>
<td>Monday, July 10</td>
<td>6:30 am - 4:00 pm</td>
</tr>
<tr>
<td>Tuesday, July 11</td>
<td>7:00 am - 3:30 pm</td>
</tr>
<tr>
<td>Wednesday, July 12</td>
<td>7:00 am - 3:00 pm</td>
</tr>
<tr>
<td>Thursday, July 13</td>
<td>8:00 am - 10:00 am</td>
</tr>
</tbody>
</table>
**Headquarter Hotels**

*Hyatt Regency Minneapolis - ASAS HQ*
1300 Nicollet Mall  
Minneapolis, MN 55403  
Phone: (612) 370-1234; Fax: (612) 370-1463

*Hilton Minneapolis - ADSA HQ*
1001 Marquette Avenue  
Minneapolis, MN 55403  
Phone: (612) 376-1000; Fax: (612) 397-4871

*Doubletree Guest Suites Minneapolis - Student HQ*
1101 LaSalle Avenue  
Minneapolis, MN 55403  
Phone: (612) 332-6800; Fax (612) 332-8246

**Official Meeting Hotels**

*Millennium Hotel Minneapolis*
1313 Nicollet Mall  
Minneapolis, MN 55403  
Phone: (612) 332-6000; Fax: (612) 359-2164

*Best Western Normandy Inn*
405 S. 8th Street  
Minneapolis, MN 55404  
Phone: (612) 370-1400

*Embassy Suites Hotel*
425 S. 7th Street  
Minneapolis, MN 55415  
Phone: (612) 333-3111

**Important Phone Numbers**

- Registration Desk .............................................. (612) 335-6663
- Hilton Minneapolis ............................................. (612) 376-1000
- Hyatt Regency Minneapolis ................................. (612) 370-1234
- Millennium Minneapolis ................................. (612) 332-6000
- Doubletree Guest Suites Minneapolis ................. (612) 332-6800
- Minneapolis Convention Center .................. (612) 335-6800
- Minneapolis Convention and Visitors Association ............................................. (612) 767-8000
- Weather, Time, and Temperature .................. (763) 512-1111

**Meeting Information**

**Media Check-in**

Please check in at the Registration Desk on the Mezzanine Level of the Minneapolis Convention Center.

**Speaker Ready Room**

The Speaker Ready Room is located in Room M101 B on the Mezzanine Level of the Minneapolis Convention Center. This room will be available for speakers from 7:00 am to 5:00 pm on each day of the meeting.

**Business Center**

For your convenience, FedEx Kinko’s is located on the main level of the Minneapolis Convention Center directly behind the information booth. The store is open Monday through Friday from 7:00 am until 6:00 pm.
**Hospitality Lounge**

The hospitality lounge will be located in room M101 A. This lounge will offer attendees an area to relax, network and catch up with old friends. The hospitality lounge is a great place to plan to meet when you are looking for one central location for a group to leave from.

**Notice to all Oral Presenters and Invited Speakers**

Please note that all session rooms will be equipped with a computer and LCD projector. All oral presentations and invited speaker presentations will be pre-loaded prior to the meeting.

**Poster Presentations**

We have dedicated a two-hour block each morning to poster presentations. The “open posters” will be from 7:30 am to 9:30 am Monday, Tuesday, and Wednesday in the Convention Center, Exhibit Hall A. Oral sessions will begin at 9:30 am on Monday and Tuesday, 10:30 am on Wednesday, and 8:30 am on Thursday.

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 am to 9:30 am). All posters should be mounted on the board one-half hour prior to the beginning of the day’s session (posters open at 7:30 am so posters should be mounted on the board by 7:00 am). The exhibit hall will open daily at 6:15 am from Monday, July 10 through Wednesday, July 12. Posters must be removed by 5:30 pm each day. Any posters remaining after 5:30 pm will be removed by the convention center staff and discarded.

The poster board surface 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**

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

**Convention Center, Exhibit Hall A**

As part of ADSA’s Centennial Celebration, Departments of Dairy Science, Animal Science, and Food Science; government institutions in the US and Canada; Dairy Clubs; and ADSA Sustaining Members will have posters on display during the meeting. These posters will showcase the history, accomplishments, and contributions from their institution or organization from the past 100 years.

The Centennial Posters will be on display from Monday, July 10, through Wednesday, July 12. A reception will be held on Monday, July 10, from 4:00 to 5:00 pm near the Centennial Posters in the Exhibit Hall.

### ARPAS Continuing Education Units

The ADSA-ASAS Joint Annual Meeting has been approved for up to 28 continuing education units (CEUs) for the American Registry of Professional Animal Scientists certification requirements. Check the schedule of events for times and location of the ARPAS exams.

### AAUSB Registry of Approved Continuing Education (RACE)

The American Association of Veterinary State Board has approved the ADSA-ASAS Joint Annual Meetings for continuing education credits for veterinarians and veterinary technicians. Thirty-seven total contact hours of continuing education credits are available with the potential for a veterinarian or a technician to earn a maximum total of 17 credits. Symposia eligibility and associated credits for the symposia are listed with the individual symposia descriptions.

### Placement Center

The Placement Center is located in Exhibit Hall A. The job announcements and resumes will be organized into the following categories for posting and distribution: Animal Behavior & Well-Being, Animal Health, Animal Breeding, Companion Animals, Extension, Food Safety, Food Science, Forages & Pastures, Genetics, Growth & Development, International Animal Agriculture, Lactation, Meat Science & Muscle Biology, Non-ruminant Nutrition, Nutrition, Pharmacology & Toxicology, Physiology & Endocrinology, Production & Management, Ruminant Nutrition, and Teaching.

### Cyber Café

Keep in touch with work, family and friends during the ADSA-ASAS Joint Annual Meeting at the Cyber Café. Located in the exhibit hall on the lower level of the Minneapolis Convention Center, the Cyber Café is available to all meeting attendees.

Wireless internet access is available in the main lobby of the Minneapolis Convention Center. The cost for access is $5.95 for one hour and $15.95 for 24 hours.
TRANSPORTATION

SuperShuttle

SuperShuttle of Minneapolis/St. Paul, Inc. provides an opportunity to save money and time when you arrive in Minneapolis. SuperShuttle service provides convenient, reliable, and economical transportation between the airport and all major hotels with departures from the airport every 30 minutes and departing from major hotels every 30 minutes. The cost is $15.00 one-way or $26.00 for a round trip. No reservation is needed. A staffed desk is located on the right side of the Ground Transportation Center, one level below baggage claim in the Minneapolis St. Paul Airport.

If you are in need of accessible service, please make a reservation by calling 1-800-BLUEVAN.

Taxi Cabs

Several taxi companies serve the Minneapolis/St. Paul International Airport and all points throughout the Twin Cities. The one-way fare from the airport to downtown Minneapolis is approximately $25.00 and should take 15 - 20 minutes. Taxicabs can be hailed from the lobby of your hotel.

Light Rail Transit

The Hiawatha Light Rail Transit System offers transportation to 17 different stops between the Mall of America, the Minneapolis/St. Paul Airport, and downtown Minneapolis. The trains run approximately every ten minutes, and the fare is $1.75 during rush hour and $1.25 at all other times. Visit the Metro Transit’s website at http://www.metrotransit.org/rail.

BIG LEAGUE

Go ahead – swing for the fences. With SoyPLUS® on your team, you have the power to break records. It’s the bypass protein solution that’s also a big hit in digestibility. With more protein available for absorption, your dairy herd will get more of the benefits. Plus, it’s got all the bases covered with its high-energy oil source and a healthy, all-natural formula. SoyPLUS…reaching new milestones in milk production.

MAKE HISTORY

Your own records can be broken today.
Contact West Central at 800.843.4769 or www.soyplus.com.
SoyPlus®SoyChlor, dairy nutrition products of West Central.
Special Events

Opening Session
Sunday, July 9
7:00 p.m. to 8:30 p.m.
Convention Center, Auditorium

ADSA Centennial - Reflecting Back to Envision the Future
The 2006 Opening Session is not only the start of the Joint Meeting but is also the kick-off for ADSA's Centennial celebration. The Opening Session will feature ADSA members reflecting on the first 100 years of ADSA and the current opportunities for ADSA as it moves forward. Speakers will address the rich heritage of ADSA with a look at the advancements in production and processing of milk.

7:00 - Welcome to the Centennial - Dr. David Barbano, ADSA President
    Reflecting Back to Envision the Future - Dr. Ken McGuffey
    The World of Dairy Science
    Reflecting Back - Dr. John Campbell and Dr. Robert Marshall
    Favorite ADSA Memories - Dr. Robert Sellars and Dr. Ken McGuffey
    Envisioning the Future - Ms. Rebekah Blades, Dr. Robert Collier, and Dr. Bruce German

8:15 - Announcements and Closing Remarks - Dr. David Buchanan, ASAS President

Opening Reception
Sunday, July 9
8:00 pm - 10:00 pm
Convention Center, Ballroom A

End the evening by joining us in the ballroom foyer after the Opening Session to socialize with colleagues and friends.

ADSA Town Hall Meeting
Monday, July 10
5:00 pm - 6:00 pm
Convention Center, Room 101 H-I

The ADSA Board of Directors invites attendees to a Town Hall Meeting on Monday, July 10, from 5:00 pm to 6:00 pm in the Convention Center, Room 101 H-I. The Town Hall Meeting provides an opportunity for attendees/members to express concerns and praises for the Association. The ADSA Board also seeks members' vision of ADSA's future needs and directions. This is an informal event, and all registrants interested in ADSA are welcome.

ASAS Awards Program
Monday, July 10
7:00 pm - 8:30 pm
Hyatt Regency, Nicollet Ballroom

All meeting participants, families, and friends are welcome to attend the 2006 ASAS Awards Program. Please join us at this special event to congratulate the 2006 ASAS award winners at the Hyatt Regency on Monday, July 10.
Dance Party with the Johnny Holm Band  
Monday, July 10  
8:30 pm - 12:30 am  
Hilton Minneapolis, Salons DEFG  
Ticket Price: $5.00

Rock the night away with old and new friends and the Johnny Holm Band. One of the most requested bands in the upper Midwest, the Johnny Holm Band dedicates each show to the fans, and they do most of the entertaining. There’s never a dull moment when this band hits the stage and rocks, picks, and thunders along non-stop from the first song to the last laugh. Cash bar, free soda bar, and free snacks will be available. This event is open to all meeting attendees, including students, advisors, and anyone else looking for a fun evening. *Sponsored by the University of Minnesota Gopher Dairy Club, ADSA, and ASAS.*

5K Fun Run  
Tuesday, July 11  
6:15 am  
Loring Park, Meet at the Minneapolis Convention Center

Join in the fun on Tuesday, July 11, at 6:15 am. Enjoy beautiful Loring Park in downtown Minneapolis while running this 5-kilometer course. T-shirts and refreshments will be provided and medals will be awarded.

Feedstuffs Seminar  
Tuesday, July 11  
8:00 am - 9:00 am  
Hilton Minneapolis

Radio broadcaster and Feedstuffs columnist Trent Loos will talk about the threats facing animal agriculture today and provide insight on what can be done to bridge the growing gap between food producers and consumers.

ASAS Northeast Section and ADSA Northeast Branch Business Meeting and Awards Luncheon  
Tuesday, July 11  
12:30 pm - 2:00 pm  
Convention Center, 200J  
Pre-registration is required

The ASAS Northeast Section and ADSA Northeast Branch will hold their annual Business Meeting and Awards Luncheon on Tuesday, July 11. Members are invited to attend and catch up with other members of the section. This is a good time to honor the NE award winners and the Graduate Student Competition Winners.

Spouses’ Event  
Tuesday, July 11  
2:00 pm - 3:30 pm  
Brit’s Pub  
Pre-registration is required and is limited to 40 attendees

Join us at Brit’s pub on Tuesday, July 11, for an authentic English high tea. A selection of tea sandwiches, fresh fruit, imported English cheeses; fresh baked buttermilk and blueberry scones; Devonshire cream, marmalade; and a variety of teatime sweets will be served.
Meeting attendees are invited to join the editor-in-chief of JAS and journal staff from HQ for an open forum on the journal. The association encourages you to bring forward questions, concerns, and praises to this informal event. We hope to see you there!

**ADSA Awards Program**  
**Tuesday, July 11**  
**7:00 pm - 8:00 pm**  
**Hilton Minneapolis, Salon EFG**

All meeting participants, families, and friends are welcome to attend the 2006 ADSA Awards Program. Please join us at this special event in congratulating all of our award winners on Tuesday, July 11, at the Hilton.

**2006 ADSA-ASAS Ice Cream Social**  
**Tuesday, July 11**  
**8:15 pm - 9:30 pm**  
**Hilton Minneapolis, Salon D**

The ADSA-ASAS Ice Cream Social will be held on Tuesday, July 11, from 8:15 pm to 9:30 pm at the Hilton. All meeting participants, families, friends, and award donors are invited to join us for the joint Ice Cream Social.

**ADSA Foundation Auction & Raffle**  
**Tuesday, July 11**  
**8:15 pm - 9:30 pm**  
**Hilton Minneapolis, Salons DEFG**

This year, the ADSA Foundation Auction and Raffle will honor the American Dairy Science Association™ in its Centennial year by encouraging donors to give auction items that relate to the history of the organization and to the dairy industry. More than 50 items have already been donated, including a handmade quilt commemorating ADSA’s 100th anniversary by quilt artist Elaine Baumgardt, an Indy 500 Race Weekend; dairying books dating back to the early 20th century including a 1917 Henry & Morrison book on Feeds and Feeding; a hand-carved cow, DeLaval milk separator collectibles, an assortment of fine prints and paintings, milk and cream bottles, a Hoard’s Creamery butter container, and much more. To donate an item or view the latest list of items, visit the auction web site at [http://www.adsa.org/foundation%20auction%202006/Auction_Items.htm](http://www.adsa.org/foundation%20auction%202006/Auction_Items.htm).

**Michigan State University Reception**  
**Tuesday, July 11, 2006**  
**8:00 pm - 10:00 pm**  
**Hilton Minneapolis, Duluth Room**

Michigan State University invites you to their “100 Years of Animal Science” reception on Tuesday, July 11, 2006, from 8:00 pm until 10:00 pm at the Hilton. All meeting participants, families, and friends are welcome to attend. Don’t miss this opportunity to catch up with old friends and make some new acquaintances. The evening promises to be one to remember.

**Closing/International Reception**  
**Wednesday, July 12**  
**4:30 pm - 6:00 pm**  
**Convention Center/Ballroom B**

All meeting participants, families, and friends are welcome to attend the Closing/International Reception on Wednesday July 12 from 4:30 pm to 6:00 pm. Again this year, attendees will have the opportunity to indicate their home affiliate on a world map; check the exhibit hall for the poster board before this reception.
ADSA-ASAS Award Donors

**ADSA**

Alltech, Inc.
ABS Global, Inc.
ADSA Foundation
American Dairy Science Association
American Feed Industry Association
Cargill Animal Nutrition, Inc.
DMI, Inc.
Danisco USA, Inc.
DeLaval Inc.
Elanco Animal Health
Hoard’s Dairyman
International Dairy Foods Association
Land O’Lakes, Purina Feed LLC
Merial Limited
National Milk Producers Federation
Nutrition Professionals, Inc.
Pfizer Animal Health, Inc.
Pioneer Hi-Bred International, Inc.
West Agro, Inc.

**ASAS**

ABS Global, Inc.
American Feed Industry Association
American Society of Animal Science
Center for Regulatory Services, Inc.
DSM Nutritional Products, Inc.
Elanco Animal Health
L. E. Casida Fund
Land O’Lakes, Purina Mills LLC
Merial Limited
Monsanto Company
Morrison Award Fund
Omega Protein Corporation
Pfizer Animal Health
The Iams Company

Thank you for your support!
Minneapolis Overview

Minneapolis is a world-class city, with fabulous shopping, dining, and entertainment. Getting around is a snap using light rail transit, with stops in downtown, the airport, and Mall of America. No matter what the weather, easily travel between many hotels and attractions using the skyway system.

Diverse ethnic options line Nicollet Avenue’s “Eat Street”, and the Warehouse District is the center of downtown’s nightlife, bursting with restaurants and nightclubs.

The music and theater scene is top-notch, with everything from Broadway shows to local and national bands. Tony Award-winners Theatre de la Jeune Lune, The Children’s Theatre Company, and the Guthrie Theater all call Minneapolis home, as well as three historic theaters that make up the Hennepin Theatre District, and orchestra and opera groups perform throughout the year.

Art, science, and history are on display at over 57 museums in the city and well-known places such as Walker Art Center and Weisman Art Museum that have made their mark nationally.

Shop along Nicollet Mall at the flagship Marshall Field’s store or visit the largest mall in the country, Mall of America. Plus, there’s no sales tax on apparel, so get ready to save.

Visit the historic Riverfront District, where Minneapolis got its start in the flour milling industry. Experience the City of Lakes at its best and walk or bike on over 50 miles of trails along the Grand Round Scenic Byway or enjoy paths winding through the city along the Mississippi River.

Currency Exchange

Minneapolis/St. Paul International Airport offers a currency exchange service (612-726-5187) from 6:00 am - 8:00 pm Monday through Saturday and from 8:00 am - 8:00 pm on Sunday. The currency exchange is located in the airport Business Center on the upper level of the main terminal between doors 5 and 6 across from the Northwest Airline ticket counter.

Currency Exchange is also available in downtown Minneapolis at Wells Fargo
6th Street & Marquette Avenue
612-667-1234
Monday through Friday 7:30 am - 5:00 pm

Minneapolis Tour Options

With the abundance of things to do in Minneapolis, there will be no formal tours offered during the 2006 ADSA-ASAS Joint Annual Meeting. Listed below are just a few of the exciting options for you to consider while you are in Minneapolis.

Segway Tours (800) 749-5584, www.humanonastick.com

Travel back in time on a Magical History Tour™! Ride a Segway as you enjoy the history of the Minneapolis Riverfront area from 10,000 BC to present without breaking a sweat. Let the Segway do the work as you cover several miles accompanied by a professional guide. Allow your guide to assist you in experiencing various eras of the river while stopping frequently at historical sites, including the Stone Arch Bridge, Mill Ruins Park, Nicollet Island, and many more wonderful Minneapolis sights. Every Magical History Tour™ starts with training on how to operate a Segway safely and then a 5-7 mile beautiful historic route. The whole experience will last around 3 hours and include a stop for refreshments at the Mill City Museum. Ages 13-80 are welcome with a weight restriction of 280 lbs. All riders are required to wear helmets.
RiverCity Trolley Tours (612) 378-7833, www.rivercitytrolley.org

Climb aboard! Vintage-looking trolleys beckon you back to a time when streetcars roamed thousands of miles of track linking America’s city streets. With the clank of the bell, you’re off on a 60-minute excursion through Minneapolis while entertaining conductors tell colorful stories of times and places gone by and highlighting the hot spots of today. And because you can get off and on at any point along the route, it’s a fun mode of transportation while you enjoy a day on the town. The trolley leaves from the Minneapolis Convention Center every 30 minutes. The last tour leaves the Convention Center at 3:00 pm.

Riverfront Cruises (612) 378-7966, www.minneapolisqueen.com

The Minneapolis Queen, a brand new paddle wheeler, offers cruises on the Mississippi River through historic downtown Minneapolis. We are conveniently located at Boom Island Park in the heart of the historic Minneapolis Riverfront District. Our brand new paddle wheeler is a perfect way to experience the history of beautiful downtown Minneapolis.

Minnesota Zoo (800) 366-7811, www.mnzoo.com

With over 2,000 animals to visit, a working farm, an IMAX theater for spectacular flicks, a monorail to zip around the zoo, and numerous educational programs, the Minnesota Zoo is sure to keep the whole family entertained.

Mill City Museum (612) 341-7555, www.millcitymuseum.org

An attraction for all ages, Mill City Museum chronicles the flour milling industry that dominated world flour production for roughly a half-century and fueled the growth of Minneapolis, recognized across the nation and around the world as “Mill City.” Built within the ruins of a National Historic Landmark—the Washburn A Mill—the museum provides a multi-sensory, interactive journey. The story of flour milling—and its impact on Minneapolis, the nation and the world—comes to life through the eight-story Flour Tower and other hands-on exhibits.

American Swedish Institute (612) 871-4907, www.americanswedishinst.org

The American Swedish Institute, founded in 1929 by Swan J. Turnblad, is a historic house/museum offering a variety of programs designed to celebrate Swedish culture. The Turnblad mansion, which houses the Institute, is on the National Register of Historic Places. It is the only castle in the Twin Cities.

Minnesota Children’s Museum (651) 225-6000, www.mcm.org

The mission of the Minnesota Children’s Museum is to spark children’s learning through play. It’s a place where infants through children ten years old and adults can touch, climb, splash, crawl, push, pull, and press it all in seven galleries packed with extraordinary hands-on adventures. A must see for young families visiting Minneapolis!

Walker Art Center (612) 375-7600, www.walkerart.org

The Walker Art Center is a place where everything comes together—where paint meets pixels and anime meets matinee. With a suite of new galleries, a refurbished cinema, two restaurants by Wolfgang Puck, a new shop and library, a state-of-the-art theater, and much more, it’s the place where art meets life. Opened in April 2005, the new Walker Art Center includes increased indoor and outdoor facilities, allowing us to share more of our resources—from objects in the permanent collection to books in our library to an inside view of the artist’s own creative process—with our growing audience. Increasingly, this ability to link ideas from different disciplines and art forms is seen as a model for cultural institutions of the future. A key aspect of the design is a “town square,” a sequence of spaces that, like the Minneapolis Sculpture Garden, draws people for informal conversation, interactive learning, and community programs.
The Mall of America (952) 883-8800, www.malfoamerica.com

One of the most-visited tourist destinations in the world, the Mall of America offers something for everyone with 520 stores, 50 restaurants, and attractions galore! The Mall of America is only 15 minutes from downtown Minneapolis and is accessible via the Hiawatha Light Rail System.

The Minneapolis Institute of Art (612) 870-3131, www.artsmia.org

The Minneapolis Institute of Arts houses more than 100,000 objects from diverse cultural traditions spanning 5,000 years of world history. The Institute is a comprehensive and encyclopedic fine arts museum serving the Twin Cities and the Upper Midwest and is recognized internationally as one of the great museums in America. The museum has free general admission every day.


This Golf Digest four-star and top-50 value golf course deserves recognition for more than just its quality of play and low green fees. This municipal Minneapolis golf course received the Links Magazine Audubon International “1996 Best of Golf” award in the category of golf and the environment. Green fees are in the $22-$30 range. The course is about 20 miles from downtown Minneapolis.
Exhibit Schedule

Exhibit Hours:

Sunday, July 9, Exhibitor Setup ........................................... 8:00 am - 5:00 pm
Monday, July 10, Exhibits Open ........................................... 7:30 am - 5:00 pm
Tuesday, July 11, Exhibits Open .......................................... 7:30 am - 5:00 pm
Wednesday, July 12, Exhibits Open ...................................... 7:30 am - 5:00 pm
Wednesday, July 12, Exhibitor Teardown .............................. 5:30 pm - 8:00 pm
**Guide to Exhibitors/Booth Numbers**

<table>
<thead>
<tr>
<th>Company/Organization</th>
<th>Booth Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAALAC International</td>
<td>209</td>
</tr>
<tr>
<td>Acadian Agritech</td>
<td>501, 503</td>
</tr>
<tr>
<td>Adisseo</td>
<td>103</td>
</tr>
<tr>
<td>ADSA Centennial Booth</td>
<td>714</td>
</tr>
<tr>
<td>ADSA-ASAS</td>
<td>715, 717</td>
</tr>
<tr>
<td>Ag Processing/Amino Plus</td>
<td>602</td>
</tr>
<tr>
<td>Alltech</td>
<td>109</td>
</tr>
<tr>
<td>Aloka Ultrasound</td>
<td>409</td>
</tr>
<tr>
<td>American Registry of Professional Animal Scientists (ARPAS)</td>
<td>712</td>
</tr>
<tr>
<td>Analab</td>
<td>313</td>
</tr>
<tr>
<td>ANKOM Technology</td>
<td>105, 204</td>
</tr>
<tr>
<td>APC, Inc.</td>
<td>418</td>
</tr>
<tr>
<td>Arm &amp; Hammer Animal Nutrition</td>
<td>205, 304</td>
</tr>
<tr>
<td>Balchem</td>
<td>305, 404</td>
</tr>
<tr>
<td>Bar Diamond, Inc.</td>
<td>217</td>
</tr>
<tr>
<td>BIOMIN</td>
<td>408</td>
</tr>
<tr>
<td>Blackwell Publishing</td>
<td>117</td>
</tr>
<tr>
<td>Classic Ultrasound Equipment</td>
<td>308</td>
</tr>
<tr>
<td>Cotton Incorporated</td>
<td>319</td>
</tr>
<tr>
<td>Council for Agricultural Science &amp; Technology (CAST)</td>
<td>716</td>
</tr>
<tr>
<td>Cumberland Valley Analytical Services, Inc.</td>
<td>310</td>
</tr>
<tr>
<td>Dairy Records Management</td>
<td>101</td>
</tr>
<tr>
<td>Dairyland Laboratories, Inc.</td>
<td>202</td>
</tr>
<tr>
<td>Dalex Computer Systems</td>
<td>203</td>
</tr>
<tr>
<td>Degussa Corporation</td>
<td>705</td>
</tr>
<tr>
<td>Diamond V Mills</td>
<td>515, 517, 519</td>
</tr>
<tr>
<td>Distillers Grains Technology Council</td>
<td>410</td>
</tr>
<tr>
<td>DSM Nutritional Products</td>
<td>119</td>
</tr>
<tr>
<td>Elanco Animal Health</td>
<td>708</td>
</tr>
<tr>
<td>ELSEVIER</td>
<td>400</td>
</tr>
<tr>
<td>FDA - Center for Veterinary Medicine</td>
<td>215</td>
</tr>
<tr>
<td>Federation of Animal Science Societies (FASS)</td>
<td>711, 713</td>
</tr>
<tr>
<td>Feed Management Systems, Inc.</td>
<td>600</td>
</tr>
<tr>
<td>FeedAC</td>
<td>710</td>
</tr>
<tr>
<td>FEEDSTUFFS</td>
<td>402</td>
</tr>
<tr>
<td>GrowSafe Systems</td>
<td>505</td>
</tr>
<tr>
<td>GTC Nutrition</td>
<td>303</td>
</tr>
<tr>
<td>H.J. Baker &amp; Bro., Inc.</td>
<td>804</td>
</tr>
<tr>
<td>Hoard’s Dairymen</td>
<td>311</td>
</tr>
<tr>
<td>Ice Robotics Limited</td>
<td>509, 608</td>
</tr>
<tr>
<td>International Ingredient Corporation</td>
<td>700</td>
</tr>
<tr>
<td>Iowa Soybean Association</td>
<td>604</td>
</tr>
<tr>
<td>Midland BioProducts Corporation</td>
<td>513</td>
</tr>
<tr>
<td>MS Specialty Nutrition/MSB</td>
<td>605, 704</td>
</tr>
<tr>
<td>National Institute for Animal Agriculture</td>
<td>508</td>
</tr>
<tr>
<td>Nouricheck Nutrition, Ltd.</td>
<td>702</td>
</tr>
<tr>
<td>Novus International, Inc.</td>
<td>611, 613</td>
</tr>
<tr>
<td>Omega Protein, Inc.</td>
<td>200</td>
</tr>
<tr>
<td>Partners Advantage Representing:</td>
<td></td>
</tr>
<tr>
<td>Agriliance, Land O’ Lakes Purina Feed &amp; Croplan Genetics</td>
<td>302</td>
</tr>
<tr>
<td>PetAg, Inc.</td>
<td>301</td>
</tr>
<tr>
<td>Poultry Protein &amp; Fat Council</td>
<td>309</td>
</tr>
<tr>
<td>Prentice Hall</td>
<td>213</td>
</tr>
<tr>
<td>Prince Agri-Products, Inc.</td>
<td>405, 504</td>
</tr>
<tr>
<td>Probiotech International, Inc.</td>
<td>219</td>
</tr>
<tr>
<td>Quality Management, Inc.</td>
<td>412</td>
</tr>
<tr>
<td>Saf Agri/Lesaffre Feed Additives</td>
<td>312</td>
</tr>
<tr>
<td>SoyBest</td>
<td>201, 300</td>
</tr>
<tr>
<td>Trouw Nutrition USA</td>
<td>218</td>
</tr>
<tr>
<td>Unity Scientific, Inc.</td>
<td>603</td>
</tr>
<tr>
<td>USDA - Animal Welfare Information Center</td>
<td>211</td>
</tr>
<tr>
<td>Varied Industries Corporation</td>
<td>601</td>
</tr>
<tr>
<td>Virtus Nutrition</td>
<td>216</td>
</tr>
<tr>
<td>West Central</td>
<td>818</td>
</tr>
<tr>
<td>Western Yeast Company</td>
<td>414</td>
</tr>
<tr>
<td>Zinpro</td>
<td>401, 500, 403, 502</td>
</tr>
</tbody>
</table>

**A special thank you to our 2006 ADSA-ASAS Joint Meeting Exhibitors!**
AAALAC International offers accreditation, assessment, and education services for agricultural animal research programs. Earning accreditation demonstrates dedication to responsible animal care and assures research partners, funding sources, and the public of a commitment to quality research and good science. More than 700 institutions in 28 countries have earned AAALAC accreditation.

Acadian Agritech
30 Brown Ave.
Dartmouth, NS B3B1X8
Phone: 902-468-2840; Fax: 902-468-3474
www.acadianagritech.com
Booth(s): 501, 503
Tasco® is a natural feed ingredient made of proprietary processed *Ascophyllum nodosum*. Tasco® is generally regarded as safe (GRAS) in animal feeds. There are no withdrawal times, and it is legal to feed in all classes of livestock including lactating dairy cows. Tasco® is backed by more than 15 years of research that shows feeding Tasco® to livestock can improve production and producer profitability.

Adisseo
3480 Preston Ridge Rd.
Suite 375
Alpharetta, GA 30005
Phone: 404-580-8951; Fax: 678-337-1602
www.adisseo.com
Booth(s): 103
Adisseo offers a wide range of feed additives in various forms, adapted for all types of feed and for all species. Our products include Microvit® (full line of vitamins), Rhodimet® (methionine in both powder and liquid analog forms), MetaSmart® and Smartamine® (ruminant methionine), and Rovabio® (enzymes in both liquid and powder forms).

Ag Processing Inc./Amino Plus
PO Box 2047
Omaha, NE 68103-2047
Phone: 402-492-3309; Fax: 402-496-6686
www.agp.com
Booth(s): 602
AminoPlus® is a natural all soybean-based ingredient used to enhance the productivity of dairy cattle. AGP’s patented technology takes advantage of highly palatable soy proteins to supply a high level of highly digestible essential amino acids to the small intestine without the addition of chemicals or non-soybean components.

Alltech
3031 Catnip Hill Pike
Nicholasville, KY 40356
Phone: 859-887-3251; Fax: 859-887-3256
www.alltech.com
Booth(s): 109
For more than 25 years, Alltech has been researching and providing all-natural nutritional solutions that benefit animal health, performance and productivity. Alltech’s cutting-edge brands (Yea-Sacc®1026, Sel-Plex®, Bio-Mos®, Mycosorb®, MTB-100®, Bio-plex® and Sil-All®) set a unique example of how all-natural technologies backed by dedicated research can move the industry forward.

Aloka Ultrasound
10 Fairfield Blvd.
Wallingford, CT 06492
Phone: 800-872-5652; Fax: 203-269-6075
www.aloka.com
Booth(s): 409
Aloka Ultrasound has a full range of ultrasound systems for all veterinary applications. The super premium Alpha 10 and premium Alpha 5 offer superb image quality for the most challenging cases. We also offer more cost-effective solutions in the SSD1400, SSD3500, and SSD4000. Our two portables, the SSD500 and SSD900 are reliable, rugged systems that are ideal for large animal reproduction, equine tendons, and, in the case of the 500, food-animal live carcass evaluation.
Analab
18246 Waller Rd.
Fulton, IL 61252
Phone: 800-435-9560; Fax: 815-589-4565
www.analabtest.com
Booth(s): 313
Analab Laboratory had been providing testing services since 1972. As a fully certified laboratory, Analab offers a full range of chemical, biological, and microbiological testing to the livestock and seed industries. Samples tested at Analab vary from animal feeds, forages, silages, grains, manure, and urine. Analab is dedicated to satisfying our clients through accurate, precise, and timely analysis.

ANKOM Technology
2052 O’Neil Road
Macedon, NY 14502
Phone: 315-986-8090; Fax: 315-986-8091
www.ankom.com
Booth(s): 105, 204
ANKOM Technology manufactures and markets instrumentation for the food and feed industry. ANKOM is best known for the development of Filter Bag Technology (FBT) for determining Acid, Neutral and Crude Fiber in feedstuffs, as well as Crude and Total Fat in feeds and foods. ANKOM has products supporting in vitro digestibility, in vitro gas production and in situ digestibility. ANKOM products are in use in over 80 countries around the world.

APC, Inc.
2425 SE Oak Tree Ct.
Ankeny, IA 50021
Phone: 515-289-7673; Fax: 515-289-4360
www.functionalproteins.com
Booth(s): 418
APC, Inc. is a world leader in the development of functional proteins for animal health and nutrition. For twenty-five years, APC’s research investments have yielded safe, effective products to improve animal performance in the swine, ruminant, aquaculture, companion animal, and poultry industries.

Arm & Hammer Animal Nutrition
469 N. Harrison
Princeton, NJ 08543
Phone: 607-279-7685; Fax: 607-497-7176
www.ahdairy.com
Booth(s): 205, 304
Arm & Hammer Animal Nutrition is a leading supplier of innovative dairy feed ingredients that impact each phase of a cow’s life cycle. The products in our Portfolio for Profitability™ have been specially formulated to give you more profit per cow. Trust Arm & Hammer Animal Nutrition for innovative, proven, and trusted nutritional solutions.

Balchem
PO Box 600
New Hampton, NY 10958
Phone: 845-326-5711; Fax: 845-326-5742
www.balchem.com
Booth(s): 305, 404
Founded in 1967, Balchem Corporation and the Animal Nutrition & Health division provides ‘protection nutrition’ products to the dairy industry including encapsulated choline (Reashure®), niacin (Niashure®), urea (Nitroshure®), and vitamin C (Vitoshure®). With the recent purchase of Chelated Minerals Corporation, the company provides premium quality protected Keylated® trace minerals for dairy use.

Bar Diamond Inc.
PO Box 60
Parma, ID 83660
Phone: 208-722-6761; Fax: 208-722-6686
www.bardiamond.com
Booth(s): 217
Bar Diamond, Inc. supplies rumen cannulae and accessories to researchers worldwide.

Biomin
1846 Lockhill-Selma
Suite 101
San Antonio, TX 78213
Phone: 210-342-9555; Fax: 210-342-9575
www.biomin.net
Booth(s): 408
Blackwell Publishing
2121 State Ave.
Ames, IA 50014
Phone: 515-292-0140; Fax: 515-292-3348
www.blackwellprofessional.com
Booth(s): 117
Blackwell Publishing is the world’s largest independent and privately owned academic publishing company and a world-leading publisher of books and journals in veterinary medicine (science), food science and technology, and animal science. Blackwell publishes texts that represent the very best in clinical expertise, student learning, and academic research. You may find us at www.BlackwellVet.com and www.blackwellfood.com

CABI Publishing
Nosworthy Way
Wallingford, Oxon OX10 8DE
Phone: 44 1491 829310; Fax: 44 1491 829198
www.cabi.org
Booth(s): 416
CABI is a not-for-profit organization that improves people’s lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment. Our activities encompass scientific publishing, research, and communication and link science directly with rural communities. We publish a number of books, journals, and abstracts databases in animal science.

---

**NEW DATA!**

**PRO-LAK IMPROVES FEED EFFICIENCY!**

- University Research shows Pro-Lak improves Feed Efficiency by an average of 8.05%.
- Dr. Mike Hutjens, University of Illinois states "A move from 1.5 to 1.6 (0.1 change in FE) equals $0.20 / cow / day"
- What would 8.05% improvement in Feed Efficiency save you in feed costs?

*Call your feed supplier, nutritionist or H.J. Baker today!*

For more information:
H.J. Baker & Bro., Inc • 228 Sugatuck Avenue, Westport, CT 06880 USA
Phone (203) 682-9200, Telex ITT 42-0944, Fax (203) 227-8351
Email: salesinfo@bakerbro.com • Website: http://www.bakerbro.com

---

H.J. BAKER & BRO., INC.
Quality Products Since 1850
Our Difference is Dependability
Classic Ultrasound Equipment
19900 Mona Rd. #105
Tequesta, FL 33469
Phone: 800-722-6838; Fax: 561-746-4212
www.classicmedical.com
Booth(s): 308
The veterinary ultrasound specialists since 1985, Classic Medical Supply now offers the powerful Telavet 1000 Digital Notebook PC ultrasound system with 17cm Animal Science probe. Now going digital ultrasound for high quality and ease of use is simple. Contact us at (800) 722-6838 or visit www.classicmedical.com for latest information.

Cotton Incorporated
6399 Weston Parkway
Cary, NC 27513
Phone: 919-678-2220; Fax: 919-678-2230
www.cottoninc.com
twendegaertner@cottoninc.com
Booth(s): 319
Cottonseed is an excellent feed ingredient for cattle, especially lactating cows. It has a high level of energy (fat), protein, and effective fiber. Cottonseed usually increases milk production and butterfat when added to the ration. EasiFlo™ cottonseed is fuzzy cottonseed that has been coated with starch to improve handling characteristics.

Council for Agricultural Science and Technology
4420 W. Lincoln Way
Ames, IA 50014
Phone: 515-292-2125 ext 26; Fax: 515-292-4512
www.cast-science.org
Booth(s): 716
The Council for Agricultural Science and Technology, CAST is a nonprofit organization composed of 37 scientific societies and many individual, student, company, nonprofit, and associate society members. CAST’s Board of Directors is composed of 38 representatives of the scientific societies and individual members representing over 170,000 member scientists, and an 8-member Executive Committee. CAST was established in 1972. The primary work of CAST is the publication of task force reports, commentary papers and issue papers, written by scientists from many disciplines. These publications and their distribution are fundamental activities that accomplish our mission to assemble, interpret, and communicate credible science-based information regionally, nationally, and internationally to legislators, regulators, policymakers, the media, the private sector, and the public.

Cumberland Valley Analytical Services, Inc.
PO Box 669
Maugansville, MD 21767
Phone: 301-790-1980; Fax: 301-790-1981
www.foragelab.com
Booth(s): 310
Cumberland Valley Analytical Services, Inc. is a full-service forage testing laboratory that serves clients nationally and internationally. We are one of the largest providers of chemistry services including invitro fiber digestibility, in-situ evaluations, and forage fermentation analysis. We routinely perform work on research samples for universities and private companies, including plot evaluation work for hybrid evaluation.
VTEC-Screen
A simple, rapid and highly accurate shiga toxin detection assay

Dr. Lothar Beutin (Robert Koch Institute, Germany)
“The VTEC-Screen is a very useful and competitive test compared to PCR and the verocell assay and was able to detect VTEC belonging to large number of different O groups.”

Dr. Henrik Chart (Central Public Health Laboratory System, UK)
“VTEC-Screen proved to be a very simple, convenient and accurate method of detecting VTs in bacterial culture supernatants and patients’ faeces.”

Dr. Hussein Hussein, University of Nevada, Reno
“The VTEC-Screen replaced our cell culture system for screening bovine stools in our epidemiological studies of non-O157 VTEC and saved us considerable time, effort and cost. In fact, without this test, we would not be have been able to do the extensive studies that we did.

The figures at right show a negative and a positive reaction, respectively. Latex particles are coated with anti-shiga-toxin antibodies and if shiga toxins are present in the sample, agglutination occurs such that the latex particles agglutinate and settle to the bottom of the microtiter well to form a visible precipitate. If negative, the latex particles simply settle into a single button-like mass.
Dairy Records Management Systems  
316 Chapanoke Rd.  
Suite 100  
Raleigh, NC 27603  
Phone: 919-661-3108; Fax: 919-661-3145  
www.drms.org  
Booth(s): 101

DRMS processes DHI data for 14,500 herds with 1.8 million cows each month. Our comprehensive PCDART© program with PocketDairy® for handheld units (which accepts scanned RFID input) will be demonstrated with the newest features. See why PCDART continues to be the most used herd management software in the US.

Dairyland Laboratories, Inc.  
217 E. Main St.  
Arcadia, WI 54612  
Phone: 608-323-2123; Fax: 608-323-2184  
www.dairylandlabs.com  
Booth(s): 202

Dairyland Laboratories, Inc. is a completely independent agriculture-testing laboratory providing extensive analysis of feed, forage, soil, water, and manure. We provide a complete range of services including molds, mycotoxins, in vitro digestibilities (NDF and starch), NIR calibration, development & licensing.

Dalex Computer Systems  
240 Industrial Blvd  
Waronia, MN 55387  
Phone: 800-421-3834; Fax: 800-442-2543  
www.dalex.com  
Booth(s): 203

Consulting Nutritionist is a flexible ration-balancing program designed for dairy, beef, swine, and horse species. This program provides ration-balancing and ration modeling using up-to-date scientific data including NRC Dairy 2001, CNCPS Model, NRC Swine 1998 and NRC Beef 1996. Come see our newest release in booth 203. Call 1-800-421-3834.

Degussa Corporation  
1701 Barrett Lakes Blvd.  
Suite 340  
Kennesaw, GA 30144  
Phone: 678-797-4300; Fax: 678-797-4313  
www.aminoacidsandmore.com  
Booth(s): 705

Diamond V Mills  
838 1st St. NW  
Cedar Rapids, IA 52402  
Phone: 319-866-7641; Fax: 319-366-6333  
www.diamondv.com  
Booth(s): 515, 517, 519

Diamond V is the world’s leading manufacturer of fermented yeast culture products. For over 60 years we’ve provided customers with YC, XP, XPC Concentrate, and XP DFM, a direct-fed microbial blend for ruminants. SelenoSource AF is our premier organic selenium yeast. We now introduce DV Aqua, our premier yeast culture designed & manufactured specifically for aquaculture.

Distillers Grains Technology Council  
435 Lutz Hall  
Univ. of Louisville  
Louisville, KY 40292  
Phone: 800-759-3448; Fax: 502-852-1577  
www.distillersgrains.org  
Booth(s): 410

Distillers grains is a rapidly expanding animal feed ingredient from the ethanol fuel and beverage distillers with over 9 million tons being produced in the United States. University and on farm feeding studies have proven its excellent nutritive value and potential to reduce ration costs. Ask us for sources and applications using it wet or dry.
DSM Nutritional Products  
45 Waterview Blvd.  
Parsippany, NJ 07054  
Phone: 973-257-8179; Fax: 973-257-8653  
www.nutraaccess.com  
Booth(s): 119  
DSM Nutritional Products is the global leader in micro-ingredients solutions. DSM Nutritional Products is proud to offer the most comprehensive line of vitamins available in the market place, along with enzymes and direct-fed microbials. With their network of 34 premix plants globally, DSM Nutritional Products can deliver customized nutrition solutions, anywhere in the world.

Elanco Animal Health  
2001 West Main St.  
PO Box 708  
Greenfield, IN 46140  
Phone: 317-276-4124; Fax: 317-276-4471  
www.elanco.com  
Booth(s): 708

Elsevier  
1600 John F. Kennedy Blvd.  
Suite 1800  
Philadelphia, PA 19103  
Phone: 215-234-3491; Fax: 215-234-3494  
www.elsevierhealth.com  
Booth(s): 400  
Elsevier is the leading publisher in veterinary medicine and animal science, and publishes journals such as Livestock Science, Applied Animal Behaviour Science, and Animal Feed Science and Technology. Visit our stand for sample copies and more information on these and our other journals!

FDA-CVM  
7519 Standish Place  
Suite 3508  
Rockville, MD 20855  
Phone: 240-276-9301; Fax: 240-276-9115  
www.fda.gov/cvm  
Booth(s): 215  
The Center for Veterinary Medicine (CVM) regulates the manufacture and distribution of food additives and drugs for animals, including food animals and companion animals. CVM regulates drugs, devices, and food additives used in over one hundred million companion animals, plus millions of poultry, cattle, swine, and other species.

Feed Management Systems, Inc.  
720 E. Blue Earth Avenue  
Fairmont, MN 56031  
Phone: 763-560-8138 x 188; Fax: 507-238-3350  
www.feedsys.com  
Booth(s): 600  
Feed Management Systems, Inc. (FMS) is an award-winning software solutions company linking critical information between feed manufacturers, their suppliers, and customers. FMS helps ensure the safety, quality, and affordability of the global feed supply, providing solutions to automate and optimize formulation, pricing, ordering, labeling, delivery, risk management, & regulatory compliance.

FeedAC  
1111 N. Dunlap  
Savoy, IL 61874  
Phone: 217-356-3182; Fax: 217-398-4119  
www.feedac.org  
Booth(s): 710  
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 building and maintaining a Feed Information System for all farm animals, developing improved methods of feed analysis, and encouraging the development of improved diet formulation and evaluation models. FeedAC replaces the previously established Ruminant Feed Analysis Consortium (RFAC). Please visit www.feedac.org for membership information.
FEEDSTUFFS
12400 Whitewater Drive
#160
Minnetonka, MN 55343
Phone: 952-930-4349; Fax: 952-938-1832
www.feedstuffs.com
Booth(s): 402
FEEDSTUFFS is the only weekly, paid news source for agribusiness. Each week, we keep our subscribers informed on the important issues affecting the business of producing food for the world. It is the only place to get the weekly news about business mergers & acquisitions, retail & consumer trends, poultry & livestock market supply & demand, regulatory & political affairs, production animal & pet health & nutrition, global developments, crop & grain markets, commodity price updates, and new products & concepts.

GrowSafe Systems
280105 Range Rd. 22
RR1 Site 1 Box 19
Airdrie, AB T4B2A3
Phone: 403-912-1879; Fax: 403-398-1327
www.growsafe.com
Booth(s): 505
GrowSafe Systems Ltd. (GrowSafe) develops innovative RFID solutions for the agricultural research, fed cattle, and dairy industries. We are both a systems integrator and an OEM with extensive engineering capability. A GrowSafe RFID system individually identifies animals with attached or implanted electronic identification tags. GrowSafe antennas and external sensors acquire information about an individual animal’s intake, behavior, health, and performance without direct contact or line of sight.

GTC Nutrition
600 Corporate Circle
Suite H
Golden, CO 80401
Phone: 303-216-2489; Fax: 303-216-2477
www.fortifeed.com
Booth(s): 303
GTC Nutrition is a leading provider of customized nutrition solutions, and science-based ingredients that promote health for all animals and humans. The company’s areas of expertise include scientific and technical counsel, marketing and brand development, applications innovation, logistics and regulatory support, and customer service. For more information, please visit www.fortifeed.com.

H.J. Baker & Bro., Inc.
228 Saugatuck Ave.
Westport, CT 06880
Phone: 203-682-9200; Fax: 203-227-8351
www.bakerbro.com
Booth(s): 804
H.J. Baker & Bro, Inc. brings the experience and resources of over 50 years of manufacturing marine and animal protein supplements and 150 years in the feed, food and fertilizer business. In the late 1980s H.J. Baker assembled a team of the best university minds in the field of dairy protein nutrition to develop and research PRO LAK for the dairy industry. Specifically formulated for today’s high producing dairy cow, PRO LAK is a multisource marine and animal by-pass protein designed to compliment the protein from rumen microbial activity. The desired nutrient balance is accomplished by 72% of the protein by passing rumen degradation and delivering the essential amino acid profile to support maximum milk production. University research has been conducted looking at milk production, digestibility, and feed efficiency of PRO LAK. All of our research can be found at our website: www.bakerbro.com

Hoard’s Dairyman
PO box 801, 28 Milwaukee Ave. W
Fort Atkinson, WI 53538-0801
Phone: 920-563-5551; Fax: 920-563-7298
www.hoards.com
Booth(s): 311
Ice Robotics Limited
Logan Bldg. Roslin Biocentre
Roslin, Scotland
Phone: (44131) 527-4380; Fax: (44131) 527-4381
www.icerobotics.co.uk
Booth(s): 509, 608
IceRobotics develops and manufactures advanced sensor systems and automation technologies for use in livestock management and research. This includes IceTag for animal activity monitoring, IceScore for body condition scoring, and IceSampler for automatic blood sampling. Further information can be found at www.icerobotics.com

International Ingredient Corporation
4240 Utah St.
Box 22106
St. Louis, MO 63116
Phone: 314-776-2700; Fax: 314-776-3395
www.iicag.com
Booth(s): 700
International Ingredient Corporation is a manufacturer of high-quality specialty ingredients for the animal feed and petfood industries. IIC has nine plant locations supplying ingredients for swine, pets, dairy cattle, aquaculture, and poultry. Key IIC products include: Dairylac® 80, Granular Whey, Brewtech® Brewers Yeast, Cheese Plus, Milk Chocolate Product, Nutri-Sure™, Brown Sugar Food, and other specialty ingredients.

Midland BioProducts Corporation
800 Snedden Drive
PO Box 309
Boone, IA 50036
Phone: 800-370-6367; Fax: 515-432-7790
www.midlandbio.com
Booth(s): 513
Midland Quick Test Kits (a lateral flow device) measure passive immunity issues in newborn calves and foals. Testing either the calf or foal’s whole blood, dam’s colostrum, or mare’s colostrum for IgG. Antibodies, controls, buffers, and US standards for quantitatively measuring equine, bovine, and porcine IgG are available.

MS Specialty Nutrition/ MSB
Illinois & Water St.
Dundee, IL 60118
Phone: 847-426-3411 x 1125; Fax: 847-426-4121
www.msspecialtynutrition.com
Booth(s): 605, 704
MS Specialty Nutrition/MSB is a leading, research-driven supplier of nutrition and health products designed to optimize animal performance. For over 55 years, MS Specialty Nutrition has been dedicated to research, develop, manufacture and market high-quality products and services to its customers.

Iowa Soybean Association
4554 144th St.
Urbandale, IA 50322
Phone: 515-251-8640; Fax: 515-251-8657
www.iасoybeans.com
Booth(s): 604

National Institute for Animal Agriculture
1910 Lyda Ave.
Bowling Green, KY 42104
Phone: 270-782-9798; Fax: 270-782-0188
www.animalagriculture.org
Booth(s): 508
The National Institute for Animal Agriculture (NIAA) is a forum for building consensus and advancing solutions for animal agriculture and to provide continuing education and communications linkages to animal agriculture professionals. Our mission truly reflects NIAA—where it has been, where it is, and where it is going. NIAA is the only forum where producers/owners (cattle, equine, poultry, small ruminants, and swine), scientists (corporate, academia, and government), veterinarians (private practice, industrial, and government), regulators (state and federal), and business executives (corporate and association) meet in a common effort to deal with shared issues and opportunities. Visit our web site www.animalagriculture.org.
Nouriche Nutrition, Ltd.
21 Normandy Drive
Lake St. Louis, MO 63367
www.nouriche.com
Booth(s): 702
Nouriche Nutrition, always on the leading edge of new technology, is the foremost leading innovator and supplier of high-performance, most-cost-effective Solutions dispersible premixes, supplements, and electrolytes for calves, horses and pigs, Nutrior soluble wheat gluten protein, Emcelle—the most bio-available vitamin E for calves, Baby Doll dairy beef feeds and introducing the Jubilee computerized, self-cleaning freedom feeding equipment.

Novus International, Inc.
530 Maryville Centre Drive
St. Louis, MO 63141
Phone: 314-576-8441; Fax: 314-576-4635
www.novusint.com
Booth(s): 611, 613
Novus International, Inc. is a global leader in the animal feed and health industries, with an ever-expanding portfolio of nutrition and health solutions. The Novus product line includes amino acids, minerals, organic acids, feed quality, and specialty, with brand names such as ALIMET®, MFP™, MINT-REX®, ACTIVATE®, and SANTOQUIN®.

Omega Protein, Inc.
2101 CityWest Blvd.
Bldg. 3, Suite 500
Houston, TX 77042
Phone: 713-940-6169; Fax: 713-940-6166
www.omegaproteininc.com
Booth(s): 200
Omega Protein is the world’s largest manufacturer of heart-healthy fish oils containing omega-3 fatty acids, as well as protein rich specialty fish meals and fish solubles used as value-added ingredients in aquaculture, pet, equine, poultry, swine and other livestock feeds. Our products are available in bulk, bag, or drums.

Partners Advantage Representing: Agrilliance, Land O’ Lakes Purina Feed & Croplan Genetics
PO Box 64089 - MS 348
St. Paul, MN 55164
Phone: 651-451-5304; Fax: 651-451-4561
www.landolakesinc.com or www.partnersadvantage.net
Booth(s): 302
Welcome to the Land Of Opportunity! Land O’Lakes Purina Feed has many opportunities with positions in both sales and mid-management. We also have trainee and college internship opportunities available. Land O’Lakes Purina Feed is the leading feed company in North America. We are seeking candidates with strong nutrition, management or sales backgrounds for positions across the United States. There are currently many great opportunities available. Land O’Lakes, Inc. is an Equal Opportunity and Affirmative Action Employer. Land O’Lakes, Inc. enforces a policy of maintaining a drug free workforce, including pre-employment substance abuse testing.

PetAg Inc.
255 Keyes Ave
Hampshire, IL 60140
Phone: 847-683-2288; Fax: 847-683-2343
www.petag.com
Booth(s): 301
Vast array of pet products, including market-leading milk replacers Esbilac® and KMR®, Rawhide Brand®, USA Beefhide chews Made in the U.S.A., Chunky Chew™, award winning Pink Parrot® avian toys and treats, Doggy Giggles™ dog toys and many other PetAg® nutritional products including EnerGel™, Mirra-Coat® skin & coat supplements for canine, feline and equine. Foal-Lac® equine milk replacer, Formula V® veterinary products and Zoologic Milk Matrix system for exotic animals.
Poultry Protein & Fat Council
1530 Cooledge Rd.
Tucker, GA 30084
Phone: 770-493-9401; Fax: 770-493-9257
www.poultryegg.org
Booth(s): 309
The Poultry Protein & Fat Council is a consortium of 13 member companies that produce high-quality poultry meal, feather meal, and poultry fat. Request our free video and/or CD at www.poultryegg.org.

Prentice Hall
1 Lake St.
Upper Saddle River, NJ 07458
Phone: 201-236-5882; Fax: 201-236-5888
www.prenhall.com
Booth(s): 213
Prentice Hall is proud to be the leading provider of high quality educational materials for your agriculture courses. We invite you stop over to our booth or visit our websites at www.prenhall.com or www.prenhall.com/agribooks to see the selection of titles we have available and what we’ve got planned.

Prince Agri-Products, Inc.
PO Box 1009
Quincy, IL 62306
Phone: 217-222-8854; Fax: 217-222-5098
www.princeagri.com
prince@princeagri.com
Booth(s): 405, 504
Prince Agri Products, Inc. takes pride in Advancing Nutrition for Healthy Animals™ by knowing how and why its products work. Prince is your source of quality trace minerals, trace mineral premixes, and branded ingredients. The Prince product line includes: CHROMAX® brand chromium tripicolinate, the leading chromium supplement; Lesaffre yeast products; Desert King natural yucca and quillaja products; Animate, the anionic salt that cows will eat; Omni-Gen-AF® supplement for all stages of cattle; and Rumate®*, the in-feed dewormer for cattle and goats.

---

Find out your calf’s IgG status before it’s too late!

**Colostrum**
Bovine IgG
**Whole Blood**
Calf IgG

**Midland QuickTest Kits®**

**SAVES TIME**
No More waiting for colostrum to reach room temperature before testing

**SIMPLE PROCEDURE**
No More clotting and centrifuging the calf’s blood

**QUALITATIVE ANSWER**
No More guessing at turbidity results or colostrum color and weight

**PREVENTS CARRYOVER**
No More cleaning the refractometer or Colostrometer™

**TIMELY**
No More waiting for RID gel plate results

**LABOR-SAVING**
No More time-consuming procedures

---

US and Canada Toll Free 800.370.6367
Tel 515.432.7799
Fax 515.432.7790
sales@midlandbio.com
www.midlandbio.com
Probiotech International, Inc.
6225 Choquette St.
St. Hyacinthe, QC J2E 8L2
Phone: 450-771-7252; Fax: 450-771-4509
www.probiotech.com
Booth(s): 219
Probiotech International, Inc. develops and provides the animal nutrition industry with natural solutions. The line of products was designed using the principles of biotechnology in order to promote animal health and to maximize agriculture production with the respect of our environment in mind. Products range from patented rumen-protected choline for dairy to organic acidifiers for swine and poultry.

Quality Management, Inc.
426 Hayward Ave. North
Oakdale, MN 55128
Phone: 651-501-2337; Fax: 651-501-5797
www.qmisystems.com
Booth(s): 412

Saf Agri/Lesaffre Feed Additives
433 East Michigan St.
Milwaukee, WI 53202
Phone: 414-615-4046; Fax: 414-615-4003
www.saf-agri.com
Booth(s): 312
Saf Agri/Lesaffre Feed Additives, a member of the Lesaffre Group of companies, markets Lesaffre’s agricultural products throughout North and South America. These products include Procreatin-7® active dry yeast, BIOSAF® heat resistant active yeast for pelleted feeds, LFA Selenium Yeast, SAFIZYM® enzymes (xylanase, beta-glucanase, and cellulase), and Safmannan®, a yeast-derived source of mannan oligosaccharides. The Lesaffre Group is the world’s largest yeast manufacturer and recently opened a new production facility, Red Star Yeast Company LLC, in Cedar Rapids, Iowa.

Soybest
PO Box 157
West Point, NE 68788
Phone: 402-372-2429; Fax: 402-372-3305
www.soybest.com
Booth(s): 201, 300

Trouw Nutrition USA
115 Executive Dr.
Highland, IL 62249
Phone: 618-654-2070; Fax: 618-654-6700
www.trouw-nutritionisa.com
Booth(s): 218
Trouw Nutrition USA offers Greenline™ Technologies that provide nutrition solutions, specialty products and premixes for the livestock, poultry and petfood industry, ie. OPTiMIN® chelated minerals, PROTImAX® Specialized Egg Globulins, Progenos™ 28 - supplement to increase litter size, CowDrink™ - fresh cow supplement, Milkvit® milk replacers, Novasil™ - calcium sodium aluminosilicate, and TNI-betain. Innovation - That’s how. That’s Trouw.

USDA - Animal Welfare Information Center
10301 Baltimore Ave., Room 410
Beltsville, MD 20705
Phone: 301-504-5170; Fax: 301-504-5170
www.nal.usda.gov
Booth(s): 211
The Animal Welfare Information Center, a unit of the United States Department of Agriculture, provides information for the improved care and use of animals used in research, testing, teaching, and exhibition. The staff also assists people and institutions in complying with information requirements of the Federal Animal Welfare Act. Services provided include free publications, workshops, and custom literature searches performed on a cost recovery basis.
Unity Scientific, Inc.
411 E. Main St.
Purcellville, VA 20132
Phone: 540-338-8991; Fax: 540-338-8992
www.unityscientific.com
Booth(s): 603
Unity Scientific manufactures and sells a complete line of cost-effective, network ready NIR (near-infrared) and NIT analyzers for a wide variety of laboratory at-line and process applications. Unity offers a wide range of applications for the following industries: food, feed, pet food, dairy, tobacco, pharmaceutical, and general industrial markets. Unity also offers a complete line of sample preparation equipment that includes auto distillation, solvent extraction, and block digestion.

Varied Industries Corporation
905 S. Carolina Ave.
Mason City, IA 50401
Phone: 641-423-1460; Fax: 641-423-0832
www.vi-cor.com
Booth(s): 601
In 1974, a patent was issued to a small company in Mason City, Iowa, for a fermentation product for animal feeds. This process became the foundation technology on which Varied Industries Corporation (Vi-COR) was founded. Vi-COR has expanded to a company with a global focus, manufacturing world-class fermentation products and providing custom manufacturing services.

Virtus Nutrition
320 Springside Dr. #300
Fairlawn, OH 44333
Phone: 330-665-1999; Fax: 330-665-2195
Booth(s): 216
Virtus Nutrition is a leading marketer of Ener G II®, a rumen inert fat product and the only source of Strata G® with omega-3 fatty acids. As a technology leader, Virtus Nutrition provides performance, consistency, and a rapid response to customer needs, with research proven products vital for the dairy industry’s nutritional requirements.

West Central
406 First St.
Ralston, IA 51459
Phone: 712-667-3200; Fax: 712-667-3479
www.west-central.com
Booth(s): 818
West Central® manufactures innovated feeds for the dairy industry. SoyPLUS® has become the Gold Standard of dairy feed ingredients. It’s highly digestible, delivers high quality RUP, and combines outstanding palatability and consistency. SoyChlor® is a palatable chloride supplement for close-up dairy cows.

Western Yeast Company
305 W. Ash St.
Chillicothe, IL 61523
Phone: 817-560-0351; Fax: 817-560-0351
www.westernyeast.com
Booth(s): 414
Western Yeast Company was founded in 1932 and uses the Newhaven process for making yeast culture. Western Yeast Culture is an active, all-natural feed supplement designed specifically to improve animal nutrition. It consists of live yeast cells, plus the media on which they were grown, carefully dried to maintain the fermentation activity of the cells.

Zinpro
10400 Vicking Dr.
Suite 240
Eden Prairie, MN 55344
Phone: 800-445-6145; Fax: 952-944-2749
www.zinpro.com
Booth(s): 401, 500, 403, 502
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. To learn more, contact your local Zinpro representative.
Products you know.

Nutrition you can trust.

PRINCE AGRI PRODUCTS, INC.
Advancing Nutrition for Healthy Animals™

P.O. Box 1009 • Quincy, IL 62306 • prince@princeagri.com • www.princeagri.com
2006 ADSA - ASAS
Corporate Sustaining Members
(As of June 1, 2006)

ADSA

Akey
Alltech Biotechnology Center
Adisseo
BioZyme Incorporated
Cargill Animal Nutrition
Church & Dwight Company
Custom Dairy Performance, Inc.
Danisco USA Inc.
Diamond V Mills Inc.
DSM Food Specialties
Elanco Animal Health Eli Lilly and Company
Kent Feeds, Inc.
Kerry Bio-Science
Kraft Foods
Land O’Lakes, Inc.
Land O’ Lakes, Purina Feed LLC
MIN-AD, Inc.
Monsanto Corporation
Mosaic
Novus International
Pfizer Animal Health
Pioneer, A DuPont Company
Prince Agri-Products, Inc.
Varied Industries Corporation
West Central
Westfalia Surge Inc.
Zook Nutrition & Management, Inc.

ASAS

Ajinomoto Heartland, LLC
Akey
Archer Daniels Midland Co.
Babcock Genetics, Inc.
Diamond V Mills, Inc.
Elanco Animal Health
Fats & Proteins Research Foundation, Inc.
Global Pig Farms, Inc.
International Ingredient Corporation
Kent Feeds, Inc.
Land O’Lakes, Purina Feed, LLC
MIN-AD, Inc.
Monsanto Company
Mosaic
National By-Products, LLC
National Pork Board
Nutra-Flo Biotechnologies
PCS Sales
Pfizer Animal Health
PIC
Pioneer, A DuPont Company
Prince Agri-Products, Inc.
Ralco Nutrition, Inc.
Zinpro

Thank you for your support!
Schedule of Events

Friday, July 7

06:00 pm - 08:00 pm  ADSA Executive Committee  Hilton Minneapolis, Board Room 3
07:00 pm - 09:30 pm  ASAS New Board Orientation  Hyatt Regency, Lake Minnetonka
07:00 pm - 09:00 pm  ASAS Membership Committee Meeting  Hyatt Regency, Lake Minnetonka

Saturday, July 8

07:00 am - 05:00 pm  PAACO Board Meeting  Hyatt Regency, Lake Nokomis
07:30 am - 05:00 pm  ADSA Board of Directors Meeting  Hilton Minneapolis, Duluth Room
08:00 am - 05:00 pm  ASAS Board of Directors Meeting  Hyatt Regency, Lake Superior A
12:00 pm - 05:00 pm  Registration Open
(Pre-registered, badge & material pick up only)  Convention Center, Mezzanine Level
12:00 pm - 05:00 pm  SAD Tour: Transition Mgmt Facility - Emerald, WI  Meet in the Doubletree Lobby
06:00 pm  SAD Informal Event - Mall of America  Meet in the Doubletree Lobby
07:30 pm - 09:00 pm  ARPAS Executive Committee Meeting  Hyatt Regency, Lake Nokomis

Sunday, July 9

07:00 am - 07:00 pm  Registration Open  Convention Center, Mezzanine Level
07:30 am - 10:00 am  ADSA New Board Orientation  Hilton Minneapolis, Board Room 1
08:00 am - 12:00 pm  ASAS Board of Directors Meeting  Hyatt Regency, Lake Superior A
08:00 am - 05:00 pm  Exhibit Set Up  Convention Center, Exhibit Hall A
08:00 am - 05:00 pm  Student Dairy Clubs Set Up Exhibits  Convention Center, Exhibit Hall A
08:00 am - 05:00 pm  ARPAS Governing Board Meeting  Hyatt Regency, Lake Nokomis
08:00 am - 05:00 pm  Hospitality Lounge  Convention Center, M101A
11:00 am - 12:00 pm  SAD Officers and Advisor Meeting  Convention Center, 200J
12:00 pm - 01:00 pm  ADSA-SAD Midday Mixer & Pizza Party  Convention Center, Seasons
12:00 pm - 01:00 pm  ADSA JDS Editors and Journal Management Committee Luncheon  Hilton Minneapolis, Board Room 2
01:00 pm - 03:00 pm  ADSA Foundation Board of Trustees Meeting  Hyatt Regency, Lake Minnetonka
01:00 pm - 05:00 pm  ADSA Journal Management Committee Meeting  Hilton Minneapolis, Board Room 2
01:00 pm - 05:00 pm  ADSA-SAD Quiz Bowl Seating/Preliminary Rounds  Convention Center, 200HI
02:00 pm - 03:00 pm  ADSA Production Division Council Meeting  Convention Center, M100 BC
02:00 pm - 03:30 pm  ADSA Foundation Board of Trustees Meeting  Hilton Minneapolis, Board Room 1
03:00 pm - 04:00 pm  ADSA Production Division Nominating Committee  Convention Center, M100 DE
03:00 pm - 04:00 pm  ADSA Production Division Resolutions Committee  Convention Center, M100 BC
03:00 pm - 05:00 pm  2006 ADSA-ASAS & 2007 ADSA-ASAS-PSA-AMPA Program Chairs & Vice Chairs Meeting  Convention Center, M100 GH
05:00 pm - 06:00 pm  ADSA Dairy Foods Division Council Meeting  Convention Center, M100 DE
05:00 pm - 05:30 pm  ADSA-SAD Quiz Bowl Final Round  Convention Center, 200 I
05:30 pm  SAD Picnic at Lake Harriet  Pavilion near Band Shell
07:00 pm - 08:30 pm  2006 ADSA-ASAS Opening Session  Convention Center, Auditorium
08:30 pm - 10:00 pm  2006 ADSA-ASAS Opening Reception  Convention Center, Ballroom A

Monday, July 10

06:30 am - 08:00 am  ADSA Production Division Extension Breakfast  Hilton Minneapolis, Salon B
06:30 am - 08:00 am  ADSA Journal Editorial Board Breakfast/Meeting  Hyatt Minneapolis, Duluth Room
06:30 am - 04:00 pm  Registration Open  Convention Center, Mezzanine Level
07:00 am - 08:15 am  ADSA-SAD Exhibit Set up  Convention Center, Exhibit Hall A
07:30 am - 09:30 am  Poster Presentations  Convention Center, Exhibit Hall A
07:30 am - 05:00 pm  Commercial Exhibits & ADSA-SAD Exhibits Open  Convention Center, Exhibit Hall A
07:30 am - 05:00 pm  Job Resource Center  Convention Center, Exhibit Hall A
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 am - 05:00 pm</td>
<td>Hospitality Lounge</td>
<td>Convention Center, M101 A</td>
</tr>
<tr>
<td>08:30 am - 09:15 am</td>
<td>ADSA-SAD Business Meeting</td>
<td>Convention Center, 200 H</td>
</tr>
<tr>
<td>09:30 am - 10:30 am</td>
<td>ADSA-SAD Judging of Yearbooks, Scrapbooks, Annual Reports</td>
<td>Convention Center, 200 I</td>
</tr>
<tr>
<td>09:30 am - 10:30 am</td>
<td>ADSA-SAD Interviews for Outstanding Student and Advisor Awards</td>
<td>Convention Center, 200 J</td>
</tr>
<tr>
<td>09:30 am - 10:30 am</td>
<td>ADSA-SAD Activities Symposium</td>
<td>Convention Center, 200 H</td>
</tr>
<tr>
<td>09:30 am - 05:00 pm</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
</tr>
<tr>
<td>10:30 am - 12:30 pm</td>
<td>ARPAS Exam</td>
<td>Convention Center, 201 A</td>
</tr>
<tr>
<td>11:00 am - 04:15 pm</td>
<td>ADSA-SAD Undergraduate Paper Presentations</td>
<td>Hyatt Regency, Lake Calhoun</td>
</tr>
<tr>
<td>12:00 pm - 02:00 pm</td>
<td>ASAS Past Presidents’ Luncheon</td>
<td>Hilton Minneapolis, Rochester Room</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>ADSA Past Presidents’ Luncheon</td>
<td>Convention Center, 200 I</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>ACAN Annual Meeting</td>
<td>Hyatt Minneapolis, 200 A</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>Women &amp; Minority Issues in Animal Agriculture</td>
<td>Convention Center, 200 A</td>
</tr>
<tr>
<td>12:30 pm - 02:30 pm</td>
<td>ASAS Publications Committee Luncheon</td>
<td>Hyatt Regency, Cedar Lake</td>
</tr>
<tr>
<td>12:00 am - 03:00 pm</td>
<td>DISCOVER Steering Committee Meeting</td>
<td>Convention Center, 201 A</td>
</tr>
<tr>
<td>04:00 pm - 05:00 pm</td>
<td>Centennial Poster Reception</td>
<td>Exhibit Hall A</td>
</tr>
<tr>
<td>05:00 am - 07:00 pm</td>
<td>Informal Calf Gathering</td>
<td>Hilton Minneapolis, Salon B</td>
</tr>
<tr>
<td>05:00 am - 06:00 pm</td>
<td>ADSA Town Hall Meeting</td>
<td>Convention Center, 101 HI</td>
</tr>
<tr>
<td>05:00 pm - 07:00 pm</td>
<td>ASAS Award Winners Reception and Photo Session</td>
<td>Hyatt Regency, Nicollet D1, D2, D3</td>
</tr>
<tr>
<td>07:00 pm - 08:30 pm</td>
<td>ASAS Awards Program</td>
<td>Hyatt Regency, Nicollet Ballroom</td>
</tr>
<tr>
<td>07:00 pm</td>
<td>Retirement Reception for Ken Cummings &amp; Bill Chalupa</td>
<td>Hilton Minneapolis, Duluth Room</td>
</tr>
<tr>
<td>08:30 pm - 11:00 pm</td>
<td>Iowa State Social</td>
<td>Hyatt Regency, Greenway A-C</td>
</tr>
<tr>
<td>08:30 pm - 12:30 am</td>
<td>Dance Party with Johnny Holm Band</td>
<td>Hilton Minneapolis, Salons DEFG</td>
</tr>
</tbody>
</table>

**Tuesday, July 11**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>06:15 am</td>
<td>Fun Run at Loring Park</td>
<td>Meet in Hyatt Regency Lobby</td>
</tr>
<tr>
<td>06:30 am - 08:00 am</td>
<td>ADSA Dairy Foods Division Extension Breakfast</td>
<td>Hilton Minneapolis, Ramsey Room</td>
</tr>
<tr>
<td>06:30 am - 08:00 am</td>
<td>PSU Breakfast</td>
<td>Hyatt Regency, Greenway FG</td>
</tr>
<tr>
<td>06:30 am - 08:00 am</td>
<td>University of Illinois Breakfast</td>
<td>Hyatt Regency, Greenway HJ</td>
</tr>
<tr>
<td>06:30 am - 08:00 am</td>
<td>Virginia Tech Breakfast</td>
<td>Hilton Minneapolis, Rochester Room</td>
</tr>
<tr>
<td>07:00 am - 08:00 am</td>
<td>Kentucky Breakfast</td>
<td>Hyatt Regency, Skyway Suite AB</td>
</tr>
<tr>
<td>07:00 am - 08:00 am</td>
<td>ADSA Foundation Estate Planning Breakfast</td>
<td>Hilton Minneapolis, Directors Row 1</td>
</tr>
<tr>
<td>07:00 am - 03:30 pm</td>
<td>Registration Open</td>
<td>Convention Center, Mezzanine Level</td>
</tr>
<tr>
<td>07:30 am - 09:30 am</td>
<td>Poster Presentations</td>
<td>Convention Center, Exhibit Hall A</td>
</tr>
<tr>
<td>07:30 am - 05:00 pm</td>
<td>Commercial Exhibits &amp; ADSA-SAD Exhibits Open</td>
<td>Convention Center, Exhibit Hall A</td>
</tr>
<tr>
<td>07:30 am - 05:00 pm</td>
<td>Job Resource Center</td>
<td>Convention Center, 200 H</td>
</tr>
<tr>
<td>08:00 am - 05:00 pm</td>
<td>Hospitality Lounge</td>
<td>Convention Center</td>
</tr>
<tr>
<td>08:30 am - 09:30 am</td>
<td>ADSA-SAD Business Meeting - Election of Officers</td>
<td>Convention Center, 200 H</td>
</tr>
<tr>
<td>09:30 am - 05:00 pm</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
</tr>
<tr>
<td>09:30 am - 10:15 am</td>
<td>ADSA-SAD Student Career Symposium: Making the Most of a Job Fair</td>
<td>Convention Center, 200 H</td>
</tr>
<tr>
<td>10:30 am - 11:30 am</td>
<td>ADSA-SAD Job Fair</td>
<td>Convention Center, 200 A</td>
</tr>
<tr>
<td>11:30 am - 12:30 pm</td>
<td>ADSA Production Division Business Meeting</td>
<td>Convention Center, 200 DE</td>
</tr>
<tr>
<td>11:30 am - 12:30 pm</td>
<td>ADSA Dairy Foods Division Business Meeting</td>
<td>Convention Center, Seasons Room</td>
</tr>
<tr>
<td>11:45 am - 02:00 pm</td>
<td>ADSA-SAD Awards Luncheon</td>
<td>Convention Center, 200 J</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>NE ASAS/ADSA Business Meeting &amp; Awards Luncheon</td>
<td>Hilton Minneapolis, Board Room 2</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>ADSA DF Division Milk Proteins &amp; Enzyme Committee</td>
<td>Convention Center, 101 J</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>ARPAS Business Meeting</td>
<td>Hilton Minneapolis, Board Room 1</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>ADSA Dairy Foods Division Program Planning Lunch</td>
<td>Convention Center</td>
</tr>
<tr>
<td>12:30 pm - 02:00 pm</td>
<td>ASAS Division/Associate Editors Luncheon</td>
<td>Convention Center, 200 A</td>
</tr>
<tr>
<td>02:00 pm - 04:00 pm</td>
<td>ARPAS Exam</td>
<td>Convention Center, 200 A</td>
</tr>
</tbody>
</table>
02:00 pm - 03:30 pm  2006 Spouses’ Event  Brit’s Pub
02:00 pm - 05:30 pm  Southern Branch ADSA Symposium  Convention Center, 101 BC
& Business Meeting  Convention Center, 200 I
02:00 pm - 03:00 pm  ADSA-SAD Award & Club Photos  Convention Center, 200 H
02:30 pm - 03:30 pm  ADSA-SAD Committee Meeting - Old and New  Convention Center, M100 A
Officers & Advisors  Convention Center, 200 J
03:30 pm - 05:30 pm  ASAS JAS Forum (Division/Associate  Hilton Minneapolis, Duluth Room
Editors and Authors)  Hilton Minneapolis, Salons EFG
05:00 pm - 06:00 pm  Block & Bridle Club Advisors Meeting  Hilton Minneapolis, Duluth Room
05:00 pm - 06:30 pm  ADSA Award Donor Dinner  Hilton Minneapolis, Salon D
07:00 pm - 08:00 pm  ADSA Awards Program  Hilton Minneapolis, Salons EFG
08:00 pm  MSU Department of Animal Science
100th Anniversary

08:15 pm - 09:30 pm  2006 ADSA-ASAS Ice Cream Social
08:15 pm - 09:30 pm  ADSA Foundation Auction & Raffle

Wednesday, July 12

06:30 am - 08:00 am  Purdue University Breakfast  Hyatt Regency, Mirage Room
07:00 am - 03:00 pm  Registration Open  Convention Center, Mezzanine Level
07:30 am - 09:30 am  Poster Presentations  Convention Center, Exhibit Hall A
07:30 am - 05:00 pm  Job Resource Center  Convention Center, Exhibit Hall A
07:30 am - 05:00 pm  Commercial Exhibits Open  Convention Center, M101 A
08:00 am - 05:00 pm  Hospitality Lounge  Convention Center, 101 BC
09:30 am - 10:00 am  Joint ADSA-ASAS Business Meeting  Convention Center, 101A
10:00 am - 10:30 am  ADSA Business Meeting  Convention Center, 101 DE
10:00 am - 10:30 am  ASAS Business Meeting  Convention Center
10:30 am - 05:00 pm  Scientific Sessions  Hilton Minneapolis, Rochester Room
12:30 pm - 02:00 pm  ADSA Board of Directors Meeting  Convention Center, M100 DE
12:30 pm - 02:00 pm  ASAS Board of Directors Meeting  Hyatt Regency, Lake Superior A
02:00 pm - 04:00 pm  ARPAS Exam  Convention Center, 201 A
04:30 pm - 06:00 pm  2006 Closing/International Reception  Convention Center, Ballroom B
05:00 pm - 08:00 pm  Commercial Exhibits Dismantle  Convention Center, Exhibit Hall A
05:30 pm  University of Minnesota Farewell Reception  Hilton Minneapolis, Symphony III

Thursday, July 13

07:30 am - 09:30 am  ADSA-ASAS Joint Executive Committee Breakfast  Hyatt Regency, Lake Minnetonka
08:00 am - 10:00 am  Registration Open  Convention Center, Mezzanine Level
08:00 am - 12:00 pm  Scientific Sessions  Convention Center
Saturday, July 8

**SAD Tour: The Transition Management Facility in Emerald, WI**
_12:00 - 5:00 pm_
**Charter bus departs from DoubleTree Guest Suites**
Ticket Price: $11
The Transition Management Facility (TMF) is a unique education and research facility for training veterinary students, for providing continuing education of veterinarians and education programs for dairy professionals, and for conducting advanced clinical and applied research. A joint venture between the University of Minnesota College of Veterinary Medicine and the owners of Baldwin and Emerald Dairies in western Wisconsin, TMF houses approximately 400 cows through their dry period (the time from the end of lactation until the next calving) and through the two weeks after calving. The tour will also include a stop at a nearby cow operation. The facility is about one hour from Minneapolis. Please arrive in the hotel lobby 15 minutes prior to departure to board bus, and be sure to eat before you come!!

**SAD Undergraduate Evening Informal Mixer: Mall of America**
_6:00 - 10:00 pm_
**The Mall of America (Bloomington, MN)**
Transportation on your own. Meet in the lobby of the DoubleTree by 5:45 if you need a ride or if you have room for others. Pick up driving/Light Rail directions from the hotel concierge.
The Mall of America (MOA) has it all, including the honor of being the largest mall in the USA! MOA has more than 520 stores, 20 sit-down restaurants, 30 fast food restaurants, 36 specialty food stores, and 14 movie screens. Key attractions include The Park at MOA™, Underwater Adventures® Aquarium, LEGO® Imagination Center, Dinosaur Walk Museum, A.C.E.S. Flight Simulation, NASCAR Silicon Motor Speedway, Bloomingdale’s, Macy’s, Nordstrom, and Sears. Total store front footage is 4.3 miles! In fact, if a shopper spent 10 minutes browsing at every store, it would take them more than 86 hours to complete their visit to Mall of America! MOA is also accessible by the new Light Rail transportation system.

Sunday, July 9

**SAD Midday Mixer and Pizza Party**
_12:00 Noon_
**Convention Center, Seasons Room**
Ticket Price: no charge, but advance registration is required
Plan to join us for the first official event of the Student Affiliate Division meetings. The mixer is a great way to get some free lunch and get acquainted with other clubs who will be participating in the meetings. Registration is free, but required.

**Dairy Quiz Bowl**
_1:00 pm_
**Convention Center Rooms 200 HIJ**
The Dairy Quiz Bowl invites teams from all universities to participate in this year’s event. Seating test will be held immediately following the Midday Mixer and Pizza Party. Once teams are placed, competition will begin and continue throughout the afternoon. The top teams will move onto the final round, which will be held on Sunday evening at 5:00 pm. To enter your club’s team, go the meetings section of the ADSA-SAD web site at www.adsa.org/sad.asp/.
**SAD Informal Mixer SAD Picnic in the Park**

5:30 pm

Lake Harriet (approximately a 5-minute drive from DoubleTree)

Transportation on your own. Meet in the lobby of the DoubleTree if you need a ride or if you have room for others. 

Pick up driving directions from the hotel concierge.

**Ticket Price: $4.00**

From early June to Labor Day canoeists, bikers, hikers, picnickers, and other residents from throughout the region come to Lake Harriet to hear nightly free concerts at Lake Harriet Bandshell. There is something for everyone—music ranges from Folk, Blues, Jazz, Big Band to Light Rock, Funk, children’s music, and much more. Local bands, the Minneapolis Pops Orchestra, and many popular artists, perform the music. The distance around Lake Harriet is 2.99 miles for bikers and skaters and 2.75 miles for walkers and runners. The picnic begins immediately following the Dairy Quiz final round and includes dinner and sodas.

**Monday, July 10**

**Dance Party with the Johnny Holm Band**

8:30 pm - 12:30 am

Hilton Minneapolis (ADSA Headquarter Hotel) Salons DEFG

**Ticket Price: $5.00**

Rock the night away with old and new friends and the Johnny Holm Band. One of the most requested bands in the upper Midwest, the Johnny Holm Band dedicates each show to the fans, and they do the most of the entertaining. There’s never a dull moment when this band hits the stage and rocks, picks, and thunders along non-stop from the first song to the last laugh. Cash bar, free soda bar, and free snacks will be available. This event is open to all meeting attendees, including students, advisors, and anyone else looking for a fun evening. Primary sponsor: the University of Minnesota Gopher Dairy Club. Other sponsors: ADSA and ASAS.

**Tuesday, July 11**

**SAD Career Symposium: Student Job Fair**

9:30 - 11:30 am

Convention Center 200H, Exhibit Hall A

This two-part program will begin with a focused seminar that will prepare students for the Job Fair. Students will get useful tips on approaching individuals in their booths, starting a conversation, the right questions to ask, how to close the conversation, ways to follow up the meeting, and more. After this seminar, students will put their new skills to work at the Student Job Fair in the Exhibit Hall. More than 70 companies related to the dairy and animal science industry will be in the Exhibit Hall, so students will have ample opportunity to visit with company reps and inquire about careers and internships that may be available to undergraduate students. Students are encouraged to dress professionally (business casual or better) and bring several copies of their resumes.

**SAD Awards Luncheon**

11:45 - 2:00 pm

Convention Center Seasons Room

**Ticket Price: Professional: $29, Student: $20**

Plan to attend this year’s SAD Awards Luncheon. In honor of ADSA’s Centennial, several ADSA Pioneers will be invited to visit with the students about the changes in the association and the industry during their lifetime. And, back by popular demand: be entertained as the student officers go head to head with ADSA Board Members in a mini-dairy quiz bowl. See who really knows more about the history of ADSA and the dairy industry! There are sure to be a few surprises and plenty of laughs along the way. The afternoon will be capped with presentation of student awards and announcement of new SAD officers. Both students and professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.
## SAD Schedule of Events

### Saturday, July 8
- **12:00 pm - 05:00 pm** SAD Tour - Transition Management Facility in Emerald, WI  
  Meet in Doubletree Lobby
- **06:00 pm** SAD Informal Event - Mall of America  
  Meet in Doubletree Lobby

### Sunday, July 9
- **08:00 am - 05:00 pm** Student Dairy Clubs Set Up Exhibits  
  Convention Center, Exhibit Hall A
- **11:00 am - 12:00 pm** SAD Officers and Advisor Meeting  
  Convention Center, 200 J
- **12:00 pm - 01:00 pm** SAD Midday Mixer & Pizza Party  
  Convention Center, Seasons
- **01:00 pm - 05:00 pm** Dairy Quiz Bowl Seating/Preliminary Rounds  
  Convention Center, 200 H, 200 I
- **05:00 pm - 05:30 pm** Dairy Quiz Bowl Final Round  
  Convention Center, 200 I
- **05:30 pm** SAD Picnic at Lake Harriet  
  Pavilion near Band Shell
- **07:00 pm** ADSA Opening Session & Reception  
  Convention Center, Ballroom A

### Monday, July 10
- **07:00 am - 08:15 am** Student Dairy Clubs Set Up Exhibits  
  Convention Center, Exhibit Hall A
- **08:30 am - 09:15 am** SAD Business Meeting  
  Convention Center, 200 H
- **09:30 am - 10:30 am** SAD Judging of Yearbooks, Scrapbooks, Annual Reports  
  Convention Center, 200 J
- **09:30 am - 10:30 am** Interviews for Outstanding Student and Advisor Awards  
  Convention Center, 200 J
- **09:30 am - 10:30 am** SAD Activities Symposium  
  Convention Center, 200 H
- **11:00 am - 04:15 pm** SAD Undergraduate Paper Presentations  
  Convention Center, 200 H
- **08:30 pm - 12:30 am** Dance: Johnny Holm Band  
  Hilton Minneapolis, Salons DEFG

### Tuesday, July 11
- **08:30 am - 09:30 am** SAD Business Meeting - Election of Officers  
  Convention Center, 200 H
- **09:30 am - 10:15 am** SAD Career Symposium: Making the Most of a Job Fair  
  Convention Center, 200 H
- **10:30 am - 11:30 am** SAD Job Fair  
  Exhibit Hall, Convention Center
- **11:45 pm - 02:00 pm** SAD Awards Luncheon  
  Convention Center, Seasons
- **02:00 pm - 03:00 pm** SAD Award & Club Photos  
  Convention Center, 200 I
- **02:30 pm - 03:30 pm** SAD Committee Meeting - Old and New Officers & Advisors  
  Convention Center, 200 H
- **03:00 pm - 05:00 pm** Open to Attend Scientific Sessions  
  Convention Center, Exhibit Hall A
- **02:00 pm - 05:00 pm** Teardown SAD Exhibits  
  Hilton Minneapolis, Salons DEFG
- **07:00 pm - 10:00 pm** ADSA Awards Ceremony, Ice Cream Social and Fun Auction/Raffle  
  Hilton Minneapolis, Salons DEFG

### Wednesday, July 12
- **07:30 am - 05:00 pm** Scientific Posters, Sessions and Exhibits  
  Convention Center

### Thursday, July 13
- **07:30 am - 12:00 pm** Scientific Posters and Sessions  
  Convention Center
Downtown Minneapolis #1

Directions
To Downtown Minneapolis & Convention Center

FROM THE WEST (I-94): Take the 4th Street exit from I-94 and proceed to 2nd Ave. So. (Do NOT turn right onto 2nd Avenue North.) Turn right on 2nd Ave. So. and go eight blocks to Convention Center.

FROM THE SOUTH (I-35W): Follow downtown exit signs to the 11th Street exit and follow 11th Street to 2nd Ave. So. Turn left on 2nd Ave. and go one block to Convention Center.

FROM THE EAST (I-494): Take the 11th Street exit from I-494, follow 11th St. to 2nd Ave. So. Turn left on 2nd Ave. So. and go one block to Convention Center.

FROM THE NORTH (I-35W): Take the I-494 exit. Follow I-494 to the 11th St. exit (NOT 11th Avenue exit). Follow 11th Street to 2nd Ave. So. Turn left on 2nd Ave. and go one block to the Convention Center.

FROM THE AIRPORT MAIN TERMINAL: Take Hwy. 55 exit from the airport. Follow Hwy. 55 west to Minneapolis. This will become Hwy. 62 west. Follow Hwy. 62 to I-35W north. Take I-35W north to Minneapolis downtown exits. Then take the 11th Street exit, follow 11th St. So. to 2nd Ave. So. Turn left on 2nd Ave. So. and go one block to the Convention Center.
Thank you to the 2006 ADSA - ASAS Joint Meeting Sponsors!
(as of 5-30-2006)

PLATINUM

Elanco Animal Health
Pfizer Animal Health

GOLD

Ajinomoto Co., Inc. and Ajinomoto Heartland LLC
Alpharma
Diamond V Mills
European Association for Animal Production (EAAP)
Monsanto Company
USDA-NRI

SILVER

Arm & Hammer Animal Nutrition
Cargill Animal Nutrition
Schreiber Foods, Inc.
The Iams Company
West Central

BRONZE

Fort Dodge Animal Health
Lucta USA, Inc.
Milk Products, Inc.
National Pork Board
Nestle Purina PetCare Company
Novus International, Inc.
Prince Agri-Products, Inc.
Ralco Nutrition, Inc.
U.S. Dairy Forage Research Center (USDA-ARS)

DONORS

Alltech, Inc.
American Veal Association’s Veal Quality Assurance Program
Asociacion Mexicana de Produccion Animal A.C. (AMPA)
Animal Ag Alliance
BASF Plant Science/Ex Seed Genetics
Brewster Cheese
Intervet
Land O’Lakes Purina Feed LLC
Newsham Genetics
Pancosma USA, Inc.
Pig Improvement Company
Select Sires, Inc.
USDA, Agricultural Research Service, U.S. Sheep Experiment Station
Zinpro
Sunday, July 9

SYMPOSIA AND ORAL SESSIONS

Triennial Reproduction Symposium
Chair: George Seidel, Colorado State University
Sponsors: Select Sires, USDA-NRI
Lecture Hall 2

Symposium I -- The Follicle and Oocyte

Time Abstract #
8:00 AM 1 The dominant ovarian follicle. M. C. Lucy*, University of Missouri, Columbia.
8:45 AM 2 Oocyte cytoplasmic maturation: A key mediator of both oocyte and embryo developmental competence. A. Watson*1,2, 1The University of Western Ontario, London, Ontario, Canada, 2Children’s Health Research Institute, London, Ontario, Canada.
9:30 AM 3 Regulation of oocyte meiotic maturation. F. J. Richard*, Université Laval, Québec, QC, Canada.
10:15 AM Break

Casida Award for Graduate Education

10:45 AM Casida Award for Graduate Education.

The USDA-NRI in Reproduction -- Relevance to Production Agriculture

11:25 AM 5 A researcher’s perceptions of USDA funding in reproduction. J. J. Reeves*, Washington State University, Pullman.
11:45 AM Discussion
12:00 PM Lunch Break

Molecular Techniques and Statistics

1:10 PM 7 RNA interference: a new approach to in vivo study of gene function. R. V. Anthony* and J. D. Cantlon, Colorado State University, Fort Collins.
1:35 PM 8 Interpretation of microarray data: Trudging out of the abyss towards elucidation of biological significance. G. W. Smith*, G. J. M. Rosa1, P. M. Coussens1, R. Halgren1, A. C. O. Evans2, M. Mihm2, P. Lonergan2, and J. J. Ireland1, 1Michigan State University, East Lansing, 2University College Dublin, Dublin, Ireland, 3University of Glasgow, Glasgow, UK.
2:00 PM 9 Statistical power calculations. R. Lenth*, University of Iowa, Iowa City.
2:50 PM Break

Symposium II -- Reproductive Immunology

4:00 PM 12 Why is the fetal allograft not rejected? C. J. Davies*, Washington State University, Pullman.
4:45 PM 13 Seminal plasma signalling in the female reproductive tract. S. A. Robertson*, The University of Adelaide, Adelaide SA, Australia.
5:30 PM Adjourn
Dairy Foods Symposium
Advances in Cultured Foods
Chair: Clair Hicks, University of Kentucky
Sponsors: Brewster Cheese

200 D-E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors and Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>14</td>
<td>Historical overview of lactic cultures.</td>
<td>R. Sellars*, R. L. Sellars and Associates, Waukesha, WI.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>15</td>
<td>Non-starter lactic acid bacteria.</td>
<td>T. M. Cogan* and T. P. Beresford, Moorepark Food Research Centre Teagasc, Fermoy, Ireland.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td></td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td>1:00 PM</td>
<td>16</td>
<td>Insights from genomic studies on dairy lactic acid bacteria.</td>
<td>T. M. Cogan* and T. P. Beresford, Moorepark Food Research Centre Teagasc, Fermoy, Ireland.</td>
</tr>
<tr>
<td>1:40 PM</td>
<td>17</td>
<td>Engineering culture attributes.</td>
<td>J. Broadbent*, Utah State University, Logan.</td>
</tr>
<tr>
<td>2:20 PM</td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>2:30 PM</td>
<td>18</td>
<td>Use of bacteriophage peptides as vectors or blockers to receptors on</td>
<td>C. Hicks*, University of Kentucky, Lexington.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>19</td>
<td>Media development for selective enumeration of lactic acid bacteria.</td>
<td>N. P. Shah*, Victoria University, Melbourne, Victoria, Australia.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>20</td>
<td>Probiotics and health: Their potential role in modulation of immune</td>
<td>Z. Ustunol*, Michigan State University, East Lansing.</td>
</tr>
<tr>
<td>4:10 PM</td>
<td></td>
<td>Panel Discussion</td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td></td>
<td>Product tasting. (Cheddar type cheeses from around the world).</td>
<td></td>
</tr>
<tr>
<td>5:00 PM</td>
<td></td>
<td>Adjourn</td>
<td></td>
</tr>
</tbody>
</table>

Biosecurity Risk Assessment Workshop
200 B-C

Disease Risk Management Tools for Beef and Dairy Producer: Train the Trainer

The Center for Food Security and Public Health (CFSPN) at Iowa State University has prepared an extensive set of resources on disease risk management for beef and dairy producers. These materials have been developed by veterinarians but are designed to be used by livestock extension specialists to educate beef and dairy producers in group or one-on-one settings. This project was funded by the USDA Risk Management Agency and includes a train the trainer component to distribute the materials. Participants are being selected from each of the 50 states to attend this one day training session on Sunday, July 9. If you are interested in becoming a part of this session, please contact: Dr. Danelle Bickett-Weddle at dbweddle@iastate.edu or 515-294-1492 for registration information. Pre-registration is required as space and materials are limited.
Monday, July 10
POSTER PRESENTATIONS

Animal Health I
Exhibit Hall A

Abstract #

M1  Parturient steroids and labor duration associate with dystocia and stillbirth. J. L. Burton*, P. S. D. Weber1, A. A. Bush1, L. Neuder1, W. Raphael1, R. J. Erskine1, J. Carrier2, and S. Godden1, 1Michigan State University, East Lansing, 2University of Minnesota, St. Paul.

M2  The association between hoof lesions and milk production in Ontario dairy cows. G. Cramer*, K. Lissemore1, D. Kelton1, C. Guard2, and K. Leslie1, 1University of Guelph, Guelph, ON, Canada, 2Cornell University, Ithaca, NY.

M3  The association between hoof lesions and culling risk in Ontario dairy cows. G. Cramer*, K. Lissemore1, D. Kelton1, C. Guard2, and K. Leslie1, 1University of Guelph, Guelph, ON, Canada, 2Cornell University, Ithaca, NY.


M7  Use of producer-recorded health data in determining incidence risks and relationships between health events and culling. J. B. Cole1, A. H. Sanders1*, and J. S. Clay2, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, 2Dairy Records Management Systems, Raleigh, NC.

M8  Effects of nutrition, weaning age and incidence of subclinical mastitis on colostrum and milk quality of santa inês breed. S. Fernandes, E. R. Siqueira, P. F. Domingues, E. V. Z. Stasieniuk, L. S. Serrão, and R. M. S. Emediato*, São Paulo State University, Botucatu, São Paulo, Brazil


M10  Age-specific prevalence of Mycoplasma spp. in the nares of calves in the San Joaquin Valley, California. D. A. C. Bacon*, J. Reynolds1, R. R. Sakai2, and C. Collar2, University of California - Veterinary Teaching and Research Center, Tulare, University of California Cooperative Extension, Hanford.


M12  Bacteremia not detected during experimental coliform mastitis infection. J. Goff*, H. Springer2, D. Bannerman3, and M. Paape3, NADC, USDA-ARS, Ames, IA, Iowa State University, Ames, BARC, USDA-ARS, Beltsville, MD.


M14  The impact of colostrum supplement processing on serum IgG levels in Holstein neonates. K. J. Whitman*, J. R. Wenz1, F. B. Garry, A. N. Merritt3, A. N. Putnam3, and J. H. Crabb2, Colorado State University, Fort Collins, Immucell Corp, Portland, ME.

Beef Species
Exhibit Hall A

Abstract #

M15  Impact of feedlot morbidity on performance, carcass characteristics and profitability of New Mexico ranch to rail steers. J. W. Waggoner*, C. P. Mathis1, C. A. Loest1, J. E. Sawyer1, and F. T. McCollum, III1, New Mexico State University, Las Cruces, Texas A&M University, College Station, Texas A&M University, Amarillo.


Growth performances of Angus Plus calves grazing on pasture in Hawaii subtropical climates. J. Yang*1, M. DuPonte1, G. Fukumoto1, and R. Ferreira1, 1University of Hawaii, Honolulu, O‘Houlu Angus Plus LLC, Lihue, HI.

Age at first calving and the longevity of beef cows of different breeds. F. Szabo* and I. Dakay, University of Veszprem Georgikon Faculty of Agriculture, Keszthely, Hungary.


**Breeding and Genetics I**

Exhibit Hall A

Abstract #


Influence of the reproductive system on gestation length and birth weight of Nellore Cattle in the sub-tropical area of Bolivia. J. A. C. Pereira1, J. H. Landivar1, A. H. Brown, Jr.*2, Z. B. Johnson2, and D. W. Kellogg2, 1Gabriel Rene Moreno University, Bolivia, 2University of Arkansas, Fayetteville.

Synchronization effects on parameters for days open. M. T. Kuhn, J. L. Hutchison, and R. H. Miller*, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.

Methodology for prediction of bull fertility from field data. M. T. Kuhn* and J. L. Hutchison, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.

Comparison of Brown Swiss, Holstein and Brown Swiss x Holstein crosses for production, somatic cell score and days open. M. I. Phelps*1, C. D. Dechow1, A. L. Mosholder1, J. B. Cooper2, and G. W. Rogers2, 1The Pennsylvania State University, University Park, 2The University of Tennessee, Knoxville.

Heritability estimates of milk yield and electronically recorded daily body weight. J. K. Toshniwal*1, C. D. Dechow1, J. A. D. R. N. Appuhamy2, and B. G. Cassell2, 1The Pennsylvania State University, University Park, 2Virginia Polytechnic and State University, Blacksburg.

Genetic differences between Holstein maturity rates in the Netherlands and United States. H. D. Norman1, J. R. Wright*1, R. L. Powell1, P. M. VanRaden1, and G. de Jong2, 1Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, 2NRS, Arnhem, Netherlands.

Estimation of genetic parameters for maturity of lactation in Japanese Holsteins. Y. Masuda* and M. Suzuki, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan.

Genetic parameters for birth weight, dystocia, gestation length, and perinatal mortality in Holstein cattle. J. M. Johansson*1, P. J. Berger1, S. Tsuruta1, and I. Misztal2, 1Iowa State University, Ames, 2University of Georgia, Athens.

Phenotypic relationships between multivariate measures of lactation curve shape and somatic cell count in Italian Simmental cows. N. P. P. Maccioatta*, D. Vicario2, and A. Cappio-Borlini1, 1Università di Sassari, Sassari, Italy, 2ANAPRI, Udine, Italy.

Genetic variation of lactation gross energy efficiency and its association with a number of traits in Holstein dairy cattle. P. Zamani*, S. R. Miraei-Ashtiani2, A.-A. Naserian3, and A. Nik-Kahal3, 1Bia‘li University, Hamedan, Iran, 2University of Tehran, Tehran, Iran, 3Ferdowsi University, Mashhad, Iran.

Bayesian heritability estimates of monthly test day milk yields for Iranian Holsteins. H. Farhangfar*1 and H. Mehraban2, 1Birjand University, Birjand, Iran, 2Zabol University, Zabol, Iran.

Estimation of phenotypic and genetic trends for milk and fat yield traits in Khorasan province Holsteins of Iran by using a univariate model. H. Naemaxipour*1, H. Farhangfar1, H. Moravej2, and M. Rokoei1, 1Birjand University, Birjand, Iran, 2Tehran University, Tehran, Iran, 3Zabol University, Zabol, Iran.

Comparison of lactation and test day models for genetic evaluation of 305-day milk trait in Iranian Holstein heifers. H. Farhangfar* and H. Rezaee, Birjand University, Birjand, Iran.

Phenotypic study of lactation curve in Iranian Holsteins. H. Farhangfar* and H. Naemaxipour, Birjand University, Birjand, Iran.

Estimation of genetic trends for milk production traits in Iranian Holsteins. H. Farhangfar*, H. Naemaxipour, and M. R. Asghari, Birjand University, Birjand, Iran.
Forages and Pastures

Forage Quality

Exhibit Hall A

Abstract #

M39 Direct or sequential determination of ADF in legume forages. M. J. Marichal*, M. Carriquiry, and A. I. Trujillo, Facultad de Agronomía, Montevideo Uruguay.


M41 Ruminal dry matter, crude protein, neutral detergent fiber and acid detergent fiber degradation parameter kinetics of Agropyron taui, Agropyron trichophorum, and Bromus tomentellus. P. Shawrang1, A. Nikkhah*1, and A. A. Sadeghi1, 1Teheran University, Karaj, Iran, 2Science and Research Campus, Islamic Azad University, Tehran, Iran.

M42 Voluntary feed intake, rumen fermentation characteristics and nitrogen retention in Iranian Balouchi sheep fed halophyte forages. A. Riasi*1, M. Danesh Mesgaran2, H. Nassiri Moghaddam2, and A. Heravi Moussavi2, 1University of Birjand, Birjand, Khorasan, Iran, 2Ferdowsi University of Mashad, Mashad, Khorasan, Iran.

M43 Effective neutral detergent fiber supply to dairy grazing cows by alfalfa pasture. R. Gregoret*1, M. Gallardo1, P. Ludueña2, and M. Cagnolo2, 1INTA Rafaela Experimental Station, Rafaela, Santa Fe, Argentina, 2Villa Maria National University, Villa Maria, Cordoba, Argentina.

M44 Forage conservation effects on conjugated linoleic acid and trans-C18:1 production by rumen microbes when incubated with soybean oil and fish oil in continuous culture. R. Buckles, A. AbuGhazaleh*, and G. Appar, Southern Illinois University, Carbondale.

M45 The effect of fatty acid source and source on trans-C18:1 and conjugated linoleic acid production by ruminal microbes in batch culture. R. Buckles, A. AbuGhazaleh*, and G. Appar, Southern Illinois University, Carbondale.

M46 Using the Synchrotron (SRFTIRM) to Reveal Molecular Structural-Chemical Differences between Two Types of Forages Seeds -Winterfat (Krascheninnikovia lanata). P. Yu*, R. Wang, and Y. Bai, University of Saskatchewan, Saskatoon, Canada.


M48 In vitro ruminal degradation of anthocyanidin-containing alfalfa transformed with the maize Lc regulatory gene. Y. Wang*1, T. A. McAllister1, and M. Y. Gruber2, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Agriculture and Agri-Food Canada Research Centre, Saskatoon, Saskatchewan, Canada.

M49 Antitherbivory compounds on the leaf surface of intact and resprouted tarbush. R. Estell*1, E. Fredrickson1, and M. Remmenga1, 1USDA-ARS Jornada Experimental Range, Las Cruces, NM, 2New Mexico State University, Las Cruces.


M51 Effect of nitrogen-fertilizer application on chemical compositions and in vitro rumen digestibility of corn stovers. Q. Meng*1, 2 and G. Yan*1, 2, 1State Key Laboratory of Animal Nutrition, Beijing, China, 2Beef Cattle Research Center and College of Animal Science & Technology, China Agricultural University, Beijing, China.

M52 In vitro evaluation of various energy supplements for tropical and temperate forages. R. D. L. Pacheco*1, D. D. Millen1, N. DiLorenzo2, and A. DiCostanzo1, 1FMVZ/UNESP, Botucatu, Sao Paulo, Brazil, 2University of Minnesota, St. Paul.


M54 Effect of Lactobacillus buchneri applied to alfalfa hay treated at high moisture. G. E. Higginbotham*1, S. Mueller1, and R. Kuber2, 1University of California Cooperative Extension, Fresno, 2Conner Marketing, Clavis, CA.

M55 Effect of fibrolytic enzymes or ammonia treatment on the nutritive value of 6-wk and 8-wk regrowths of guineagrass hay. D. B. Dean*1, 2, A. T. Adesogan1, E. Valencia1, and N. Krueger1, 1University of Florida, Gainesville, 2Universidad del Zulia, Maracaibo, ZU, Venezuela, 1Universidad de Puerto Rico, Mayaguez, PR.
Goat Species
Feeding Management of Goats
Exhibit Hall A

Abstract #


M57 Water balance in goats under feed restriction. K. T. Resende*, I. A. M. A. Teixeira, J. M. Pereira Filho, and P. J. Murray, Universidade Estadual Paulista/FCAV, Jaboticabal, SP, Brazil, Universidade Federal de Campina Grande, Patos, PB, Brazil, School of Animal Studies, University of Queensland, Gatton, Qld, Australia, FAPESP, Sao Paulo, SP, Brazil.


M59 Effects of feeding method, diet nutritive value and physical form, and genotype on feed intake, feeding behavior, and growth performance by meat goats. T. Gipson*, A. Goetsch, G. Detweiler, and T. Sahlu, American Institute for Goat Research, Langston University, Langston, OK.


M62 Relationship between energy expenditure and heart rate in pregnant Boer x Spanish does with different litter size. R. Puchala*, I. Tovar-Luna, A. L. Goetsch, and T. Sahlu, E (Kika) de la Garza American Institute for Goat Research, Langston, OK.


Growth and Development
Exhibit Hall A

Abstract #

M67 Differences in adipogenesis between bovine intramuscular and subcutaneous preadipocytes are not related to expression of PPARγ or secretion of PGI2. G. Ortiz-Colón*, A. C. Grant, M. E. Doumit, and D. D. Buskirk, Michigan State University, East Lansing.


M70 Use of RNA interference (RNAi) to silence IGFBP-3 and IGFBP-5 expression in porcine embryonic myogenic cell cultures. X. Gang, M. R. Hathaway, M. E. White, I. I. Kamanga-Sollo, M. S. Pampusch, and W. R. Dayton*, University of Minnesota, St. Paul.

M71 Effects of clenbuterol and serum on the activation of mitogen-activated protein kinase in cultured bovine satellite cells. J. M. Scheffler* and S. J. Jones, University of Nebraska, Lincoln.
Production of a polyclonal antibody against unprocessed chicken myostatin and the effects of in-ovo administration of the antibody on post-hatch broiler growth and muscle mass. N. K. Bobbili*, Y. K. Lee, and Y. S. Kim, University of Hawaii, Honolulu.

Maternal immunization against myostatin enhances post-hatch broiler growth and muscle mass. Y. S. Kim1, Y. C. Huh2, and C. J. Kim2*, 1University of Hawaii, Honolulu, 2Changnam National University, Daejeon, Korea.

Effects of colostrum (C) feeding and dexamethasone (Dexa) treatment on sodium-dependent glucose co-transporter-1 (SGLT1) in the small intestine of neonatal calves. H. M. Hammon* and U. Schoenhusen, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.


Opioid agonist modulation of long term food intake in sheep. F. Y. Obese1, B. K. Whitlock1, F. C. Buonorno2, and J. L. Sartina*, 1Auburn University, Auburn, AL, 2Monsanto Co, St Louis, MO.

Effects of feeding ad-lib fresh milk or milk replacer during nursing and added protein at pre-puberty period to Holstein heifers on growth rates and production during first lactation. U. Moallem*, D. Werner1, H. Lehrer1, M. Katz1, L. Livshitz1, I. Bruckental1, and A. Shamay1*, 1Institute of Animal Science, ARO, Israel, 2Extension Service, Ministry of Agriculture, Israel.

Performance of calves fed whole milk and milk replacer in different sequences. M. C. Scott*, R. E. James, and M. L. McGilliard, Virginia Polytechnic Institute and State University, Blacksburg.

Development of specific breeds equations to estimate chemical empty body composition using the 9-10-11th rib cut composition. A. Berndt1, G. M. da Cruz1, G. F. Alleoni1, M. M. Alencar1, and D. P. D. Lanna*, 1APTA/SP, Andradina, São Paulo, Brazil, 2ESALQ/USP, Piracicaba, São Paulo, Brazil, 3EMBRAPA/CPSe, São Carlos, São Paulo, Brazil, 4IZ/SP, Nova Odessa, São Paulo, Brazil.


Fatty acid profile in selected rodent and fish species from Colombia. L. L. Betancourt*1 and G. J. Díaz1, 1Universidad de La Salle, Facultad de Zootecnia, Bogotá, Distrito Capital, Colombia, 2Universidad Nacional de Colombia, Facultad de Medicina Veterinaria y Zootecnia, Bogotá, Distrito Capital, Colombia.

Fatty acid composition in bovine and buffalo beef. L. Betancourt*1, C. Bustamante1, and G. Díaz1, 1La Salle University, Bogotá Distrito Capital, Colombia, 2National of Colombia, Bogotá, Distrito capital, Colombia.

Prediction of melting point of intramuscular fat of Japanese Black cattle by image analysis method using high resolution digital image. M. Oishi*1, S. Fukushima1, S. Hidaka1, H. Tsukuda1, and K. Kuchida1, 1Obihiro Univ. of AVM, Obihiro-shi, Japan, 2Livestock Improv. Assoc., Makubetsu-cho, Japan.


Effect of suckling regimen on intramuscular collagen properties of Comisana lambs. G. Maiorano*, A. Ciarlariello1, C. Cavone1, R. J. McCormick2, and A. Manchisi1, 1University of Molise, Campobasso, Italy, 2University of Wyoming, Laramie.

Image analysis of marbling in pork rib eye and prediction of crude fat contents. K. Kuchida1, M. Oishi1, Y. Kuwabar2, M. Hanada1, and S. Hidaka1, 1Obihiro University of A&VM, Obihiro, Hokkaido, Japan, 2Fuji Nojo Service, Fujinomiya, Shizuoka, Japan.

Effect of type of pasture and time of supplementation on fatty acid composition of grazing beef heifers. G. J. Depetris*1, E. Pavan1, F. J. Santini2, E. L. Villarreal1, and T. P. Garcia1, 1EEA INTA Balcarce- Fac Cs. Agrarias, UNMdP, Balcarce, Buenos Aires, Argentina, 2Inst. de Tecnologia de Alimentos, INTA Castelar, Morón, Buenos Aires, Argentina.

Effect of type of pasture and time of supplementation on meat quality traits of grazing beef heifers. G. J. Depetris*1, E. Pavan1, F. J. Santini2, E. L. Villarreal1, G. Grigioni1, M. Irurueta1, and F. Carduza2, 1EEA INTA Balcarce- Fac Cs. Agrarias, UNMdP, Balcarce, Buenos Aires, Argentina, 2Inst. de Tecnologia de Alimentos, INTA Castelar, Morón, Buenos Aires, Argentina.

Meat Science and Muscle Biology
Exhibit Hall A

Abstract #

M83 Fatty acid profile in selected rodent and fish species from Colombia. L. L. Betancourt*1 and G. J. Díaz1, 1Universidad de La Salle, Facultad de Zootecnia, Bogotá, Distrito Capital, Colombia, 2Universidad Nacional de Colombia, Facultad de Medicina Veterinaria y Zootecnia, Bogotá, Distrito Capital, Colombia.

M84 Fatty acid composition in bovine and buffalo beef. L. Betancourt*1, C. Bustamante1, and G. Díaz1, 1La Salle University, Bogotá Distrito Capital, Colombia, 2National of Colombia, Bogotá, Distrito capital, Colombia.

M85 Prediction of melting point of intramuscular fat of Japanese Black cattle by image analysis method using high resolution digital image. M. Oishi*1, S. Fukushima1, S. Hidaka1, H. Tsukuda1, and K. Kuchida1, 1Obihiro Univ. of AVM, Obihiro-shi, Japan, 2Livestock Improv. Assoc., Makubetsu-cho, Japan.


M87 Effect of suckling regimen on intramuscular collagen properties of Comisana lambs. G. Maiorano*, A. Ciarlariello1, C. Cavone1, R. J. McCormick2, and A. Manchisi1, 1University of Molise, Campobasso, Italy, 2University of Wyoming, Laramie.

M88 Image analysis of marbling in pork rib eye and prediction of crude fat contents. K. Kuchida1, M. Oishi1, Y. Kuwabar2, M. Hanada1, and S. Hidaka1, 1Obihiro University of A&VM, Obihiro, Hokkaido, Japan, 2Fuji Nojo Service, Fujinomiya, Shizuoka, Japan.

M89 Effect of type of pasture and time of supplementation on fatty acid composition of grazing beef heifers. G. J. Depetris*1, E. Pavan1, F. J. Santini2, E. L. Villarreal1, and T. P. Garcia1, 1EEA INTA Balcarce- Fac Cs. Agrarias, UNMdP, Balcarce, Buenos Aires, Argentina, 2Inst. de Tecnologia de Alimentos, INTA Castelar, Morón, Buenos Aires, Argentina.

M90 Effect of type of pasture and time of supplementation on meat quality traits of grazing beef heifers. G. J. Depetris*1, E. Pavan1, F. J. Santini2, E. L. Villarreal1, G. Grigioni1, M. Irurueta1, and F. Carduza2, 1EEA INTA Balcarce- Fac Cs. Agrarias, UNMdP, Balcarce, Buenos Aires, Argentina, 2Inst. de Tecnologia de Alimentos, INTA Castelar, Morón, Buenos Aires, Argentina.
Field pea inclusion in high grain diets for beef heifers improves beef tenderness without altering performance. K. R. Maddock Carlin*, G. P. Lardy†, R. J. Maddock‡, B. Ilse§, and V. L. Anderson¶, ¹North Dakota State University, Fargo, ²South Dakota State University, Brookings, ³Carrington Research Extension Center, Carrington.


Changes in caspase activities post mortem and their relationships to shear force in porcine longissimus muscle. C. M. Kemp*, R. G. Bardsley, and T. Parr, University of Nottingham, Nottingham, Nottinghamshire, UK.


Effect of different breeds on fatty acid composition and cla concentration of beef cattle. A. A. Souza, L. Suguisawa*, H. N. Oliveira, and A. C. Silveira, São Paulo State University, São Paulo, Brazil.


Effect of substitution of concentrate by sweet potato (Ipomoea batatas L.) meal in carcass traits of finishing pigs. O. E. Moron*, S. Pietrosemoli, A. Paez, C. Chirinos, and A. Marrugo, Facultad de Agronomía. La Universidad del Zulia, Maracaibo, Zulia, Venezuela.

Nonruminant Nutrition
Dietary Influences in Nursery Pigs
Exhibit Hall A

Validation of the NCCC-42 vitamin-trace mineral premix in starter pigs. T. D. Crenshaw*, M. J. Azain2, G. H. Hill3, P. S. Miller4, and NCCC-42 Swine Nutrition Committee5, ¹University of Wisconsin, Madison, ²University of Georgia, Athens, ³Michigan State University, East Lansing, ⁴University of Nebraska, Lincoln.

True phosphorus digestibility and the gastrointestinal endogenous P outputs associated with brown rice in weanling pigs. H. Yang1, Y. L. Yin*1,2, T. J. Li1, R. L. Huang1, and M. Z. Fan1, ¹The Chinese Academy of Sciences, Changsha, Hunan Province, China, ²University of Guelph, Ontario, Canada.

True phosphorus digestibility and the endogenous phosphorus outputs in diets for weaned pigs determined by the substitution method. Z. R. Wang1, L. Liu1, X. J. Yang2, T. C. Rideout1, C. Yang2, Y. L. Yin1,2, T. Archbold1, and M. Z. Fan*2, ¹Xinjiang Agricultural University, Urumqi, Xinjiang, China, ²Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China, ¹University of Guelph, Ontario, Canada.


Evaluation of plasma protein replacement strategies in complex and semi-complex phase 1 and 2 diets, followed by either high or low soybean meal subsequent nursery diets. G. Willis*, P. Wilcock1, and B. Richert2, ¹Primary Nutrition, Dundee, IL, ‡Purdue University, West Lafayette, IN.


The evaluation of several protein sources on amino acids digestibility in early-weaned pigs. B. J. Min*, J. H. Cho1, Y. J. Chen1, H. J. Kim1, J. S. You1, I. H. Kim1, S. S. Lee1, and W. T. Cho2, ¹Dankook University, Cheonan, Chungnam, Korea, ²Genebiotech Co. Ltd., Gungju, Chungnam, Korea.

The effects of fermented soy protein in simple or complex diet on growth performance and amino acids digestibility in weaned pigs. B. J. Min*, J. H. Cho1, Y. J. Chen1, H. J. Kim1, J. S. You1, I. H. Kim1, S. S. Lee1, and W. T. Cho2, ¹Dankook University, Cheonan, Chungnam, Korea, ²Genebiotech Co. Ltd., Gungju, Chungnam, Korea.


Lysine requirement of gilts following a protein restriction from 4 to 8 weeks of age. C. L. Collins1,3, S. X. Fu2, R. Hinson2, B. J. Leury3, B. G. Tatham1, G. L. Allee1, and F. R. Dunshea*1,3, ¹Department of Primary Industries, Werribee, Victoria, Australia, ²University of Missouri, Columbia, ³University of Melbourne, Parkville, Victoria, Australia.
Monday, JULY 10, 2006 POSTER SESSIONS

Dietary lysine needs of a lean, late maturing strain of pigs. T. R. Lutz, R. C. Clayton, and T. S. Stahly*, Iowa State University, Ames.

Effect of dietary electrolyte balance (dEB) and source in high synthetic amino acid nursery diets. A. M. Gaines1, B. W. Ratiff1, B. Hinson*1, G. L. Allee1, and J. L. Usty1, 1University of Missouri, Columbia, 2Ajinomoto Heartland LLC, Chicago, IL.

Efficacy of methionine hydroxy analog free acid relative to DL-methionine in growing pigs. F. O. Opapeju*1, C. M. Nyachoti1, M. Rademacher2, and G. H. Crow1, 1University of Manitoba, Winnipeg, MB, Canada, 2Degussa AG, 63457 Hanau-Wolfgang, Germany.


Effect of probiotics supplementation on growth performance and tissue integrity in weanling piglets. F. G. Yin1, X. Zhang1, and E. Roura2, 1Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, P.R. China, 2Texas A&M University, College Station.

The use of an enhanced milky flavor but not of standard flavors in feed improves growth of pigs at weaning compared to a non-flavored control feed. E. Roura*1, L. Levroux2, D. Solà-Oriol3, and D. Torrallardona3, 1Lucta SA, Barcelona, Spain, 2Vall Companys, Lleida, Spain, 3IRTA, Centre Mas Bové, Reus, Spain.

The use of an enhanced milky flavor but not of standard flavors in feed improves growth of pigs at weaning compared to a non-flavored control feed. E. Roura*1, L. Levroux2, D. Solà-Oriol3, and D. Torrallardona3, 1Lucta SA, Barcelona, Spain, 2Vall Companys, Lleida, Spain, 3IRTA, Centre Mas Bové, Reus, Spain.

Effects of dietary delta-aminolevulinic acid and chitooligosaccharide on growth performance, nutrient digestibility and hematological characteristics in weanling pigs. Y. J. Chen*1, B. J. Min1, J. H. Cho1, H. J. Kim1, J. S. Yoo1, J. D. Kim1, D. K. Kang1, H. R. Kim1, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2Pukyong Busan, Korea, 3CJ Feed Co., Incheon, Korea.

Dietary supplementation with the Chinese herb improves growth performance and tissue integrity in weanling piglets. F. G. Yin1, X. F. Kong1, Y. L. Yin*1, H. J. Liu1, Y. P. Liao1, and G. Y. Wu1,2, 1Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, P.R. China, 2Texas A&M University, College Station.

Physiology and Endocrinology

Estrous Synchronization

Exhibit Hall A

Abstract #


Post-AI interventions in lactating dairy cattle. II. Conception rates and pregnancy survival in response to GnRH, hCG, and exogenous progesterone (CIDR). J. S. Stevenson*1, D. E. Tenhouse1, M. A. Portaluppi1, D. R. Eborn1, S. Kacuba1, and J. M. DeJarnette1, 1Kansas State University, Manhattan, 2Select Sires, Plain City, OH.

M130  Effects of feeding palm oil fatty acids on milk production and composition and follicle size in early lactating cows. A. Heravi Moussavi* and M. Danesh Mesgaran, Center of Ferdowsi University of Mashhad, Mashhad, Iran.

M131  Effect of timing of the second GnRH injection of a timed AI protocol on fertility of lactating holstein cows after first postpartum and Resynch AI services. R. A. Sterry*1, P. W. Jardou2, B. Ryzebol1, and P. M. Fricke1, 1University of Wisconsin, Madison, 2West Central, Ralston, IA, 3Ryzebol Dairy, Bailey, MI.

M132  Characterization of follicular dynamics, timing of estrus, and response to GnRH and PG in replacement beef heifers after presynchronization with a 14-day CIDR. D. J. Schafer*, D. C. Busch, M. F. Smith, and D. J. Patterson, University of Missouri, Columbia.

M133  Factors affecting synchronization and conception rate (CR) after the Ovsynch protocol in lactating dairy cows. K. N. Galvao* and J. E. P. Santos, University of California Davis, Tulare.

M134  Conception rates after altered timing of AI associated with the CO-Synch + CIDR protocol. C. A. Dobbins*, D. E. Tenhouse1, and D. R.李born1, K. R. Harmany2, S. K. Johnson1, and J. S. Stevenson1, 1Kansas State University, Manhattan, 2Agricultural Research Center, Hays, KS, 3Northwest Area Extension Office, Colby, KS.


M136  Serum progesterone concentrations in ovariectomized cows bearing new or previously used CIDR devices with or without autoclaving. J. F. Zuluaga* and G. L. Williams, Texas A&M University Agricultural Research Station, Beeville.

M137  Induction of a new follicular wave in holstein heifers with persistent follicles, synchronized with norgestomet. E. Garcia*1, J. Sanchez2, J. Peralta1, J. Cordero1, O. Montañez1, P. Molina1, and R. Avila1, 1Universidad Autónoma de Yucatán, Mérida, Yucatán, Mexico, 2Especialidad de Ganadería Colegio de Postgraduados, Texcoco, Mexico.

M138  The use of a progesterone releasing device (CIDR), with GnRH and prostaglandin F2α (PGF), for a fixed-time artificial insemination in beef heifers. J. M. Howard1, D. G. Falk1, K. G. Carnahan1, J. C. Dalton2, R. C. Chebe1, T. C. Blair1, and A. Ahmadzadeh*1, 1University of Idaho, Moscow, 2University of Idaho, Caldwell.


M140  Conception rates at ET in lactating dairy recipients after estrous or ovulation synchronization. D. T. G. Jardou1, R. M. Santos1, D. G. B. Denimetro1, C. A. Rodrigues2, and J. L. L. Vasconcelos*, 1FMVZ-UNESP, Botucatu, SP, Brazil, 2Clinica Veterinaria Sanvet, Sao Carlos, SP, Brazil.


M142  The first ovulation of dominant follicle within three weeks postpartum closely relates to metabolic status and peak milk yield in high-producing dairy cows. A. Miyamoto*, M. Kataoka, Y. Masuda, C. Kawashima, E. Kaneko, N. Matsunaga, M. Matsui, M. Ishii, K. Kida, Y.-I. Miyake, and M. Suzuki, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan.


M144  Effect of source of supplemental Se on uterine health and embryo quality in high-producing dairy cows. R. L. A. Cerri*, H. M. Rutigliano1, F. S. Lima1, D. S. Brito1, J. Hilleger1, W. W. Thatcher1, and J. E. P. Santos1, 1University of California Davis, Tulare, 2University of Florida, Gainesville.

Production, Management and the Environment I

Exhibit Hall A

Abstract #

M145  Postruminal survivability of Fusarium graminearum in infected barley kernels. Y. Wang*1, D. L. McLaren2, G. D. Inglis1, S. L. Scott2, T. K. Turkington1, and T. A. McAllister1, 1Agriculture and Agri-Food Canada Research Centre, Lethbridge, Alberta, Canada, 2Agriculture and Agri-Food Canada Research Centre, Brandon, Manitoba, Canada.

M146  Response of bovine lateral saphenous vein to increasing concentrations of lysergic acid and ergovaline. J. L. Klotz*1, B. C. Arrington2, L. P. Bush2, and J. R. Strickland1, 1USDA-ARS, FAPRU, Lexington, KY, 2University of Kentucky, Lexington.
Ruminant Nutrition
Fat Feeding, Metabolism, & Composition
Exhibit Hall A

Abstract #


M148 Effect of pulse grains on feedlot performance of newly weaned steers. V. L. Anderson*1 and J. P. Schoonmaker2, 1North Dakota State University, Carrington, 2Land O’ Lakes Inc., Madison, WI.

M149 Effect of using a sheath protector at time of insemination on the pregnancy rate of beef cattle synchronized with CIDRs. W. A. Greene and M. L. Borger*, The Ohio State University, Wooster.

M150 Intake and performance of beef steers with ad-libitum access to a balanced ration or the same ingredients of the balanced diet but delivered in separated bunks. J. Arroquy1,2, J. Saravia1, A. Fumagalli1,3, F. Moretto1, A. Lopez1, and C. Lopez3, 1Instituto Nacional de Tecnología Agropecuaria, EEA-Santiago del Estero, Santiago del Estero, Argentina, 2Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina, 3Universidad Nacional de Santiago del Estero, Santiago del Estero, Argentina.


M152 Relationship of two measures of disposition and gain performance of steers. R. L. Weaber and F. E. Creason*, University of Missouri, Columbia.

M153 Effect of a mineral mix containing Tasco® meal on performance and reproduction in mature beef cows. J. E. Stegner*, 1B. Laudermilch1, W. D. Whittier1, R. Kasimanickam1, D. Colling2, and J. B. Hall1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Acadian Agritech, Dartmouth, NS, Canada.

M154 Relationships between endocrine status, temperament, growth and carcass traits in replacement beef heifers supplemented with dietary fat. A. R. Dos Santos*1,2, S. T. Willard1, R. C. Vann2, and B. Macoon2, 1Mississippi State University, Starkville, 2Brown Loam Experiment Station, Raymond, MS.

M155 Crop-livestock production system for fattening lambs under desert farming. N. Eweedah*, Faculty of Agricultre, Kafr El-Sheikh, Egypt.

M156 Predicting fineness of instrument-classed wool lines using an Optical-based Fibre Diameter Analyser (OFDA2000). C. J. Lupton and F. A. Pfeiffer*, Texas Agricultural Experiment Station, San Angelo, TX.

M157 Twin rate influences milk yield in Sarda dairy sheep in organic and conventional farms. G. Canu1, C. Dimaruo2, A. Natale1, C. Patta1, and G. Pulina2*, 1Istituto Zooprofilattico Sperimentale per la Sardegna, Sassari, Italy, 2Università di Sassari, Sassari, Italy, 3Associazione Regionale Allevatori della Sardegna, Cagliari, Italy.

M158 The effect of two management systems of dairy ewes on milk production. S. A. Maestá, E. R. Siqueira, M. M. Stradiotto, C. Cavone1,1, R. J. McCormick2, and A. Manchisi1, 1Università di Sassari, Sassari, Italy, 2University of Molise, Campobasso, Italy.

M159 Effect of suckling management on skeletal development and productive performance of Comisana lambs. A. Ciarlariello1, G. Maiorano*, C. Cavone1, R. J. McCormick2, and A. Manchisi1, 1University of Molise, Campobasso, Italy, 2University of Wyoming, Laramie.


M161 Effects of age, location, and nutrition on body weight, fiber production, and fiber quality characteristics of penned alpaca males. C. J. Lupton1, R. P. Elvestad2, F. A. Pfeiffer*, and K. MacKinnon2, 1Texas Agricultural Experiment Station, San Angelo, TX, 2Natural Fibre Centre & Testing Laboratory, Olds, Alberta, Canada.

M162 Gestation length in Alaskan reindeer. M. P. Shipka* and J. E. Rowell, University of Alaska Fairbanks, Fairbanks, AK.

M163 The diversity of bacterial community in the gut differs between different hatches of broiler chicks. G. W. Tannock1, S. Musa1, K. Munro1, and V. Ravindran*, 1University of Otago, Dunedin, New Zealand, 2Monogastric Research Centre, Massey University, Palmerston North, New Zealand.
Lactation response of cows to intravenous infusion of conjugated linoleic acids. R. Gervais* and P. Y. Chouinard, Université Laval, Québec, Québec, Canada.


Is OmniGen-AF capable of augmenting markers of immune health when blended into a nutritional block? N. Forsberg*, Y. Wang, and S. Puntenney, Oregon State University, Corvallis.

Effect of feeding blends of feedstuffs naturally contaminated with Fusarium mycotoxins on performance, metabolism and immunological parameters of dairy cattle. S. Korostelova* and T. Smith, University of Guelph, Guelph, Ontario, Canada.

Effect of feeding whole soybeans on hepatic gene expression in lactating dairy cows. J. D. Sampson*, R. P. Rhoads1, R. J. Tempelman2, S. S. Sipkovsky3, P. M. Coussens2, M. C. Lucy1, J. N. Spain1, and D. E. Spiers1, University of Arkansas, Fayetteville, 2University of Kentucky, Lexington, 3University of Arkansas, Little Rock.

Effects of feeding adsorbents on lactating dairy cows hematology and milk yield during summer. F. Abeni, L. Migliorati, F. Calza, and G. Pirlo*, CRA Istituto Sperimentale per la Zootecnia, Cremona, Italy.

Effects of dietary antioxidant plant extracts on udder health and milk quality. T. Doria*, G. Sara, M. Marina, and B. Valerio, University of Milan, Milan, Italy.

Effect of feeding whole soybeans on thermal balance and fatty acid profiles on early lactation cows during heat stress. J. D. Sampson, D. E. Spiers, and J. N. Spain*, University of Missouri, Columbia.


Effect of rumen-protected Ca salts of conjugated linoleic acid (CLA) and previous rate of gain on growth performance, immune function, and carcass characteristics of feedlot cattle. H. Flórez-Díaz*, E. B. Kegley1, G. F. Erf1, D. L. Kreider1, K. P. Coffey1, J. K. Apple1, and N. D. Luchini2, 1University of Arkansas, Fayetteville, 2University of Missouri, Columbia.

Influence of rate of growth and rumen-protected Ca salts of conjugated linoleic acid (CLA) on growth performance, immune function, and lipid metabolism of growing cattle. H. Flórez-Díaz*, E. B. Kegley1, G. F. Erf1, D. L. Kreider1, K. P. Coffey1, N. D. Luchini2, and S. L. Krumpelman1, 1University of Arkansas, Fayetteville, 2University of Missouri, Columbia.

Maternal nutrition effects on lipogenic enzyme messenger RNA in adipose tissue of suckling calves. C. M. Murrieta*, S. L. Lake2, E. J. Scholljegerdes3, B. W. Hess1, and D. C. Rule1, University of Wyoming, Laramie, 2University of Florida, Gainesville, 3Purdue University, West Lafayette, IN.

Effects of feeding whole soybeans on hepatic gene expression in lactating dairy cows. J. D. Sampson*, R. P. Rhoads1, R. J. Tempelman2, S. S. Sipkovsky3, P. M. Coussens2, M. C. Lucy1, J. N. Spain1, and D. E. Spiers1, University of Arkansas, Fayetteville, 2University of Kentucky, Lexington, 3University of Arkansas, Little Rock.

Effects of feeding blends of feedstuffs naturally contaminated with Fusarium mycotoxins on performance, metabolism and immunological parameters of dairy cattle. S. Korostelova* and T. Smith, University of Guelph, Guelph, Ontario, Canada.

Effect of feeding whole soybeans on hepatic gene expression in lactating dairy cows. J. D. Sampson*, R. P. Rhoads1, R. J. Tempelman2, S. S. Sipkovsky3, P. M. Coussens2, M. C. Lucy1, J. N. Spain1, and D. E. Spiers1, University of Arkansas, Fayetteville, 2University of Kentucky, Lexington, 3University of Arkansas, Little Rock.

Is OmniGen-AF capable of augmenting markers of immune health when blended into a nutritional block? N. Forsberg*, Y. Wang, and S. Puntenney, Oregon State University, Corvallis.

Effect of feeding blends of feedstuffs naturally contaminated with Fusarium mycotoxins on performance, metabolism and immunological parameters of dairy cattle. S. Korostelova* and T. Smith, University of Guelph, Guelph, Ontario, Canada.

Effect of feeding whole soybeans on hepatic gene expression in lactating dairy cows. J. D. Sampson*, R. P. Rhoads1, R. J. Tempelman2, S. S. Sipkovsky3, P. M. Coussens2, M. C. Lucy1, J. N. Spain1, and D. E. Spiers1, University of Arkansas, Fayetteville, 2University of Kentucky, Lexington, 3University of Arkansas, Little Rock.

Effects of feeding adsorbents on lactating dairy cows hematology and milk yield during summer. F. Abeni, L. Migliorati, F. Calza, and G. Pirlo*, CRA Istituto Sperimentale per la Zootecnia, Cremona, Italy.

Effects of dietary antioxidant plant extracts on udder health and milk quality. T. Doria*, G. Sara, M. Marina, and B. Valerio, University of Milan, Milan, Italy.
M207
A simulation model to integrate ruminal volatile fatty acids (VFA) and blood glucose metabolism in transition dairy cows under steady state conditions. X. Markantonatos1, Y. Aharoni1, T. Cassidy2, R. K. McGuffey1, L. F. Richardson3, and G. A. Varga1, 1The Pennsylvania State University, 2Elanco Animal Health, 3Newe Ya’ar Research Center, Israel.

M208

M209
Feeding a high energy diet on a restricted basis during the dry period does not negatively affect postpartum milk yield or dry matter intake. L. A. Winkelman* and C. K. Reynolds, The Ohio State University, Columbus.

M210
Systemic metabolic and endocrine changes and net portal flux in dairy cows fed a fat-based diet (FBD) compared to a starch-based diet (SBD). H. M. Hammon1, C. C. Metges1, F. Becker1, O. Bellmann1, F. Schneider1, P. Junghans1, P. Dubreuil2, M. C. Thivierge2, and H. Lapierre1, 1Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany, 2University of Montreal, St-Hyacinthe, QC, Canada, 3Département des sciences animales, Université Laval, Québec, QC, Canada, 4Dairy and Swine Research and Development Centre, Lennoxville, QC, Canada.

M211

M212
Plasma aflatoxin concentrations over time in bolus fed lactating dairy cows. M. Moschini1, F. Mosoero1, D. E. Diaz2, A. Gallo1, A. Pietri3, and G. Piva*, 1Catholic University of Piacenza, Piacenza, Italy, 2Utah State University, Logan, UT.

M213
Milk production as a function of nutrient supply follows a Michaelis-Menten relationship. J. J. O. Pimentel*, R. P. Lana1, B. Pietri1, and G. Lapierre1, 1Michigan State University Upper Peninsula Experiment Station, Chatham, 2The Ohio State University, Columbus, 3Adisseo France SAS, Commentry, France.

M214

M215
Assessment of blended sorbitol and mannitol as a prepartum glucogenic supplement for periparturient dairy cows. J. W. McFadden*, S. S. Block3, and J. K. Drackley1, 1University of Illinois, Urbana, 2ADM Alliance Nutrition, Inc., Decatur, IN.

Ruminant Nutrition
Nitrogen Metabolism/Amino Acids - Dairy
Exhibit Hall A

Abstract #

M216
Effects of the isopropylester of the hydroxylated analogue of methionine (HMBi) on production performance of dairy cows in early lactation. S. Jurjanz*, J. C. Robert1, and F. Laurent1, 1INRA-ENSAIA, Laboratoire de Sciences Animales, Vandoeuvre, France, 2Adisseo France SAS, Commentry, France.

M217

M218
The effect of various rumen protected methionine sources on milk yield, milk composition and nitrogen efficiency of cows in mid-lactation. J. A. Strzetski1, J. Kowalczyk1, and W. Heinmeck2*, 1National Research Institute of Animal Production, Balice, Poland, 2The Kielanowski Institute of Animal Physiology and Nutrition, Jablonna, Poland, 3Degussa AG, Hanau, Germany.

M219
Milk composition as technique to evaluate the relative bio-availability of rumen protected methionine sources. Z. Bester, L. J. Erasmus*, and R. J. Coertze, University of Pretoria, Pretoria, South Africa.

M220

M221

M222
Plasma lysine irreversible loss rate to determine the effect of treatment of soybean meal on lysine availability in dairy cattle. S. I. Borucki Castro*, H. Lapierre1, L. E. Phillip1, P. Jardon3, and R. Berthiaume2, 1McGill University, Ste Anne de Bellevue QC, Canada, 2Agriculture and Agri-Food Canada, Dairy and Swine R&D Centre, Lennoxville QC, Canada, 3West Central, Ralston IA.

M223
Effect of post-ruminal supplementation of amino acids on production performance of lactating dairy cows. T. Whyte*, A. Hayirl1, H. Lapierre1, and L. Doepel1, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Lennoxville, QC, Canada.

M224
Metabolizable essential amino acids in mature ewes fed limited amounts of beet pulp. B. W. Hess*, P. W. Nathanielsz2, and S. P. Ford, 1University of Wyoming, Laramie, 2University of Texas Health Sciences Center, San Antonio.
Monday, JULY 10, 2006 POSTER SESSIONS

M225  Metabolizable essential amino acids in mature ewes fed limited amounts of beet pulp and supplementary ruminally undegradable protein. B. W. Hess*, 1, P. W. Nathanielsz, 2, and S. P. Ford, 1, University of Wyoming, Laramie, University of Texas Health Sciences Center, San Antonio, TX.


M230  Effect of RDP source on ruminal digestion in lactating dairy cows. S. M. Reynal*, G. A. Broderick, and J. Leibovich, US Dairy Forage Research Center, Madison, WI.

M231  Effects of replacement of animal protein with soy protein in lactating Holstein cows. A. Garcia* 1, P. W. Jardon2, and R. A. Patton3, 1Instituto Tecnologico y de Estudios Superiores de Monterrey, Queretaro, Mexico, 2West Central, Ralston, IA, 3Nittany Dairy Nutrition, Inc., Mifflinburg, PA.

M232  Effect of dietary protein levels on milk production and nitrogen efficiency in dairy cattle. M. Baik*, J. R. Aschenbach2, M. J. VandeHaar1, and J. S. Liesman1, 1Chonnam National University, Gwangju, South Korea, 2Institute of Veterinary Physiology Leipzig University, Leipzig, Germany, 3Michigan State University, East Lansing.

M233  Optimal nutrient intake and digestion for ruminal microbial protein and milk yields in lactating dairy cows. S. M. Reynal* and G. A. Broderick, US Dairy Forage Research Center, Madison, WI.

M234  Effect of dietary energy and protein level on dry matter intake, body weight changes and milk yield of Holstein cows in transition period. R. Lopez*, D. Gomez-Perez1, J. G. Garcia-Muniz1, G. D. Mendoza2, and A. Lara3, 1Universidad Autonoma Chapingo, Chapingo, Estado de Mexico, Mexico, 2Colegio de Postgraduados, Montecillo, Texcoco, Edo. de Mexico, Mexico, 3Cooperativa Agropecuaria y Forestal Chapingo S. C. de R. L., Chapingo, Edo. de Mexico, Mexico.

Ruminant Nutrition

Non-fibrous Carbohydrate & By-Product Feedstuffs

Exhibit Hall A

Abstract #

M235  Altering structural to non-structural carbohydrate ratio in the diet of transition dairy cows grazing pasture did not affect subsequent health or production. J. R. Roche*, Deccel, Hamilton, New Zealand.

M236  The feeding value of corn distillers solubles for lactating dairy cows. A. K. Sasikala-Appukuttan*, D. J. Schingoethe1, A. R. Hippen1, K. F. Kalscheur1, K. Karges2, and M. L. Gibson2, 1South Dakota State University, Brookings, 2Dakota Gold Research Association, Sioux Falls, SD.

M237  Effect of feeding wet pressed beet pulp on milk yield of dairy cows. J. C. Dalton*, N. Rimbey1, B. Shafii2, W. J. Price2, M. A. McGuire2, D. Costesso1, and J. Stewart1, 1University of Idaho, Caldwell, 2University of Idaho, Moscow, 3Amalgamated Sugar, LLC, Ogden, UT, 4Stewart Farms, Inc., Nampa, ID.


M239  Effect of extent of barley grain processing on productivity of lactating dairy cows varying in milk yield and days in milk. G. McGregor1, M. Dehghan-banadakyy1, R. Corbett1, and M. Oba*, 1University of Alberta, Edmonton, Alberta, Canada, 2Alberta Agriculture Food and Rural Development, Edmonton, Alberta, Canada.

M240  Effect of dietary wheat on dairy cow performance is not influenced by the addition of rumen buffers. L. Doepel* and A. Cox, University of Alberta, Edmonton, Alberta, Canada.


M242  Performance and blood metabolites of growing hairy sheep fed sorghum diets with urea and dried citrus pulp. H. Morales-Treviño, J. González-Rodríguez, E. Gutiérrez-Ornelas*, H. Bernal-Barragan, and J. Colín-Negrete, Facultad de Agronomía, Universidad Autónoma de Nuevo León, Carretera Ziauzua-Marín Km 17.5, Marín, Nuevo León, México.
Ruminant Nutrition

Ruminal Fermentation

Exhibit Hall A

Abstract #


M244 Effect of soybean hull supplementation frequency on the performance of steers grazing fall cool-season pastures with clover. R. L. Mills*, J. C. Waller1, and C. J. Richards2, 1The University of Tennessee, Knoxville, 2Oklahoma State University, Stillwater.

M245 Application of advanced Synchrotron-based analytical technique (SR-FTIR) to feed science and ruminant nutrition. P. Yu*, University of Saskatchewan, Saskatoon, Canada.

M246 Effect of T-2 toxin on growth of ruminal bacteria in batch culture. D. Srichana*, G. E. Rottinghaus1, P. Srichana1,3, J. H. Porter1, M. S. Kerley1, and J. N. Spain1, 1University of Missouri, Columbia, 2Thammasat University, Phathumthani, Thailand, 3Charoen Pokphand Group Co., Ltd., Bangkok, Thailand.

M247 Lactobacillus acidophilus isolated from cattle with potential to improve starch utilization. L. D. Early*, J. A. Nangle, and S. E. Gilliland, Oklahoma State University, Stillwater.


M249 The negative effects of one cycle of eight hours at suboptimal pH on rumen fermentation are not reduced by splitting it into various cycles. M. Cerrato, S. Calsamiglia*, and A. Ferret, Universitat Autonoma de Barcelona, Bellaterra, Spain.


M251 Conservation of fermentation energy and control of the VFA profile in the rumen. E. M. Ungerfeld* and R. A. Kohn, University of Maryland, College Park.

M252 Buffer pH and clarified ruminal liquid effects on stability of an exogenous fibrolytic enzyme. E. Meraz-Romero1, S. S. González*, E. P. Mendoza-Martínez1, O. Loera-Corrál1, M. Meneses-Mayo1, M. Cobos-Peralta1, and J. Avellaneda-Cevallos1, 1Colegio de Postgraduados, Montecillo, Edos. de México, México, 2UAM-Xochimilco, México D.F., México, 3UAM-Itzapalapa, México D.F., México, 4Universidad Técnica Estatal de Quevedo, Quevedo, Ecuador.

M253 In vitro fermentative characteristics of tropical grasses supplemented with tree/shrub forage. E. González*, O. Cáceres1, E. Albanell2, G. Caja3, and J. Arece4, 1Estación Experimental de Pastos y Forrajes, Matanzas, Cuba, 2Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain.

M254 Microbial yield and fiber digestion from sucrose, starch, pectin and bermudagrass fiber fermentation. L. Holtshausen*, M. B. Hall2, 1Stellenbosch University, Stellenbosch, South Africa, 2USDA-ARS, Madison, WI.


Swine Species

Exhibit Hall A

Abstract #


M257 The effects of feeding grains naturally-contaminated with Fusarium mycotoxins to gestating and lactating sows on metabolism and reproduction and the efficacy of a polymeric glucomannan adsorbent in preventing those effects. G. Diaz-Llano* and T. K. Smith, University of Guelph, Ontario, Canada.


M259 Use of a ground raw soybean diet to enhance reproductive efficiency in gilts. D. Sykes*, S. Couvillon, P. Gerard, M. Crenshaw, and P. Ryan, Mississippi State University, Mississippi State.

M261  Effect of the consistency of collection frequency on semen quality of boars. W. L. Flowers* and M. C. Seal, North Carolina State University, Raleigh.

M262  Effect of group size and floor space during the growing period on the growth performance of pigs after the heaviest pigs have been removed. J. M. DeDecker*, M. Ellis1, B. F Wolter2, and B. A. Peterson1, 1University of Illinois, Urbana, 2The Maschhoffs, Inc, Carlyle, IL.

SYMPOSIA AND ORAL SESSIONS

Animal Health I

Chair: John R., Wenz, Colorado State University

M100  G-H

Time Abstract #
9:30 AM ADSA Pioneer
9:45 AM 21  Application of a novel biochip for rapid detection of mastitis-causing pathogens in bulk tank milk in Taiwan. K. H. Lee*, Y. M. Shy1, Y. T. Lin1, L. Y. Liu2, S. J. Lee1, C. L. Chang1, M. C. Wu1, and C. H. Chi3, 1Hsinchu Branch, COA-IRI, Hsinchu, Taiwan, R.O.C., 2DR. Chip Biotechnology Inc., Chu-Nan, Taiwan, R.O.C., 3University of Taiwan, Taipei, Taiwan, R.O.C.

10:00 AM 22  Relationship of intramammary infection prevalence with somatic cell score in commercial herds. R. L. Bamber*, G. E. Shook1, G. J. Bennett1, Y. H. Schukken2, and P. L. Ruegg1, 1University of Wisconsin, Madison, 2Cornell University, Ithaca, NY.


10:30 AM 24  Effect of winter housing on cow dirt score, somatic cell score and mastitis incidence in dairy cows. K. O’Driscoll*, L. Boyle1, P. French1, B. Meaney1, and A. Hanlon2, 1Dairy Production Research Centre, Teagasc, Moorepark, Fermoy, Co. Cork, Ireland, 2School of Agriculture, Food Science and Veterinary Medicine, NUI Dublin, Belfield, Dublin 4, Ireland.


11:00 AM 26  Antimicrobial susceptibility patterns and trends in resistance development in bacteria isolated from milk, 2000-2004. P. J. Rajala-Schultz*, and B. C. Love2, 1The Ohio State University, Columbus, 2Penn State University, University Park.

11:15 AM 27  Neutrophil extracellular trap formation: An important neutrophil killing mechanism that is not inhibited by milk. J. Lippolis*, T. Reinhardt, J. Goff, and R. Horst, National Animal Disease Center/ARS/USDA, Ames, IA.

11:30 AM 28  Hepatic ApoB100 and ApoE mRNA in periparturient dairy cows. U. Bernabucci*, B. Ronchi1, L. Basiricò1, D. Pirazzì1, F. Rucca1, N. Lacetera1, E. Lepri1, and A. Nardone1, 1DiPA, Università della Tuscia, Viterbo, Italy, 2Veterinary Medicine, Università di Perugia, Perugia, Italy.

11:45 AM 29  Effect of isoflupredone acetate with or without long acting insulin on postparturient energy metabolism in lactating dairy cows. H. Seifi1, S. LeBlanc2, K. Leslie*, and T. Duffield2, 1School of Veterinary Medicine, Ferdowsi University of Mashhad, Iran, 2Ontario Veterinary College, University of Guelph, Canada.

12:00 PM 30  Use of rectal temperature monitoring to identify post-partum metritis in dairy cattle. J. R. Wenz*, S. M. Scott, S. E. Dobberstein, and W. Wailes, Colorado State University, Fort Collins.

Breeding and Genetics

Statistical Breeding

Chair: Michael MacNeil, USDA-ARS

L100 J

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>32</td>
<td>A computer program for detecting additive, dominance, imprinting, sex-influenced and the overall QTL effects. Y. Duan, J. Garbe, N. London, and Y. Da*, University of Minnesota, St. Paul.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>33</td>
<td>A mixed model approach to map QTL controlling complex binary disease traits and interacting with environments. Y. Li and H. N. Kadarmideen*, Statistical Animal Genetics Group, Swiss Federal Institute of Technology, ETH Zentrum, Zürich, Switzerland.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>34</td>
<td>A comparison of sire and animal model genetic parameter estimates from herds with high and low within-herd heritabilities. C. D. Dechow*¹ and H. D. Norman², ¹The Pennsylvania State University, University Park, ²Animal Improvement Programs Laboratory, Beltsville, MD.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>35</td>
<td>Modeling extended lactations in Holsteins. C. M. B. Dematawewa*¹, R. E. Pearson¹, and P. M. VanRaden¹, ¹Virginia Polytechnic Institute and State University, Blacksburg, ²Animal Improvement Programs Laboratory, Agricultural Research Services, USDA, Beltsville, MD.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>36</td>
<td>Improving stability and reliability of test day model evaluation in the Italian Holstein. F. Canavesi*, S. Biffani, and F. Biscarini, Associazione Nazionale Allevatori Frisoni Italiana, Cremona, Italy.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:00 AM</td>
<td>37</td>
<td>Use of phenotypic information to ascertain paternity. R. L. Sapp*, R. Rekaya, W. Zhang, and J. K. Bertrand, The University of Georgia, Athens.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>40</td>
<td>Genetic evaluations for mixed breed populations. P. M. VanRaden*, M. E. Tooker, J. B. Cole, G. R. Wiggans, and J. H. Megonigal, Jr., Animal Improvement Programs Laboratory, USDA, Beltsville, MD.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>41</td>
<td>A new statistical model and method of multiple breeds evaluation. L. Zhang*¹,², E. J. Pollak², and R. L. Quaa², ¹Inner Mongolia Agricultural University, Huhhot, China, ²Cornell University, Ithaca, NY.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>42</td>
<td>Use of Principal Components and Factor Analysis to factorize genetic correlation matrices of multivariate phenotypes. N. P. P. Macciotta*, N. Bacciu, C. Dimauro, and A. Cappio-Borlino, Dipartimento di Scienze Zootecniche, Università di Sassari, Sassari, Italy.</td>
</tr>
</tbody>
</table>

SYMPOSIUM

Food Safety

Ruminants as Reservoirs for Shiga Toxin-Producing Escherichia coli

Chair: Bhushan Jayarao, Pennsylvania State University

Symposium meets AAVSB’S RACE requirement for 3 hr CE.

200 B-C

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>Introduction. B. Jayarao, Pennsylvania State University, University Park.</td>
<td></td>
</tr>
<tr>
<td>9:35 AM</td>
<td>43</td>
<td>Shiga toxin-producing Escherichia coli: The big picture. C. L. Gyles*, University of Guelph, Guelph, Ontario, Canada.</td>
</tr>
<tr>
<td>11:05 AM</td>
<td>45</td>
<td>Pre-harvest control of Escherichia coli O157. J. T. LeJeune* and A. N. Wetz, The Ohio State University, Wooster.</td>
</tr>
<tr>
<td>11:50 AM</td>
<td>Discussion</td>
<td></td>
</tr>
</tbody>
</table>

Monday, JULY 10, 2006 ORAL SESSIONS
Forages and Pastures
Quality and Antiquality
Chair: Sam Coleman, USDA ARS, Brooksville, FL
101 D-E

9:30 AM 46  The biochemistry of tannins: Role in ruminant production. J. Foster*, USDA, ARS, Appalachian Farming Systems Research Center, Beaver, WV.

10:00 AM 47  Polyphenols and mechanical maceration shift protein fractions in legume hays from rapidly to slowly degraded forms. J. H. Grabber*, USDA-Agricultural Research Service, US Dairy Forage Research Center, Madison, WI.

10:15 AM 48  Lipolysis of red clover with differing polyphenol oxidase activities in batch culture. M. R. F. Lee*1, L. J. Parfitt2, and F. R. Minchin1, 1Institute of Grassland and Environmental Research, Aberystwyth, Ceredigion, UK, 2Institute of Rural Studies, University of Wales, Aberystwyth, Ceredigion, UK.

10:30 AM 49  Physiological changes in heifers following grazing of toxic or non-toxic tall fescue. G. E. Aiken*1, M. L. Looper2, and B. H. Kirch1, 1USDA-ARS, Forage-Animal Production Research Unit, 2USDA-ARS, Dale Bumpers Small Farms Research Center.

10:45 AM 50  Differences in morphological and cell wall traits of alfalfa plants selected for divergent stem in vitro fiber digestibility. H. G. Jung* and J. S. F. Lamb, USDA-ARS, St. Paul, MN.

11:00 AM 51  Length of the daylight period before cutting improves rumen fermentation of alfalfa assessed by in vitro gas production. R. Berthiaume*1, G. Tremblay2, Y. Castonguay2, A. Bertrand2, G. Bélanger2, C. Lafrenière3, and R. Michaud3, 1Agriculture & Agri-Food Canada, Lennoxville, QC, Canada, 2Agriculture & Agri-Food Canada, Sainte-Foy, QC, Canada, 3Agriculture & Agri-Food Canada, Kapuskasing, ON, Canada.

11:30 AM 52  Effect of harvest schedule and plant part on in vitro gas production of temperate forages. J. L. Repetto*, A. Britos1, N. Errandonea1, D. Cozzolino2, and C. Cajarville1, 1Departamento de Nutrición Animal, Facultad de Veterinaria, Montevideo, Uruguay, 2The Australian Wine Research Institute, Adelaide, Australia.


12:15 PM 55  Coastal, Russell and Tifton 85 bermudagrass hay consumption by growing beef steers and in situ digestion. V. A. Corriher*, G. M. Hill, and B. G. Mullinix, Jr., University of Georgia, Tifton.

SYMPOSIUM
Goat Species
Potential of Goats as Biological Agents to Produce Meat, Control Vegetation and Restore Land
Chair: Maximino Huerta Bravo, University of Chappingo, Mexico
M100 D-E

9:30 AM 56  Meat goat industry, an emerging animal-agriculture enterprise in the U.S. S. Solaiman*, Tuskegee University, Tuskegee, AL.

10:00 AM 57  Nutritional quality assessment of browse for goats. W. Pittroff*, University of California, Davis.

10:30 AM 58  Vegetation control using goats. S. Hart*, Langston University, Langston, OK.

11:00 AM 59  Utilization of goats for rejuvenation, reclamtion and land cleaning. A. Peischel*, Tennessee State University, Nashville.

11:30 AM  Discussion. M. Bravo, University of Chappingo, Mexico.
Graduate Student Paper Competition
Northeastern ASAS/ADSA Graduate Competition
Chair: Steven Zinn, University of Connecticut

101 F-G

Time Abstract #
9:30 AM 60 Milk production of dairy cows fed diets constant or varied in phosphorus content during lactation. J. Elizondo*1, D. Beegle1, J. Fergusson1, and Z. Wu1, 1Pennsylvania State University, University Park, 2University of Pennsylvania, Kennett Square.


62 Withdrawn by author.

10:00 AM 63 Accelerated calf growth: When does it make sense? D. Berthiaume* and J. Smith, University of Vermont, Burlington.

Graduate Student Paper Competition
National ADSA Foods Division
Chair: David McCoy, Chr. Hansen

200 D-E

Time Abstract #
9:30 AM 64 Fatty acid composition and thermal properties of lipid from milk and butter from lactating Holstein cows fed a supplemental lipid either high or low in palmitic acid. M. K. Beam*1, L. W. Lassonde1, B. C. Veltri1, S. J. Taylor2, R. Jimenez-Flores2, and E. J. DePeters1, 1University of California, Davis, 2California Polytechnic State University, San Luis Obispo.

9:45 AM 65 Influence of fatty acid chain length and unsaturation on mid-infrared milk analysis. K. Kaylegian* and D. Barbano, Cornell University, Ithaca.

10:00 AM 66 Binding of flavor compounds to native and denatured whey protein using headspace solid-phase microextraction. J. Kühn*1,2, T. Considine1, and H. Singh1, 1Riddet Centre, Palmerston North, New Zealand, 2Institute of Food, Nutrition, and Human Health, Palmerston North, New Zealand, 3Fonterra Research Centre, Palmerston North, New Zealand.

10:15 AM 67 Improving the texture of nonfat processed cheese for use in baking applications. C. A. Brickley*1,2, S. Govindasamy-Lucey1, J. J. Jaeggi2, M. E. Johnson1, P. L. H. McSweeney1, and J. A. Lucey2, 1University College Cork, Cork, Ireland, 2University of Wisconsin, Madison, 3Wisconsin Center for Dairy Research, Madison, WI.


10:45 AM Break

11:00 AM 69 Improving texture and flavor of reduced fat Cheddar cheese using an exopolysaccharide-producing culture and ultrafiltration. P. Agrawal* and A. N. Hassan, South Dakota State University, Brookings.


11:45 AM 72 Development of a novel immunoassay system for immunobiotics that modulate intestinal immunity through Toll-like receptor 2. M. Tohno*, T. Shimosato, Y. Kawai, T. Saito, and H. Kitazawa, Graduate School of Agricultural Science, Tohoku University, Sendai, Japan.
### Graduate Student Paper Competition
**National ADSA Dairy Production Division**
**Chair: Zhiguo Wu, Pennsylvania State University**

**101 H-I**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:45 AM</td>
<td>74</td>
<td>The effect of supplemental dietary forage on the concentration of phosphorus and nitrogen in feces of lactating cows. E. M. O’Rourke*, J. J. Michal1, R. L. Kincaid1, J. H. Harrison2, and C. T. Gaskins1, 1Washington State University, Pullman, 2Washington State University, Puyallup.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>75</td>
<td>Suppressor of cytokine signaling-2 mRNA increases after calving in dairy cows and is associated with elevated estradiol-17β concentrations before calving. L. A. Winkelman*, M. C. Lucy2, and C. K. Reynolds1, 1The Ohio State University, Columbus, 2University of Missouri, Columbia.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>76</td>
<td>Effects of dietary allocation of barley grains differing in expected starch digestion on rumen fermentation and productivity of lactating dairy cows. C. Silveira*, M. Oba1, W. Z. Yang2, and K. A. Beauchemin1, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>77</td>
<td>Characterization of cytokine gene expression in periparturient dairy cows naturally infected with Mycobacterium avium subsp. paratuberculosis. E. L. Williams* and J. R. Stabel, USDA-ARS-National Animal Disease Center, Ames, IA.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>78</td>
<td>Response in diurnal variation of circulating blood metabolites to nocturnal vs. diurnal provision of fresh feed in lactating cows. A. Nikkhah*, J. C. Plaizier, C. Furedi, and A. D. Kennedy, University of Manitoba, Winnipeg, MB, Canada.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>79</td>
<td>Assessment of the effects of cinnamon leaf oil on rumen microbial fermentation using two continuous culture systems. G. R. Fraser*, A. V. Chaves2, Y. Wang2, T. A. McAllister2, K. A. Beauchemin1, and C. Benechaar1, 1Nova Scotia Agricultural College, Truro, NS, Canada, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>80</td>
<td>Feed peas can successfully replace soybean meal and corn grain in dairy cow diets. M. Vander Pol* and A. N. Hristov, University of Idaho, Moscow.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>82</td>
<td>Effects of varying CLA doses on production and bioenergetic variables during the transition period. L. J. Odens*, R. Burgos1, B. C. Pollard1, M. L. Innocenti12, S. H. Baker1, S. R. Sanders1, J. K. Kay1, M. L. Rhoads1, C. E. Moore1, M. J. VanBaale1, and L. H. Baumgard1, 1The University of Arizona, Tucson, 2University of Milan, Milan, Italy.</td>
</tr>
</tbody>
</table>

### Meat Science and Muscle Biology
**Chair: Floyd McKeith, University of Illinois**

**L100 D-E**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>83</td>
<td>Dose titration of ractopamine evaluating the effects on carcass cutout yields in feedlot steers. A. Schroeder*, D. Hancock1, D. Mowrey1, S. Laundert1, G. Vogel1, D. Polser1, and F. McKeith1, 1Eli Lan Animal Health, Greenfield, IN, 2University of Illinois, Urbana.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>84</td>
<td>Selection for improvement in pig growth rate does not alter fresh pork quality. C. E. Wagner*, E. Huff-Lonergan1, M. F. Rothschild1, A. A. Sosnicki12, S. B. Jungst2, K. J. Prusa1, and S. M. Lonergan1, 1Iowa State University, Ames, 2PIC North America, Franklin, KY.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>85</td>
<td>Interaction of MC4R and PRKAG3 genotypes with genetic potential for growth on meat quality traits. S. E. F. Guimaraes13, M. F. Rothschild1, E. Huff-Lonergan1, A. A. Sosnicki12, S. B. Jungst2, M. Yu1, and S. M. Lonergan1, 1Iowa State University, Ames, 2PIC North America, Franklin, KY, 3Universidade Federal de Vicosa, Vicoso, MG, Brazil.</td>
</tr>
</tbody>
</table>
10:30 AM  86  Associations between animal, transportation, and slaughterhouse practices and meat pH in beef. N. Mach*, M. Devant1, A. Bach2,1, and A. Velarde1, 1Unidad Remungants, IRTA, Barcelona, Spain, 2ICREA, Barcelona, Spain, 3Centre de Tecnología de la Carne, IRTA, Spain.

10:45 AM  87  The role of integrin and desmin in water-holding capacity in pork. W. Zhang*, E. Huff-Lonergan, and S. Lonergan, Iowa State University, Ames.

11:00 AM  88  Impacts of beef cattle diets containing corn or sorghum distillers grains on beef color, fatty acid profiles, and sensory attributes. R. K. Gill*, 1D. L. VanOverbeke, and A. DiCostanzo, 1University of Minnesota, St. Paul, 2Oklahoma State University, Stillwater.


11:30 AM  90  Dietary high-tannin sorghum reduces oxidation in rat muscles. R. Larrain* and J. Reed, University of Wisconsin, Madison.


12:00 PM  92  Intramuscular administration of zinc metallothionein to preslaughter-stressed pigs improves anti-oxidative function and pork quality. L. L. Li, Z. P. Hou, Y. H. Liu, D. X. Hou, B. Zhang, G. Y. Wu, C. B. Yang, J. Yang, Z. R. Tang, Y. L. Yin, and M. Z. Fan, 1Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, Hunan, P.R. China, 2Hunan Agricultural University, Changsha, Hunan, P.R. China, 3Kagoshima University, Kagoshima, Japan, 4Texas A&M University, College Station, 5University of Guelph, Guelph, Ontario, Canada.

Nonruminant Nutrition

Nursery Nutrition - Swine

Chair: Chris Knight, Novus International, Inc. and Mike Rincker, Distributors Processing, Inc.

L100 H-I

Time   Abstract #   Title

9:45 AM  94  Additivity of effects of copper and zinc in diets for weaned piglets on a commercial farm. V. G. Perez-Mendoza*, M. U. Steidinger1, G. R. Hollis1, T. M. Fakler3, and J. E. Pettigrew1, 1University of Illinois, Urbana-Champaign, 2Swine Nutrition Services Inc, Anchor, IL, 3Zinpro Corporation, Eden Prairie, MN.

10:00 AM  95  Importance of vitamin B12 enterohepatic cycle in growing pigs. D. P. Prévéraud*, C. L. Girard1, F. Guay2, N. Le Floc’h1, and J. J. Matte1, 1University of Minnesota, Urbana-Champaign, 2Laval University, Ste-Foy, QC, Canada, 3INRA, St-Gilles, France.

10:15 AM  96  Bioavailability of dietary cyanoacobalamin (vitamin B12) in growing pigs. J. J. Matte*, D. P. Prévéraud1,2, F. Guay2, and C. L. Girard1, 1University of Minnesota, Urbana-Champaign, 2Laval University, Lennoxville, QC, Canada, 3Université Laval, Québec, QC, Canada.


11:00 AM  99  Break


11:30 AM  100  Effects of soybean meal concentration on growth performance of nursery pigs fed simple and complex diets. P. M. Clark*, J. D. Hancock, K. C. Behnke, and A. C. Fahrenholz, Kansas State University, Manhattan.


Prediction of the proximate content of homogenized whole Pacific Herring (Clupea pallasi) using near-infrared reflectance spectroscopy (NIRs). C. Morishige¹, J. R. Carpenter*¹, and B. Rasco², ¹University of Hawaii at Manoa, Honolulu, ²Washington State University, Pullman.

Catabolism of essential amino acids in enterocytes of growing pigs. L. X. Chen*¹,², Y. L. Yin¹, W. S. Jobgen², D. A. Knabe², and G. Wu¹², ¹The Chinese Academy of Sciences, Changsha, Hunan, P.R. China, ²Texas A&M University, College Station.

SYMPOSIUM

Physiology and Endocrinology

Metabolic Regulation of Food Intake

Chair: Tom Adams, University of California

Symposium meets AAVSB’S RACE requirement for 3 hr CE.

L100 A

9:30 AM 105 Hepatic energy status as a stimulus for hunger and satiety. M. Friedman*, Monell Chemical Senses Center, Philadelphia, PA.

10:15 AM 106 The role of ghrelin in the regulation of energy balance in the sheep. I. Clarke*, Monash University, Melbourne, Australia.

11:00 AM 107 Metabolic regulation of food intake in ruminants. M. S. Allen* and B. J. Bradford, Michigan State University, East Lansing.

11:45 AM 108 Effect of body composition on feed intake and macronutrient selection in growing pigs. M. J. Azain*, University of Georgia, Athens.

Ruminant Nutrition

Growing/Finishing Nutrition - Beef

Chair: Steven Loerch, The Ohio State University

L100 F-G


111 Withdrawn by author.

112 Withdrawn by author.

10:00 AM 113 Evaluation of cotton gin trash as a low-cost feedstuff for growing cattle. J. B. Kennedy* and D. L. Rankins, Jr., Auburn University, Auburn, AL.


10:30 AM 115 Assessment of energy enhanced roughage (EER) based diets for growing/finishing cattle. J. R. Carpenter*¹ and B. Sporleder², ¹University of Hawaii at Manoa, Honolulu, ²Byproducts Enhancement Technologies Corporation (BETC), Fort Collins, CO.
10:45 AM 116 Evaluation of feed efficiency traits in growing Brahman heifers and relationship with body composition ultrasound traits and feeding behavior. F. R. B. Ribeiro*, G. E. Carstens, P. A. Lancaster, L. O. Tedeschi, and M. H. M. R. Fernandes, 1Texas A&M University, College Station, 2Universidade Estadual Paulista-CAV, Jaboticabal, SP, Brazil.

11:00 AM 117 Effects of sorting and supplementation of optaflexx on yearling feedlot performance. W. A. Griffin*, T. J. Klopfenstein, K. J. Vander Pol, D. M. Feuz, and M. A. Greenquist, University of Nebraska, Lincoln.

11:15 AM 118 Evaluation of feeding ractopamine (Optaflexx®) with various levels of dietary crude protein on growth performance in feedlot steers. S. Sachtleben, E. Thomas, W. Platter, and A. Schroeder, 1Kent Feeds, Inc., Muscatine, IA, 2Elanco Animal Health, Greenfield, IN.

11:30 PM 119 Evaluation of feeding ractopamine (Optaflexx®) with various levels of dietary crude protein on carcass characteristics in feedlot steers. S. Sachtleben, E. Thomas, W. Platter, and A. Schroeder, 1Kent Feeds, Inc., Muscatine, IA, 2Elanco Animal Health, Greenfield, IN.


Ruminant Nutrition
Rumen Fermentation Modifiers
Chair: Todd Callaway, USDA-ARS, Southern Plains Agriculture Research Center

101 B-C

Time Abstract #

9:45 AM 122 A modified glucomannan as a method for mitigating fescue toxicosis. II. Cattle behavior. J. D. Shockey*, S. A. Gunter, P. A. Beck, and C. A. Masino, University of Arkansas, Hope.

10:00 AM 123 Effects of Saccharomyces cerevisiae (Sc47) on the rumen digestion, fermentation and protozoa population of bulls fed either alfalfa hay or corn silage diet. A. Nikkhah* and E. Ghasemi, Tehran University, Karaj, Tehran, Iran.


10:30 AM 125 Effect of CRINA RUMINANTS AF, a mixture of essential oil compounds, on finishing beef steer performance. N. Meyer*, G. Erickson, T. Klopfenstein, P. Williams, and R. Losa, 1University of Nebraska, Lincoln, 2Intervet, Millsboro, DE.

10:45 AM 126 Effects of concentration and duration of Rumensin application on milk production efficiency in multiparous Holstein cows. A. Arieli*, C. M. Martinez, T. W. Cassidy, and G. A. Varga, 1Hebrew University of Jerusalem, Rehovot, Israel, 2Pennsylvania State University, University Park.

11:00 AM 127 Effects of monensin on dairy cows fed diets differing in fiber source and starch concentration. A. M. Gehman*, P. J. Kononoff, B. N. Janicek, and F. Burgó, 1University of Nebraska, Lincoln, 2University of Buenos Aires, Argentina.

11:15 AM 128 Effects of molasses and monensin in alfalfa hay or corn silage diets on rumen fermentation, total digestibility and milk production in holstein cows. E. R. Oelker*, C. Reveneau, and J. L. Firkins, The Ohio State University, Columbus.


### Graduate Student Paper Competition
**ADSA Southern Branch**
**Chair: Bill Graves, University of Georgia**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>101 F-G</td>
<td>133</td>
<td>Waste milk supply and pasteurizer performance on three North Carolina dairy farms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M. C. Scott*, R. E. James¹, M. L. McGilliard¹, and B. A. Hopkins², *Virginia Polytechnic Institute and State University, Blacksburg, North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>134</td>
<td>Breed differences in postpartum cyclicity of pasture-based dairy cows.</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>135</td>
<td>Effect of feed additives on aflatoxin in milk of dairy cows fed aflatoxin-contaminated diets.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J. Stroud*, E. English¹, S. Davidson¹, B. Hopkins¹, G. Latimer², W. Hagler¹, C. Brownie¹, and L. Whitlow¹, North Carolina State University, Raleigh, Texas A&amp;M University, College Station.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>136</td>
<td>Using dietary heat increment to alter energy use in dairy cows during hot weather.</td>
</tr>
</tbody>
</table>

### ADSA-SAD – Undergraduate Competition
**Dairy Production**
**Chair: Cathleen C. Williams, Louisiana State University**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 H</td>
<td>137</td>
<td>The use of copper sulfate to improve hoof health in dairy cattle.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M. Konzelman*, Louisiana State University, Baton Rouge.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>138</td>
<td>The agricultural workforce: Changing times and issues.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>K. Connelly*, Pennsylvania State University, University Park.</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>139</td>
<td>Dairy production in south China: Challenges and opportunities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L. Schultz¹, and B. Moss³, Iowa State University, Ames, Agricultural Trade Office, U.S. Consulate General, Guangzhou, China, Auburn University, Auburn, AL.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>140</td>
<td>Methane digestion- same manure- more energy and nutrients- less odor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A. Offenheiser*, University of Kentucky, Lexington.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>141</td>
<td>Why crossbreed dairy cattle?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J. Yoder*, Virginia Polytechnic Institute and State University, Blacksburg.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R. J. Mast* and E. H. Jaster, California Polytechnic State University, San Luis Obispo.</td>
</tr>
</tbody>
</table>
## Women and Minority Issues in Animal Agriculture Luncheon

**Chair:** Katharine Knowlton, Virginia Polytechnic Institute and State University

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
</table>

## Animal Health

### Johne’s Disease

**Chair:** Ken Olson, National Institute for Animal Agriculture

**Symposium meets AAVSB’S RACE requirement for 3 hr CE.**

**M100 G-H**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>144</td>
<td>Johne’s Disease integrated program – An overview. V. Kapur*, <em>University of Minnesota, Minneapolis.</em></td>
<td></td>
</tr>
<tr>
<td>2:30 PM</td>
<td>145</td>
<td>JEI – Producer focused Johne’s information. K. E. Olson*, National Institute for Animal Agriculture, Bowling Green, KY.</td>
<td></td>
</tr>
<tr>
<td>2:45 PM</td>
<td>146</td>
<td>Johne’s demonstration project in Texas. M. A. Villarino, H. M. Scott, and E. R. Jordan*, <em>Texas Cooperative Extension, Texas A &amp; M University, Dallas,</em></td>
<td>1Texas Cooperative Extension, Texas A &amp; M University, Dallas, 2Texas A &amp; M University, College Station.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>147</td>
<td>Georgia Johne’s Disease demonstration herd. M. Pence*, University of Georgia, Athens.</td>
<td></td>
</tr>
<tr>
<td>3:15 PM</td>
<td>148</td>
<td>Results from Minnesota Johne’s Disease demonstration herd control program. C. Ferrouillet*, and S. Wells, University of Minnesota, Saint Paul.</td>
<td></td>
</tr>
<tr>
<td>3:45 PM</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:15 PM</td>
<td>151</td>
<td>The impact of Mycobacterium avium subsp paratuberculosis fecal shedding and clinical Johne’s disease on lactation performance. E. A. Raizman*, J. Fetrow*, S. M. Godden, and S. J. Wells*, Purdue University, West Lafayette, IN, University of Minnesota, St Paul.</td>
<td></td>
</tr>
</tbody>
</table>
## Breeding and Genetics

### Dairy Breeding

**Chair:** Daryl Nash, Ferrum College

L100 J

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors and Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>ADSA Pioneer</td>
<td>Dairy cattle breeding in the last half century. A. E. Freeman, <em>Iowa State University, Ames.</em></td>
<td></td>
</tr>
<tr>
<td>2:45 PM</td>
<td>157</td>
<td>Domestic versus imported artificial-insemination semen for Holstein graziers in the United States. H. D. Norman, J. R. Wright, and R. L. Powell*, <em>Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.</em></td>
<td></td>
</tr>
<tr>
<td>3:00 PM</td>
<td>158</td>
<td>Assessment of the economically optimal voluntary waiting period for first breeding in dairy cattle. A. Bell*, A. de Vries, and P. J. Hansen, <em>University of Florida, Gainesville.</em></td>
<td></td>
</tr>
<tr>
<td>3:15 PM</td>
<td>159</td>
<td>Optimal breeding and replacement decisions for dairy cows when heifer supply is constrained. A. de Vries*, <em>University of Florida, Gainesville.</em></td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>160</td>
<td>Protections available for intellectual property in the dairy artificial insemination industry. E. Ogden and K. Weigel*, <em>University of Wisconsin, Madison.</em></td>
<td></td>
</tr>
<tr>
<td>4:00 PM</td>
<td>161</td>
<td>Genetic analysis of milk urea nitrogen and lactose and their relationships with production traits in Canadian Holstein cattle. F. Miglior*1,2, A. Sewalem1,2, J. Jamrozik1, D. M. Lefebvre1, and R. K. Moore1, <em>Agriculture and Agri-Food Canada - Dairy and Swine Research and Development Centre, Lennoxville, QC, Canada, 2Canadian Dairy Network, Guelph, ON, Canada, 3Centre for the Genetic Improvement of Livestock, University of Guelph, Guelph, ON, Canada, 4Programme d’Analyse des Troupeaux Laitiers du Québec, Ste-Anne-de-Bellevue, QC, Canada.</em></td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>163</td>
<td>Effects of accounting for heat stress on genetic evaluation of US Holsteins for milk by a test day model. J. Bohmanova1, I. Misztal*, S. Tsuruta1, H. D. Norman1, and T. J. Lawlor1, <em>University of Georgia, Athens, 2Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, 3Holstein Association, Brattleboro, VT.</em></td>
<td></td>
</tr>
<tr>
<td>4:45 PM</td>
<td>164</td>
<td>Estimation of genetic parameters of test day milk yields for Holsteins in Khorasan province of Iran. J. Eslam1, H. Farhangfar*, and H. Naemipour1, <em>Zabol University, Zabol, Iran, 2Birjand University, Birjand, Iran.</em></td>
<td></td>
</tr>
<tr>
<td>5:00 PM</td>
<td>165</td>
<td>Studies on drops of PTA from first to second crop for final score in Holsteins. V. Koduru*, I. Misztal1, S. Tsuruta1, and T. J. Lawlor2, <em>The University of Georgia, Athens, 3Holstein Association USA Inc., Brattleboro, VT.</em></td>
<td></td>
</tr>
</tbody>
</table>

## Dairy Foods

### Cheese I

**Chair:** Joe Schlesser, FDA

200 D-E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors and Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>ADSA Pioneer</td>
<td>The cheese industry over time. W. J. Harper, <em>Ohio State University, Columbus.</em></td>
<td></td>
</tr>
<tr>
<td>2:15 PM</td>
<td>166</td>
<td>Textural and rheological properties of cream cheese: effect of cream mix homogenization pressure and incubation temperature. M. Brighenti1, S. Govindasamy-Lucey2, J. J. Jaeggi2, K. Lim2, M. E. Johnson2, and J. A. Lucey1, 1University of Wisconsin, Madison, 2Wisconsin Center for Dairy Research, Madison, WI.*</td>
<td></td>
</tr>
<tr>
<td>2:30 PM</td>
<td>167</td>
<td>The effect of high pressure processing on the salt distribution in Turkish white cheese. N. Koca*1,2, R. Raghupathy1, V. M. Balasubramaniam1, and W. J. Harper1, <em>The Ohio State University, Columbus, 2Ege University, Izmir, Turkey.</em></td>
<td></td>
</tr>
</tbody>
</table>
Isolation and purification of angiotensin-I-converting enzyme inhibitory peptides from Cheddar cheeses with the addition of probiotic Lactobacillus casei or L. paracasei. L. Ong¹, N. Shah*¹, and A. Henriksson², ¹Victoria University, Werribee, Victoria, Australia, ²DSM Food Specialties, NSW, Australia.


Isolation and purification of angiotensin-I-converting enzyme inhibitory peptides from Cheddar cheeses with the addition of probiotic Lactobacillus casei or L. paracasei. L. Ong¹, N. Shah*¹, and A. Henriksson², ¹Victoria University, Werribee, Victoria, Australia, ²DSM Food Specialties, NSW, Australia.


SYMPOSIUM
Dairy Foods
Political, Economic, and Scientific Considerations of Milk Component Utilization
Chair: Brandon Nelson, Schreiber Foods Inc.
Sponsor: Schreiber Foods
200 B-C

Withdrawn by author.

The last 100 years of milk component separation. D. Barbano*, Northeast Dairy Foods Research Center, Cornell University, Ithaca, NY.


What to do with lactose. C. Hansen, Utah State University, Logan.

Break


Are U.S. regulatory agencies and markets ready for true milk component utilization? M. Stephenson, Cornell University, Ithaca, NY.

Panel discussion

Adjourn
Graduate Student Paper Competition
National ADSA Production Division (con’t.)
Chair: Zhiguo Wu, Pennsylvania State University

101 H-I

Time  Abstract #  Title and Author(s) with Institution(s)
2:00 PM  178  Development of a mechanistic model to understand the dynamics of liquid flow out of the reticulo-rumen in dairy cattle. S. Seo*, C. Lanzas, L. Tedeschi, and D. Fox, 1Cornell University, Ithaca, NY, 2Texas A&M University, College Station.


3:00 PM  182  Use of infrared thermography to non-invasively identify lesions in dairy cows. B. A. Munsell*, D. K. Beede, J. J. Domecq, W. B. Epperson, A. Ragavendran, N. T. Wright, and A. J. Zanella, 1Michigan State University, East Lansing, 2Ohio State University, Columbus.


Growth and Development
Chair: Mike Azain, University of Georgia and Tony Capuco, USDA

M100 D-E

Time  Abstract #  Title and Author(s) with Institution(s)

185  Withdrawn by author.

2:30 PM  186  The adipogenic enzymatic activity of bovine intramuscular, perirenal, and subcutaneous cultured preadipocytes differs, and increases in all depots following exposure to dexamethasone. G. Ortiz-Colón*, A. C. Grant, M. E. Doumit, and D. D. Buskirk, Michigan State University, East Lansing.


3:00 PM  188  Leptin increases IGF-I-induced expression of SOCS3 mRNA in prepubertal heifer mammary parenchyma. B. E. Etchebarne*, L. F. P. Silva, J. S. Liesman, and M. J. VandeHaar, 1Stanford University, Palo Alto, CA, 2University of Sao Paulo, Pirassununga, SP, Brazil, 3Michigan State University, East Lansing.

3:30 PM 190 Evaluation of a mathematical model to estimate total feed required for pen-fed Santa Gertrudis steers and heifers based on performance and diet composition. B Bourg*1, L. O. Tedeschi1, G. E. Carstens1, E. Brown1, and D. G. Fox2, 1Texas A & M University, College Station, 2Cornell University, Ithaca, NY.

3:45 PM 191 Using ultrasound to determine body composition of breeding heifers. M. J. Baker*1, L. O. Tedeschi2, D. G. Fox1, W. R. Henning3, and D. J. Ketchen1, 1Cornell University, Ithaca, NY, 2Texas A&M University, College Station, 3Pennsylvania State University, College Park.

Lactation Biology
Chair: Thomas McFadden, University of Vermont
101 J

Time Abstract #
2:00 PM ADSA Pioneer What happened to lactation knowledge in the last 48 years? A. Tucker, Michigan State University, East Lansing.

2:15 PM 192 Effects of CLA on bioenergetic and milk production parameters in grazing dairy cows offered ad libitum or restricted pasture. J. K. Kay*1,2, T. R. Mackle1, D. E. Bauman3, N. A. Thomson1, and L. H. Baumgard2, 1Dexcel, Hamilton, New Zealand, 2University of Arizona, Tucson, 3Cornell University, Ithaca, NY.


3:00 PM 195 Circulating metabolites from postpartum cows supplemented with POSILAC® and given various lengths of days dry. T. Klusmeyer*, A. Fitzgerald, J. Ballam, and J. Vicini, Monsanto Co., St. Louis, MO.

3:15 PM 196 Identification of putative bovine mammary stem cells by their retention of labeled DNA strands. A. V. Capuco*, Bovine Functional Genomics Lab, USDA-ARS, Beltsville, MD.


3:45 PM 198 Streptococcus uberis increases apoptosis of bovine mammary epithelial cells (MEC) and decreases integrin and focal adhesion kinase (FAK) mRNA expression. K. Singh*, J. Dobson1, C. Phy, S. Davis2, V. Farr3, and A. Molenaar4, 1Agresearch Ltd., Ruakura Research Centre, Hamilton, New Zealand, 2Dexcel Ltd., Hamilton, New Zealand, 3ViaLactia Biosciences (NZ) Ltd., Auckland, New Zealand.

Physiology and Endocrinology
Estrous Synchronization
Chair: Pete Hansen, University of Florida
101 D-E

Time Abstract #
2:00 PM ADSA Pioneer Reflections on past history of estrus synchronization research. W. Thatcher, University of Florida, Gainesville.

2:15 PM 200 Assessment of vaginal electrical resistance (VER) as an indicator of follicular maturity and suitability for timed AI in cows subjected to a synchronization of ovulation protocol. J. F. Zuluaga*, J. P. Saldarriaga, D. A. Cooper, J. A. Cartmill, and G. L. Williams, Texas A&M Agricultural Research Station, Beeville.

2:30 PM 201 Influence of preovulatory concentrations of estradiol on interval to ovulation and uterine pH. G. A. Perry* and B. L. Perry, South Dakota State University, Brookings.

2:45 PM 202 Optimizing ovulation to 1st GnRH improved outcomes to each hormonal injection of Ovsynch in lactating dairy cows. N. M. Bello*, J. P. Steibel, and J. R. Pursley, Michigan State University, East Lansing.

3:00 PM 203 Delaying injection of prostaglandin F₂₀ (PGF) in an Ovsynch protocol. J. S. Stevenson*, M. A. Portaluppi, and D. E. Tenhouse, Kansas State University, Manhattan.

Effect of synchronization protocols on follicular development of dairy heifers. J. L. Stevenson*, R. C. Chebel1, J. C. Dalton1, J. E. P. Santos1, R. Sartori1, and A. Ahmadzadeh1, University of Idaho, Caldwell, 2University of California-Davis, Tulare, 3EMBRAPA, Brasilia, DF, Brazil, 4University of Idaho, Moscow.


Effects of presynchronization with GnRH on conception rates and ovarian events in Bos indicus-influenced females synchronized with CO-Synch + CIDR. J. F. Zuluaga*, J. P. Saldarriaga1, D. A. Cooper1, J. A. Cartmill1, R. L. Stanko1,2, and G. L. Williams1, Texas A&M University Agricultural Research Station, Beeville, Texas A&M University, Kingsville.

Effects of ovulation rate and fetal number on fertility in twin-producing cattle. S. Echternkamp*, R. Cushman, and M. Allan, USDA, ARS, US Meat Animal Research Center, Clay Center, NE.

Factors affecting ovulatory follicle size and ovulation success to GnRH-induced ovulation in postpartum beef cows. J. A. Atkins*, T. W. Geary2, K. J. Wells3, M. C. Lucy1, and M. F. Smith1, University of Missouri, Columbia, USDA ARS Fort Keogh, Miles City, MT, Washington State University, Pullman.

Progesterone concentrations after the first GnRH injection in a GnRH-based estrus synchronization protocol and AI pregnancy rates in primiparous cows exposed to bulls. J. G. Berardinelli* and S. A. Tauck, Montana State University, Bozeman.

### SYMPOSIUM

**Ruminant Nutrition**

Connecting Rumen Microbiology to Ruminant Nutrition: Are We There Yet?

**Chair:** Kenneth E. Griswold, Penn State Cooperative Extension and Bill Sanchez, Diamond V Mills, Inc.

**Sponsor:** West Central

Symposium meets AAVSB’S RACE requirement for 3 hr CE.

#### L100 A

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>212</td>
<td>Ruminal nitrogen metabolism: The current microbiological outlook. M. Morrison* and Z. Yu, The Ohio State University, Columbus.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>213</td>
<td>Ruminal nitrogen metabolism: The current nutritional outlook. J. L. Firkins*, The Ohio State University, Columbus.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:45 PM</td>
<td>214</td>
<td>Ruminal acidosis in beef cattle: The current microbiological outlook. T. G. Nagaraja* and E. C. Titgemeyer, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>215</td>
<td>Ruminal acidosis in beef cattle: The current nutritional outlook. E. C. Titgemeyer* and T. G. Nagaraja, Kansas State University, Manhattan.</td>
</tr>
</tbody>
</table>
Ruminant Nutrition
Non-fibrous Carbohydrate & By-Product Feedstuffs
Chair: Ken Kalscheur, South Dakota State University
101 B-C

2:00 PM 216 Influence of endosperm vitreousness and kernel moisture at harvest on site and extent of digestion of high moisture corn by steers. J. Szasz*, C. Hunt¹, P. Szasz², R. Weber², F. Owens², and W. Kezar², ¹University of Idaho, Moscow, ²Pioneer Hi-Bred International, Johnston, IA.

2:15 PM 217 Influence of endosperm vitreousness, moisture at harvest, and microbial inoculant on chemical composition, available starch and ruminal dry matter disappearance of ensiled high moisture corn. J. Szasz*, C. Hunt¹, P. Szasz², R. Weber², F. Owens², and W. Kezar², ¹University of Idaho, Moscow, ²Pioneer Hi-Bred International, Johnston, IA.

2:30 PM 218 Effects of feeding steam-rolled corn in lieu of dry-rolled corn on the odor of finishing beef steer manure. S. L. Archibeque¹, D. N. Miller², D. B. Parker¹, H. C. Freedly¹, and C. L. Ferrell¹, ¹USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²USDA, ARS, Soil and Water Conservation Research Unit, Lincoln, NE, ³West Texas A&M University, Canyon.

2:45 PM 219 Evaluation of dried distillers grains plus solubles compared to soybean hulls as a feedstuff for heifers during the last trimester of gestation. C. L. Engel*, H. H. Patterson, and G. A. Perry, South Dakota State University, Brookings.

3:00 PM 220 Starch and digestible fiber supplementation to orchardgrass hay based programmed gain heifer diets. R. L. Mills*, J. C. Waller¹, J. Dowlen¹, and C. J. Richards², ¹The University of Tennessee, Knoxville, ²Oklahoma State University, Stillwater.


3:30 PM 222 Effects of corn germ on digestibility of hay and corn. G. Kleinmans* and R. Pritchard, South Dakota State University, Brookings.

3:45 PM 223 Corn germ from ethanol production as an energy supplement for lactating dairy cows. M. M. Abdelqader*, A. R. Hippen¹, D. J. Schingoethe¹, K. K. Kalscheur¹, K. Karges², and M. L. Gibson², ¹South Dakota State University, Brookings, ²Dakota Gold Research Association, Sioux Falls, SD.

4:00 PM 224 Effect of fatty acid treatment of different particle size of rolled corn and barley on dry matter digestion in rumen studied in-situ. G. Bustamante¹, ² and I. B. Mandell¹, ¹Universidad Autonoma de Ciudad Juarez, Ciudad Juarez, Chihuahua, Mexico, ²University of Guelph, Guelph, Ontario, Canada.

4:15 PM 225 Evaluating in vitro cell wall polysaccharide digestibility of high-fiber byproduct feeds and forages. J. Wakker*, H. G. Junde¹, ², and J. G. Linn¹, ¹University of Minnesota, St. Paul, ²USDA-Agricultural Research Service, St. Paul, MN.

ADSA-SAD – Undergraduate Competition
Dairy Foods
Chair: Cathleen C. Williams, Louisiana State University
200 H

Time Abstract # Title of Abstract
2:00 PM 227 Effect of pasteurization on the survival of Mycobacterium avium paratuberculosis. A. Bush*, University of Kentucky, Lexington.
2:15 PM 228 Dairy foods and reduced risk of colon cancer. A. Greenbaum*, Louisiana State University, Baton Rouge.
2:45 PM 230 The rippling effects of processor expansion: A Texas sized example. S. Brauning*, Virginia Polytechnic Institute and State University, Blacksburg.

SYMPOSIUM
Sheep Species
Application of Genomics to Sheep Production
Chair: Noelle Cockett, Utah State University
Sponsor: USDA, Agricultural Research Service, U.S. Sheep Experiment Station
101 F-G

Time Abstract # Title of Abstract
2:00 PM 231 Resources available for sheep genomics research. N. E. Cockett*, T. S. Hadfield, C. H. Wu, and K. Nomura, Utah State University, Logan.
2:20 PM 232 Molecular tools for sheep breeding: DNA-based markers for monogenic traits and QTL. J. E. Beever* and A. D. Markey, University of Illinois, Urbana.
3:00 PM 233 How genomics will continue to improve productivity for the New Zealand sheep sector. T. Wilson*, AgResearch, University of Otago, Dunedin, New Zealand.
4:20 PM 235 Genomic regions associated with sheep muscle and carcass traits. C. Bidwell*1 and N. Cockett2, 1Purdue University, West Lafayette, IN, 2Utah State University, Logan.

SYMPOSIUM
Swine Species
Impact of ART in Swine Production: Current and Future
Chair: Mark Wilson, Minitube of America
Sponsors: National Pork Board, PIC, Ralco Nutrition Inc.
Symposium meets AAVSB’S RACE requirement for 3 hr CE.
L100 H-I

Time Abstract # Title of Abstract
2:00 PM Introduction. M. Wilson, Minitube of America, Verona, WI.
2:10 PM Bureaucracy around cloning and stem cells. R. Green, National Program Leader, USDA-ARS.
2:25 PM Semen sexing in swine. L. A. Johnson, ARS.
2:40 PM ART of genetic globalization. J. Dobrinsky, Minitube of America, Verona, WI.
2:55 PM An international perspective of cloning and advanced reproductive technologies. R. Campbell, Pork CRC, Willaston, SA, Australia.
The value producers see in ART and cloning. T. M. Coffey, *Smithfield*.

Biotechnology and production do they go together? G. Foxcroft, *University of Alberta, Edmonton, Alberta*.


### ADSA-SAD – Undergraduate Competition

**Original Research**

**Chair: Cathleen C. Williams, Louisiana State University**

**200 H**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 PM</td>
<td>236</td>
<td>Probiotic ice cream manufactured with a weight loss ingredient.</td>
<td>M. Brown* and K. J. Aryana, <em>Louisiana State University, Baton Rouge.</em></td>
</tr>
<tr>
<td>3:45 PM</td>
<td>239</td>
<td>A critique of RFV: Comparing RFV to degradation parameters and proposal of an alternative model. T. J. Hackmann* and J. N. Spain, <em>University of Missouri, Columbia.</em></td>
<td></td>
</tr>
<tr>
<td>4:00 PM</td>
<td>240</td>
<td>Effects of dietary addition of unsaturated fat, vitamin E, and sorbitol on performance of dairy cows and fatty acid concentrations in milk. A. Todd*, M. L. Eastrand, C. V. D. M. Ribeiro, J. Engel, and B. Mathew, <em>The Ohio State University, Columbus.</em></td>
<td></td>
</tr>
</tbody>
</table>

### SYMPOSIUM

**Companion Animals**

**Advances in Companion Animals - BioMarkers**

**Chair: Greg Aldrich, Pet Food & Ingredient Technologies, Inc.**

**Sponsors: Nestle Purina PetCare, The Iams Company**

**200 F-G**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:35 PM</td>
<td>244</td>
<td>Mapping QTL for osteoarthritis in dogs. R. G. Mateescu*1, N. I. Burton-Wurster1, G. Lust1, K. Tsai2, J. Phavaphutanon1, and R. J. Todhunter1, ^1Cornell University, Ithaca, NY, ^2Texas A&amp;M University, College Station, ^1Kasetsart University, Nakhon-Pathom, Thailand.</td>
<td></td>
</tr>
<tr>
<td>3:50 PM</td>
<td></td>
<td>Nutritional effects on gene expression in canine tissues. K. Swanson, <em>University of Illinois, Urbana.</em></td>
<td></td>
</tr>
<tr>
<td>4:10 PM</td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>4:20 PM</td>
<td></td>
<td>Obesity related biomarkers in companion animals. R. Yamka and K. Friesen, <em>Hill’s Pet Nutrition, Topeka, KS.</em></td>
<td></td>
</tr>
<tr>
<td>4:40 PM</td>
<td></td>
<td>The future of companion animal research at land grant universities. D. L. Harmon, <em>University of Kentucky, Lexington.</em></td>
<td></td>
</tr>
<tr>
<td>4:50 PM</td>
<td></td>
<td>Reception</td>
<td></td>
</tr>
</tbody>
</table>
Tuesday, July 11

POSTER PRESENTATIONS

Animal Health II
Exhibit Hall A

Abstract #

T1 Release of CD14 by bovine neutrophils results in down-regulation of IL-8. M. Paape*1, E. Sohn2, E. Connor1, R. Fetterer1, R. Peters2, and D. Bannerman1, 1USDA-ARS, Beltsville, MD, 2University of Maryland, College Park.

T2 Assessing changes in gene expression in mammary tissue following experimental induction of Staphylococcus aureus mastitis using a cDNA microarray. J. Kelsey*1, K. Bayles2, L. Fox1, and M. McGuire1, 1University of Idaho, Moscow, 2University of Nebraska Medical Center, Omaha, 3Washington State University, Pullman.

T3 High growth rate fails to enhance adaptive immune responses of neonatal calves and is associated with decreased T cell viability. M. Foote*1, B. Nonnecke2, W. Waters2, D. Beitz1, M. Fowler3, T. Johnson1, and B. Miller3, 1Iowa State University, Ames, 2USDA, ARS National Animal Disease Center, Ames, IA, 3Land O’Lakes Inc. Research Farm, Webster City, IA.

T4 Determination of endoparasites population in water buffalos (Bubalus bubalis) in Magdalena Medio, Colombia. G. A. Prada-Sanmiguel*, Universidad de La Salle, Facultad de Medicina Veterinaria, Bogotá, Distrito Capital, Colombia.

T5 Lymphocyte, neutrophil, and mineral responses to S. aureus and E. coli mastitis. H. R. Springer*1, J. P. Goff2, D. D. Bannerman3, and M. J. Paape3, 1Iowa State University, Ames, 2USDA-ARS National Animal Disease Center, Ames, IA, 3Bovine Functional Genomics Laboratory, Beltsville, MD.

T6 Development of a ruminant fescue toxicosis model. S. S. Block*, P. H. Doane, and M. J. Cecava, ADM Animal Nutrition Research, Decatur, IN.

T7 The relationship of copper and zinc with hematological parameters in beef cattle. M. Soch*1, P. Srejberova2, and J. Broucek3, 1University of South Bohemia, Faculty of Agriculture, Ceske Budejovice, Czech Republic, 2Czech Beef Breeders Association, Prague, Czech Republic, 3SCPV, Nitra, Slovakia.

T8 Production of bacteriocins by bacterial isolates from dairy cattle. M. A. V. P. Brito*1 and G. A. Somkuti2, 1EMBRAPA Dairy Cattle Research Center, Juiz de Fora, Brazil, 2Eastern Regional Research Center, USDA-ARS, Wyndmoor, PA.


T10 Effects of source of supplemental Se on health and immune status of periparturient dairy cows. H. M. Rutigliano*1, R. L. A. Cerri1, F. S. Lima1, L. F. Vettorato1, D. B. Araujo1, J. Hillegass1, W. W. Thatcher2, and J. E. P. Santos1, 1University of California Davis, Tulare, 2University of Florida, Gainesville.

Breeding & Genetics II
Exhibit Hall A

Abstract #

T11 The effect of inbreeding on litter size in Chicago miniature pigs. Y.-C. Jung1, S.-H. Oh*2, M. T. See1, T. E. del Rosario1, and Y.-B. Kim3, 1Jung P&C Institute, Seongnam, Gyeonggi, South Korea, 2North Carolina State University, Raleigh, 3Rosalind Franklin University of Medicine and Science/Chicago Medical School, North Chicago, IL.


T13 Carcass characteristics of different breeds on beef cattle. A. A. Souza*, L. Suguisawa, H. N. Oliveira, and A. C. Silveira, São Paulo State University, Brazil.

T14 Estimation of genetic parameters for growth traits and image analysis traits of carcass cross section in Japanese Black steers. T. Osawa*, K. Kuchida1, S. Hidaka1, and H. Tsukuda2, 1Obihiro University of A & VM, Obihiro-shi, Hokkaido, Japan, 2Livestock Improvement Association of Japan, Makibetsu-cho, Hokkaido, Japan.

T15 Genetic parameters estimation of birth weight for cashmere goat in southern Khorasan province of Iran. H. Naeemipour*, H. Farhangfar, and M. R. Asghari, Birjand University, Birjand, Iran.

T16 Genetic analysis of weight records at different ages in Baluchi sheep breed of Iran. M. Mollaee1, H. Farhangfar*2, and H. Naeemipour2, 1Zabol University, Zabol, Iran, 2Birjand University, Birjand, Iran.
T17 Estimation of genetic parameters for weight at different ages in Lori-Bakhtiari sheep breed of Iran. B. Zinvand\textsuperscript{2} and H. Farhangfar*\textsuperscript{1}, \textsuperscript{1}Birjand University, Birjand, Iran, \textsuperscript{2}Zabol University, Zabol, Iran.

T18 Genetic analysis of average daily gains in Lori-Bakhtiari sheep breed of Iran using orthogonal legendre polynomials. H. Farhangfar*\textsuperscript{1}, H. Naeemipour\textsuperscript{1}, M. Zinvand\textsuperscript{2}, and M. Hosseini\textsuperscript{1}, \textsuperscript{1}Birjand University, Birjand, Iran, \textsuperscript{2}Zabol University, Zabol, Iran.

T19 Genetic analysis of weight records in Zel sheep breed of Iran. A. Vafadar*\textsuperscript{1}, H. Farhangfar\textsuperscript{2}, and H. Naeemipour\textsuperscript{1}, \textsuperscript{1}Zabol University, Zabol, Iran, \textsuperscript{2}Birjand University, Birjand, Iran.

T20 Correlation of DGAT1 genetic variants with fat content in the Cal Poly herd. A. Laubscher*\textsuperscript{1}, S. Henderson\textsuperscript{1}, J. F. Medrano\textsuperscript{2}, G. Rincón\textsuperscript{1}, and R. Jiménez-Flores\textsuperscript{1}, \textsuperscript{1}California Polytechnic State University, San Luis Obispo, \textsuperscript{2}University of California, Davis.


T22 The allele and genotype frequencies of bovine pituitary-specific transcription factor and leptin genes in Iranian cattle and buffalo populations using PCR-RFLP. A. Javanmard*\textsuperscript{1}, N. Asadzadeh\textsuperscript{1}, M. H. Banabazi\textsuperscript{1}, and J. Tavakolian\textsuperscript{1}, \textsuperscript{1}West and North-West Agriculture Biotechnology Research Institute(ABRII-T), TABRIZ, East Azerbaijan, Iran, \textsuperscript{2}Department of Animal Production and Management, Animal Science Research Institute of Iran (ASRI), Tehran, Karaj, Iran, \textsuperscript{3}Department of Biotechnology, Animal Science Research Institute of Iran (ASRI), Tehran, Karaj, Iran.

T23 Polymorphism of bovine lymphocyte antigen DRB3.2 alleles in Iranian Holstein cattle. M. Pashmi*\textsuperscript{1}, A. Salehi\textsuperscript{1}, A. Ghorashi\textsuperscript{2}, M. R. Mollasalehi\textsuperscript{1}, and A. Javanamrd\textsuperscript{4}, \textsuperscript{1}Department of Animal Science, University of Tehran, Aborouhan, Tehran, Iran, \textsuperscript{2}National Research Center for Genetic Engineering and Biotechnology, Tehran, Tehran, Iran, \textsuperscript{3}National Animal Breeding Center, Karaj, Iran, \textsuperscript{4}North West and West Agriculture Biotechnology Research Center(ABRII), Tabriz, Iran.

T24 Estimation of genome wide haplotype effects in half-sib designs. D. Kolbeldhari*\textsuperscript{1,2}, L. R. Schaeffer\textsuperscript{2}, and J. A. B. Robinson\textsuperscript{2}, \textsuperscript{1}University of Tehran, Tehran, Iran, \textsuperscript{2}University of Guelph, Guelph, Ontario, Canada.

T25 Genetic diversity in piracanjuba populations Brycon orbignyanus with the RAPD (random amplified polymorphic dna) markers. N. M. Lopera Barrero*\textsuperscript{1}, R. P. Ribeiro\textsuperscript{1}, R. N. Sirol\textsuperscript{2}, J. A. Povh\textsuperscript{1}, P. Gomes\textsuperscript{1}, L. Vargas\textsuperscript{1}, and D. P. Streit Jr.\textsuperscript{1}, \textsuperscript{1}Universidade Estadual De Maringá, Maringá, Paraná, Brazil, \textsuperscript{2}Duke Energy International, Geração Paranañema, Salto Grande, São Paulo, Brazil.

T26 Handling inbreeding and overlapping generations within QTL-mapping. G. Freyer\textsuperscript{1} and N. Vukasinovie\textsuperscript{2}, \textsuperscript{1}Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany, \textsuperscript{2}Monsanto Animal AG, St. Louis, MO.


T28 Relationship between calpastatin gene polymorphism and beef cattle growth, carcass and meat quality traits. L. Suguisawa, A. A. Souza\textsuperscript{1}, H. N. Oliveira, A. C. Silveira, and R. A. Curty, São Paulo State University, Brazil.

T29 Corn oil or Corn grain supplementation to forage-finished steers. IV. Effects on gene expression of lipogenic enzymes in the s.c. adipose tissue. E. Pavan*\textsuperscript{1,2}, S. Joseph\textsuperscript{1}, K. Robbins\textsuperscript{1}, S. Duckett\textsuperscript{3}, and R. Rekaya\textsuperscript{1}, \textsuperscript{1}University of Georgia, Athens, \textsuperscript{2}INTA, Balcarce, Bs. As., Arg., \textsuperscript{3}Clemson University, Clemson, SC.

---

**Companion Animals**

**Nutrition & Health**

**Exhibit Hall A**

---

**Abstract #**

**T30** Identification of canine markers related to obesity. R. Yamka* and K. Friesen, Hill’s Pet Nutrition, Inc., Topeka, KS.

**T31** Identification of feline markers related to obesity. R. Yamka* and K. Friesen, Hill’s Pet Nutrition, Inc., Topeka, KS.

**T32** Impact of age on gene expression profiles of canine brain tissue. K. Swanson*\textsuperscript{1}, C. Apanavicius, B. Vester, and N. Kirby, University of Illinois, Urbana.

**T33** Age impacts skeletal muscle gene expression profiles of young adult and geriatric dogs fed either an animal- or plant-protein based diet. L. Karr-Lilienthal\textsuperscript{1}, C. Apanavicius, B. Vester, and K. Swanson, University of Illinois, Urbana.

**T34** Diet impacts colonic gene expression profiles of young adult and geriatric dogs fed either an animal- or plant-protein based diet. B. Vester*, C. Apanavicius, L. Karr-Lilienthal, and K. Swanson, University of Illinois, Urbana.

**T35** Screening of epitopes of canine enteropathogenic viruses for the production of IgY. S.-E. Woo*\textsuperscript{1}, S.-O. Shin\textsuperscript{1}, J.-W. Kim\textsuperscript{2}, A.-R. Lee\textsuperscript{2}, S.-O. Shin\textsuperscript{2}, and S.-Y. Yang\textsuperscript{1}, \textsuperscript{1}Danhbiotech, Inc, Cheonan, Chungnam, Rep. of Korea, \textsuperscript{2}Dankook University, Cheonan, Chungnam, Rep. of Korea.

**T36** Comparison of yeast culture and brewers dried yeast as palatability enhancers in dry cat food. J. W. Jones*\textsuperscript{1}, B. Leiner\textsuperscript{2}, and H. M. Sullivan\textsuperscript{3}, \textsuperscript{1}Western Yeast Company, Chillicothe, IL, \textsuperscript{2}New Mexico State University, Las Cruces.
T37 Characterization of strains of Lactobacillus reuteri as potential probiotics for dogs. S. McCoy* and S. E. Gilliland, Oklahoma State University, Stillwater.


Dairy Foods
Chemistry and Microbiology
Exhibit Hall A

Abstract #


T42 The impact of B-glucan on the stability of model dairy protein dispersions. J. E. Bock, K. A. Schmidt*, and G. E. Milliken, Kansas State University, Manhattan.

T43 The stability of a functional dairy based beverage. K. A. Schmidt*, Kansas State University, Manhattan.


T48 Impact of trisodium citrate on rheology and microstructure of yogurt. T. Ozcan Yilsay*, W. J. Lee, and J. A. Lucey, Uludag University, Bursa, Turkey.

T49 Identification of off-flavor compounds in Whey protein concentrate using head space solid phase microextraction-gas chromatography-olfactometry -mass spectrometry. I. Javidipour and M. Qian*, Oregon State University, Corvallis.

T50 Off-flavor development of whey protein concentrate during storage investigated by headspace solid-phase microextraction-gas chromatography. I. Javidipour and M. Qian*, Oregon State University, Corvallis.

T51 Differentiation of cheese sauces made with different starches and evaluation of the effect of starch type on flavor loss using FTIR spectroscopy. M. C. M. Soledad*, C. J. Kuo, L. E. Rodriguez-Saona, and W. J. Harper, The Ohio State University, Columbus.

T52 Validation of ED-XRF as a reliable method for determining the mineral composition of skim milk powders. S. Uson*, C. Immoos, and R. Jiménez-Flores, California Polytechnic State University, San Luis Obispo.


T54 Evaluation of chemical properties and consumer perception of fluid milk from conventional and pasture-based production systems. A. E. Croissant*, L. Dean, S. Washburn, and M. A. Drake, North Carolina State University, Raleigh.
T55 Heat stability of skim milk powder. M. Faka*1, M. J. Lewis1, A. S. Grandison1, and H. Deeth2, 1University of Reading, Reading, United Kingdom, 2University of Queensland, Brisbane, Qld, Australia.

T56 Quantification of fructooligosaccharides in infant formula. S. Gokavi*, M. S. Alam, and M. Guo, University of Vermont, Burlington.


T58 Conjugated linoleic acid from butter fat is absorbed and incorporated into tissue lipids to a greater extent than when consumed as a dietary free fatty acid supplement. A. L. Lock*, D. E. Bauman1, and A. M. Salter2, 1Cornell University, Ithaca, NY, 2University of Nottingham, LEICS., UK.

T59 Production of the bacteriocin thermophilin 110 in whey-based media. G. A. Somkuti*, S. E. Gilbreth, and D. H. Steinberg, Eastern Regional Research Center, USDA-ARS, Wyndmoor, PA.

T60 Characterization of the indigenous microflora present in commercial Queso Fresco from Mexico. J. A. Renye Jr.*, G. A. Somkuti1, B. Vallejo-Cordoba1, D. L. Van Hekken1, and A. F. Gonzalez-Cordova1, 1USDA-ARS-NAA-ERRC, Wyndmoor, PA, 2CIAD, A.C., Hermosillo, Sonora, Mexico.

T61 Production of potassium acetate from cheese whey using immobilized cell fermentation. M. Alam*, J. Li, and M. Guo, University of Vermont, Burlington.


T63 Characterization of a two-component regulatory system implicated in the bile tolerance of Lactobacillus acidophilus NCFM. E. A. Pféifer*1, M. A. Azcarate-Peril12, and T. R. Klaenhammer12, 1North Carolina State University, Raleigh, 2Southeast Dairy Foods Research Center, Raleigh, NC.

T64 Characterization of a Gal+ Streptococcus thermophilus MR-1C recombinant strain. G. Robitaille*1, S. Moineau2, D. St-Gelais1, C. Vadeboncoeur1, and M. Britten1, Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint Hyacinthe, Quebec, Canada, 2Laval University, Quebec City, Quebec, Canada.

T65 Impacts of Gal+ phenotype on the capsule production by Streptococcus thermophilus MR-1C recombinant strain. G. Robitaille*1, S. Moineau1, D. St-Gelais1, C. Vadeboncoeur1, and M. Britten1, Food Research and Development Centre, Agriculture and Agri-Food Canada, Saint-Hyacinthe, Quebec, Canada, 2Laval University, Quebec city, Quebec, Canada.

T66 Pediocin production by Pediococcus acidilactici in co-culture with yogurt starter bacteria. G. A. Somkuti* and D. H. Steinberg, Eastern Regional Research Center, USDA-ARS, Wyndmoor, PA.

T67 Selective enumeration of different strains of Lactobacillus acidophilus in goat’s milk yogurt beverage. S. Li*, S. Gokavi, and M. Guo, University of Vermont, Burlington.

T68 Evaluation of adherence of Bifidobacterium and Lactobacillus strains to cell membranes by blot analysis and optical tweezers. C. Iñiguez*2,1, J. Sharpe1, E. Acedo-Félix2, and R. Jiménez-Flores2, 1California Polytechnic State University, San Luis Obispo, 2Centro de investigación en Alimentación y Desarrollo, Hermosillo, Sonora, Mexico.


T71 A novel yogurt manufactured with probiotic bacteria at various levels. S. Ganesh* and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

T72 Effect of Lactobacillus acidophilus inoculation level on yogurt properties during storage. D. W. Olson* and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

---

**Extension Education**

**Exhibit Hall A**

---

Abstract #

T73 Utilizing the Penn State dairy herd to evaluate precision feeding and the effects on ammonia emissions. V. Ishler*, N. Brown, and G. Varga, The Pennsylvania State University, University Park.


Record keeping on Idaho dairies. M. Chahine* and J. B. Glaze, Jr., *University of Idaho, Twin Falls.

Spanish language educational opportunities for Idaho dairy employees-raising healthy calves. M. Chahine*1, R. Norell2, S. Jensen3, J. Dalton4, R. Carranza5, S. Etter4, and R. Chebel4, 1University of Idaho, Twin Falls, 2University of Idaho, Idaho Falls, 3University of Idaho, Marsing, 4University of Idaho, Caldwell, 5Pfi zer Animal Health, Meridian, ID.

Spanish language educational opportunities for Idaho dairy employees-milkers. M. Chahine*, University of Idaho, Twin Falls.


Dairy VIP: A user-friendly computer program to compare the economic consequences of management changes on dairy farms. A. de Vries*, University of Florida, Gainesville.

Advising model for the dairy farm development in Mexico. V. Mariscal-Aguayo*1, H. Estrella-Quintero1, A. Martinez-Cuevas2, and S. Castro-Aguilar3, 1Universidad Autonoma Chapingo, Chapingo, Mexico, 2Asesor Independiente, Zapotlanejo, Jalisco, Mexico, 3Agropec Star, Guadalajara, Jalisco, Mexico.

Development model for farms. H. Estrella-Quintero*1,2 and V. Mariscal-Aguayo1, 1Universidad Autónoma Chapingo, Chapingo, México, 2Agropec Star, Guadalajara, Jalisco, México.


Survey response of beef exhibitors to radio frequency identification device. J. W. Lehmkuhler*1 and T. Quam2, 1University of Wisconsin-Madison, 2Wisconsin Cattlemen’s Association, Sun Prairie, WI.

Food Safety

Foodborne Pathogens in Beef and Dairy Cattle

Exhibit Hall A

Abstract #

Effect of plant extract supplementation on digestive tract microbiota and carcass contamination in young Holstein bulls receiving a high-concentrate diet. M. Devant*, C. Adelantado1, A. Anglada1, A. Bach1, and M. A. Calvo2, 1IRTA-Unitat de Remugants, Barcelona, Spain, 2UAB-Departament de Sanitati d’Anatomia Animals, Barcelona, Spain, 3ICREA, Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain.


Prevalence of Shiga toxin-producing *Escherichia coli* in beef cattle grazing irrigated pastures or rangeland forages during winter and spring. L. M. Bollinger*, H. S. Hussein1, M. R. Hall1, and E. R. Atwill2, 1University of Nevada, Reno, 2University of California-Davis, Tulare.

Prevalence of Shiga toxin-producing *Escherichia coli* in dairy cattle during winter and spring. H. S. Hussein*, L. M. Bollinger1, M. R. Hall1, and E. R. Atwill2, 1University of Nevada, Reno, 2University of California-Davis, Tulare.
Forages and Pastures
Silages and Dairy
Exhibit Hall A

Abstract #


T94 Effect of storage time on ruminal starch degradability in corn silage. J. R. Newbold*1, E. A. Lewis1, J. Lavrijssen1, H. J. Brand1, H. Vedder2, and J. Bakker2, 1Provimi Research and Technology Centre, Brussels, Belgium, 2BLGG, Oosterbeek, The Netherlands.


T96 Polymerase chain reaction for identification and quantification of *Lactobacillus buchneri* in silage. R. J. Schmidt*, S. Kim, M. G. Emara, and L. Kung, Jr., University of Delaware, Newark.


T98 High temperatures have detrimental effects on the stability of silage inoculants that have been rehydrated in water. C. N. Mulrooney*, W. Hu, and L. Kung, Jr., University of Delaware, Newark.

T99 Effect of corn silage maturity and mechanical processing on nutrient digestibility by lactating dairy cows of different lactation stages. G. Ferreira and D. R. Mertens*, 1University of Wisconsin, Madison, 2USDA-ARS, US Dairy Forage Research Center, Madison, WI.

T100 Conjugated linoleic acid and omega-3 fatty acids in milk of grazing dairy cows fed fish oil and linseed oil. W. Brown*, A. AbuGhazaleh†, and S. Ibrahim‡, 1Southern Illinois University, Carbondale, 2North Carolina A&T State University, Greensboro.


T102 An evaluation of various nitrogenous additives or a microbial inoculant on the fermentation and aerobic stability of corn silage. R. J. Schmidt*, P. G. Summer, and L. Kung, Jr., 1University of Delaware, Newark, 2Ajinomoto USA, Inc., Eddyville, IA.

T103 Corn silage genotype effects on intake, digestion, and milk production by dairy cows. J. P. Goeser*, R. D. Shaver, and J. G. Coors, University of Wisconsin, Madison.


T105 Fermentation characteristics of sugarcane silage mixing with *Gliricidia sepium* and cassava tops. T. Clavero*, R. Razz†, and J. Urdaneta‡, Centro de Transferencia de Tecnología en Pastos y Forrajes. Facultad de Agronomía. Universidad del Zulia, Maracaibo, Zulia, Venezuela, 1INA, San Felipe, Yaracuy, Venezuela.

T106 Use of effective microorganisms (EM) as additive for grass silage. E. González*, R. Casals‡, and E. Albanell†, 1Estación Experimental Pastos y Forrajes III, Central España, Matanzas, Cuba, 2Grup de Recerca en Remugants; Facultat Veterinaria, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain.

T107 Fermentation characteristics of hairy indigo (Indigofera hirsuta) and guinea grass (Panicum maximum) ensiled alone or in combination. O. Araujo-Febres* and R. Razz, Facultad de Agronomía. La Universidad del Zulia, Maracaibo, Venezuela.

Nonruminant Nutrition

Dietary Influences in Finishing Pigs

Exhibit Hall A
Effect of copper and zinc supplementation on growth performance, nutrient digestibility and carcass characteristics in finishing pigs. Y. H. Kim1, H. J. Kim*, B. J. Min2, J. H. Cho2, J. Y. Chen2, J. S. Yoo2, Q. Wang2, J. C. Park1, H. J. Jung1, I. C. Kim1, S. J. Lee1, and I. H. Kim1, 1Swine Research Division, National Livestock Research Institute, RDA, Cheonan, Chungnam, Korea, 2Dankook University, Cheonan, Chungnam, Korea.

Effects of dietary probiotic on growth performance, nutrient digestibility, blood characteristics and fecal noxious gas content in growing pigs. Y. J. Chen1*, K. S. Son1, B. J. Min1, J. H. Cho1, O. S. Kwon1, B. C. Park2, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2NutraBio Inc, Seoul, Korea.

Effect of feeding rye silage on growth performance, blood and carcass characteristics in finishing pigs. J. H. Cho*1, Y. K. Han1, B. J. Min1, Y. J. Chen1, H. J. Kim1, J. S. Yoo1, Q. Wang1, T. C. Ko2, Y. Hyun2, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2Dodram Be&F Inc, Eumseong, Chungbuk, Korea.

Effect of reducing dietary crude protein on growth performance, noxious gas emission from manure and blood urea nitrogen and IGF-1 concentrations of serum in nursery pigs. J. H. Cho*1, B. J. Min1, Y. J. Chen1, H. J. Kim1, J. S. Yoo1, Q. Wang1, T. C. Ko2, Y. Hyun2, and I. H. Kim1, 1Dankook University, Cheonan, Chungnam, Korea, 2Dodram Be&F Inc, Eumseong, Chungbuk, Korea.

Physiology and Endocrinology
Reproductive Physiology
Exhibit Hall A

Production and cryopreservation of embryos from Sarabi cattle. M. H. Fazeli*1,2 and S. M. Mirtorabi2, 1Azad University, Shahre Kord Campus, Shahre Kord, Iran, 2Animal Breeding Center, Karaj, Iran.

Fertility of bull semen imported or domestically produced in Iran. M. H. Fazeli*1,2, F. Raeissi1, A. Haghighat Nia1, H. Nabizadeh2, and F. Zamani2, 1Azad University, Shahre Kord Campus, school of Veterinary Medicine, Share Kord, Iran, 2AI Center, Nahadehaye Dami Jahad, Karaj, Iran, 3Damshid Softwares, Tehran, Iran.


Observed and predicted numbers of single, twin, and triplet births in a cattle population selected for increased twinning. G. L. Bennett*, M. F. Allan, R. A. Cushman, and S. E. Echternkamp, USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE.

Effects of estradiol and testosterone on the peripheral and anterior pituitary IGF system in barrows. J. A. Clapper* and E. M. Stansbury, South Dakota State University, Brookings.

Accuracy of pregnancy diagnosis in Holstein cows using transrectal ultrasonography based on a serum pregnancy associated glycoprotein (PAG) ELISA. E. Silva*, R. A. Sterry1, D. Kolb2, N. Mathialagan1, M. F. McGrath1, J. M. Ballam3, and P. M. Fricke1, 1University of Wisconsin, Madison, 2Lodi Veterinary Clinic, Lodi, WI, 3Monsanto Agricultural Company, St Louis, MO.


Effect of neonatal environment on adult reproductive function of boars. J. K. Griffin*, M. C. Seal, and W. L. Flowers, North Carolina State University, Raleigh.

Gonadal response to HCG and GnRH analog in male sheep exposed to excess prenatal testosterone. S. E. Recabarren*, P. P. Rojas-Garcia1, M. P. Recabarren1, V. Alfaro1, R. Smith1, and T. Sir-Petermann1, 1University of Concepcion, Chillan, Chile, 2University of Chile, Santiago, 3University of Chile, Santiago.

Impact of exogenous ghrelin administration on circulating concentrations of luteinizing hormone in steers. J. A. Daniel*, G. A. Perry, and A. E. Wertz-Lutz, South Dakota State University, Brookings.

Assessment of a practical method for identifying anovular dairy cows synchronized for first postpartum timed artificial insemination. E. Silva*, R. A. Sterry, and P. M. Fricke, University of Wisconsin, Madison.
T143 Relationship between metabolic hormones and ovulation of dominant follicle at the first follicular wave postpartum in dairy cows. C. Kawashima*1, E. Kaneko1, C. Amaya Montoya1, M. Matsui1, T. Shimizu1, N. Matsunaga1, K. Kida1, Y-I. Miyake2, D. Schams2, and A. Miyamoto1.1Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Hokkaido, Japan, 2TU-Munich Weihenstephan, Freising-Weihenstephan, Germany.

T144 Reproductive performance of lactating dairy cows of different leptin genotype. R. C. Chebel*1 and J. E. P. Santos2, 1University of Idaho, Caldwell, 2University of California Davis, Tulare.


T146 Effect of estradiol cypionate before induction of ovulation on subsequent luteal lifespan in anoestrous Nelore cows. O. G. SáFilho and J. L. M. Vasconcelos*, FMVZ-UNESP, Botucatu, SP, Brazil.

T147 Effect of progesterone or 17B-estradiol on luteal lifespan in anoestrous Nelore cows. O. G. SáFilho*, C. C. Dias, and J. L. M. Vasconcelos, FMVZ-UNESP, Botucatu, SP, Brazil.

T148 Factors affecting conception of AI or ET in lactating cows. D. G. B. Demetrio*1, R. M. Santos2, C. G. B. Demetrio2, C. A. Rodrigues3, and J. L. M. Vasconcelos4, 1, 2FMVZ-UNESP, Botucatu, SP, Brazil, 3ESALQ-USP, Piracicaba, SP, Brazil, 4SAMVET, São Carlos, SP, Brazil.

T149 Induction of ovulation in sheep using a novel recombinant gonadotropin with dual (LH and FSH) activity. E. P. Lemke*1, B. M. Adams1, I. Boime2, and T. E. Adams1, 1University of California, Davis, 2Washington University, St. Louis, MO.


T151 Postpartum follicular development in Brahman cows under two grazing densities. R. Soto1, C. S. Galina1, I. Rubio2, E. Castillo2, I. Hernandez2, and F. Alarcon1, 1Universidad Nacional Autónoma de México, Ciudad Universitaria, 2Universidad Nacional Autónoma de México, Martinez, de la Torre, Veracruz.

Production, Management and the Environment II
Exhibit Hall A

Abstract #

T152 Eating behavior and the decline in feed intake of Holstein cows during the transition period. P. D. French*, M. A. DeGroot, and J. L. Chamberlain, Oregon State University, Corvallis.

T153 The simulated economic return of using Ovsynch in dairy herds. P. D. French*, Oregon State University, Corvallis.

T154 Effect of yeast (saccharomyces cervisiae) on prepartum and postpartum dry matter intake and performance of Holstein dairy cows. F. Kafilzadeh* and Y. Ghorbani, Razi University, Kermanshah, Kermanshah, Iran.

T155 Effect of extending the voluntary waiting period on lactation performance of Holstein cows. J. A. Rodrigues*1, R. C. Chebel1, and J. E. P. Santos2, 1University of Idaho, Caldwell, 2University of California, Tulare.


T158 Effect of synchronization protocols on reproductive performance of Holstein heifers. J. L. Stevenson*1, R. C. Chebel1, J. C. Dalton1, and J. E. P. Santos2, 1University of Idaho, Caldwell, 2University of California, Tulare.


T160 Ability of consistency index to predict SCC standard violations in the next 7 or 30 days. J. M. Lukas*, M. L. Kinsel2, and J. K. Reneau1, 1University of Minnesota, St Paul, 2Agricultural Information Management Inc., Ellensburg, WA.

T161 The relationship between bodyweight change and disease incidence in early lactation. E. M. Marion*1, C. D. Dechow1, J. A. D. R. M. Appuhamy2, and B. G. Cassell2, 1The Pennsylvania State University, University Park, 2Virginia Polytechnic University, Blacksburg.

T162 Effects of environmental factors during rearing on milk yield after first calving. J. Broucek*1, S. Mihina1, C. W. Arave2, P. Kiasa1, M. Uhrinca1, P. Flak1, and A. Hanus1, 1Research Institute of Animal Production, Nitra, Slovakia, 2Utah State University, Logan.


Physiological responses of Holstein cows (white or black hair coat) under different solar loads: An environmental chamber study. C. N. Lee*, P. Hillman2, R. Collier*, and K. Gebremedhin*, University of Hawaii-Manoa, Honolulu, Cornell University, Ithaca, NY, University of Arizona, Tucson.

Frequency and potential production losses from low and inverted fat-protein ratios (FPR) for Pennsylvania dairy herds. R. Goodling*, K. Griswold, and T. Beck, Penn State Cooperative Extension, University Park.

Effect of dry period length on health and production of Holstein cows during the subsequent lactation. R. D. Watters*, J. N. Guenther1, A. E. Kulick1, P. W. Clark2, and R. R. Grummer1, University of Wisconsin, Madison, University of Wisconsin, River Falls.

Conception rate and pregnancy loss rate in lactating Holstein cows of a single herd following timed insemination or insemination at detected estrus. D. J. Ambrose*, T. Govindarajan2, and L. A. Goonewardene1,2, Alberta Agriculture Food and Rural Development, Edmonton, Alberta, Canada, University of Alberta, Edmonton, Alberta, Canada.


The effects of month of insemination and temperature-humidity index on non-return rate in Pennsylvania Holsteins. C. D. Dechow1, M. L. O’Connor*, A. L. Mosholder1, G. J. Killian1, and S. Schnell2, The Pennsylvania State University, University Park, Genex Cooperative, Inc., Shawano, WI.


Ruminal Nutrition
Acidosis
Exhibit Hall A


Effects of chronic metabolic acidosis on acid-base balance and plasma free amino acids in lambs. N. E. Odongo1, J. E. Las*, S. Wadud1, O. AlZahal1, M. Lindinger1, A. Shoveller1, J. C. Matthews2, and B. W. McBride1, University of Guelph, Guelph, Ontario, Canada, University of Kentucky, Lexington.

The severity of ruminal acidosis in primiparous Holstein cows near parturition. G. B. Penner*, K. A. Beauchemin2, and T. Mutsvangwa1, University of Saskatchewan, Saskatoon, SK, Canada, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.


Effects of rumen acid-load from feed and forage particle size on ruminal pH, feed intake and milk production and composition. B. Rustomo*, O. AlZahal1, N. E. Odongo, T. F. Duffield, and B. W. McBride, University of Guelph, Guelph, Ontario, Canada.

Effect of physically effective fiber on chewing and ruminal pH of dairy cows fed diets containing barley or corn grains. W. Z. Yang* and K. A. Beauchemin, Research Center, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Sampling ruminal pH: How many days and how frequent within day? C. Leonardi*, K. M. Krause1, and D. K. Combs1, Louisiana State University, Baton Rouge, West Virginia University, Morgantown, University of Wisconsin, Madison.
Intake, digestibility, and performance of crossbred steers fed diets containing high levels of urea. F. H. M. Chizzotti*1,2, O. G. Pereira3, L. O. Tedeschi4, S. C. Valdares Filho1, M. L. Chizzotti2, L. M. Moura1, I. C. S. Belo1, and D. H. Pereira1, 1Universidade Federal de Vícosa, Vícosa, MG, Brazil, 2Texas A & M University, College Station.


Optimal level of corn distillers dried grains in a no roughage diet for pre-conditioned calves. J. E. Williams*, F. Farias, J. M. Wilson, and M. S. Kerley, University of Missouri, Columbia.

Effect of bacterial inoculants or ammonia on aerobic stability of high moisture ear corn and finishing performance of steers. E. Diaz*1, A. Amyot2, C. Thivierge1, R. Berthiaume1, and D. R. Ouellet1, 1Laval University, Quebec, QC, Canada, 2IRDA, Deschambault, QC, Canada.


Effect of corn processing and soybean meal treatment on performance of finishing beef steers fed corn silage based diet. D. R. Ouellet*1, M. D’Amours2, R. Berthiaume1, L. Faucitano1, and D. Pellerin2, 1Dairy and Swine R&D Centre, Agriculture and AgriFood Canada, Lennoxville, QC, Canada.

Influence of supplements on performance of grazing steers during the dry season in Brazil. C. E. S. Baroni*1, R. P. Lana1,2, A. B. Mâncio1, D. M. Lambertucci1,2, and B. P. C. Mendonça1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2CNPq, Brasilia, DF, Brazil.

Effects of different growing systems on performance of feedlot cattle. J. T. Vasconcelos*1,2, J. E. Sawyer1, L. O. Tedeschi1, L. W. Greene2, and F. T. McCollum, III1, 1Texas A&M University, College Station, 2Texas A&M University, Amarillo.

Influence of Ractopamine-HCl and ground white corn or steam-flaked white corn based-diets on growth performance of finishing Brahman cross bulls. R. Barajas*1, J. M. Romo1, B. J. Cervantes1, R. J. Virgilio1, and J. J. Lomeli1, 1FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico, 2Tecnologia de Maxima Produccion, S.A. de C.V., Culiacan, Sinaloa, Mexico.

Effect of Ractopamine-HCl and ground white corn or steam-flaked white corn based-diets on carcass characteristics of finishing Brahman cross bulls. R. Barajas*1, J. M. Romo1, B. J. Cervantes1, R. J. Virgilio2, and J. J. Lomeli1, 1FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico, 2Tecnologia de Maxima Produccion, S.A. de C.V., Culiacan, Sinaloa, Mexico.


Effects of ractopamine and implant regimens containing trenbolone acetate and estradiol on growth and carcass characteristics of feedlot steers. T. C. Bryant*1,2, J. J. Wagner2, S. B. Lauder1, and M. L. Galyean1, 1Five Rivers Cattle Feeding, Loveland, CO, 2Colorado State University, Fort Collins, 3Elanco Animal Health, Greenfield, IN, 4Texas Tech University, Lubbock.

Influence of live weight at first implanting on growth performance and carcass characteristics of calf-fed Holstein steers. R. A. Zinn1, N. Torrentera*2, and F. Calderon1, 1University of California, Davis, 2UABC, Mexicali, BC, MX.


**Abstracts for Tuesday, July 11, 2006 Poster Sessions**


### Comparison of net protein requirements for growth of bulls, steers, and heifers of Nellore x Red Angus crossbreds. M. L. Chizzotti**1,2, S. C. Valadares Filho1, L. O. Tedeschi2, G. E. Carstens2, F. H. M. Chizzotti1,2, M. A. Fonseca1, L. C. Silva1, and M. I. Marcondes1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Texas A & M University, College Station.

### Comparison of energy requirements for maintenance and growth of steers, bulls, and heifers of Nellore x Red Angus crossbreds. M. L. Chizzotti**1,2, S. C. Valadares Filho1, L. O. Tedeschi2, G. E. Carstens2, F. H. M. Chizzotti1,2, M. A. Fonseca1, L. C. Silva1, and P. D. B. Benedeti1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Texas A & M University, College Station.

### Maintenance energy requirements of Nellore bulls in Brazil. P. V. R. Paulino*, S. C. Valadares Filho1, M. A. Fonseca1, K. A. Magalhães1, E. Detmann1, and R. D. Sainz2, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2University of California, Davis.

### Predicting dry matter intake of Nellore cattle in Brazil. P. V. R. Paulino*, S. C. Valadares Filho1, E. Detmann1, J. A. G. Azevêdo1, D. S. Pina1, M. I. Marcondes1, M. A. Fonseca1, and R. D. Sainz2, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Universidade Estadual de Santa Cruz, Ilhéus, Bahia, Brazil, 1University of California, Davis.

## Ruminant Nutrition

### Minerals & Vitamins

### Exhibit Hall A

**Abstract #**

### T202 Net requirements of macrominerals for growth of steers, bulls, and heifers of Nellore x Red Angus crossbreds. M. L. Chizzotti**1,2, S. C. Valadares Filho1, L. O. Tedeschi2, G. E. Carstens2, F. H. M. Chizzotti1,2, M. A. Fonseca1, L. C. Silva1, and M. I. Marcondes1, 1Universidade Federal de Viçosa, Viçosa, MG, Brazil, 2Texas A & M University, College Station.

### T203 Dietary factors affecting phosphorus digestion in lactating cows. T. H. Yang*, K. F. Knowlton1, C. Shang2, E. Schwab2, D. Berry1, L. Zelazny2, N. Whitehouse1, K. Pence1, and C. Schwab1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2University of Wisconsin, Madison, 3University of New Hampshire, Durham.

### T204 Exogenous phytase plus cellulase and nutrient excretion and digestibility in lactating cows. M. S. Taylor*, S. R. Hill1, K. F. Knowlton1, K. Wilson1, and C. Cobb1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Animal Feed Technologies, Greeley, CO.


### T206 Selenium deficiency in dual purpose cows and its correction with an intraruminal device in a tropical environment. E. Martinez Cuevas**, M. Huerta Bravo1, R. Lopez Arellano2, J. G. García Muñiz1, and R. Ramírez Valverde1, 1Universidad Autónoma Chapingo, Chapingo, Mexico, 2Universidad Nacional Autónoma de Mexico, Cuautitlan, Mexico, Mexico.

### T207 Effects of nutrient restriction during early or late gestation and dietary Se supply on cell proliferation and vascularity in maternal jejunal tissue of sheep. J. J. Reed**, P. P. Borowicz1, R. Reddy1, S. L. Julius1, J. B. Taylor2, T. L. Neville1, L. P. Reynolds1, D. A. Redmer1, K. A. Vonnahme1, and J. S. Caton1, 1North Dakota State University, Fargo, 2USDA-ARS, US Sheep Experiment Station, Dubois, ID.

### T208 Effects of nutrient restriction during early or late gestation and dietary Se supply on Se concentrations in maternal and fetal tissues in sheep. T. L. Neville1, J. J. Reed1, R. Reddy1, M. A. Ward1, P. P. Borowicz1, J. B. Taylor2, K. A. Vonnahme1, M. Kappahan1, D. A. Redmer1, L. P. Reynolds1, and J. S. Caton1, 1North Dakota State University, Fargo, 2USDA-ARS, US Sheep Experiment Station, Dubois, ID.

### T209 Effects of nutrient restriction during early or late gestation and dietary Se supply on maternal and fetal intestinal growth in sheep. R. Reddy1, J. J. Reed1, T. L. Neville1, J. B. Taylor2, L. P. Reynolds1, D. A. Redmer1, K. A. Vonnahme1, and J. S. Caton1, 1North Dakota State University, Fargo, 2USDA-ARS, US Sheep Experiment Station, Dubois, ID.

### T210 Quality assessment of drinking water offered to dairy cows in central Iran. A. A. Najafi1, G. R. Ghorbani1, M. Alikhani1, and A. Nikkhah*, 1Isfahan University of Technology, Isfahan, Iran, 2University of Manitoba, Winnipeg, MB, Canada.

### T211 Silage to reduce dietary cation-anion difference. E. Charbonneau**, P. Y. Chouinard1, G. F. Tremblay2, G. Allard1, A. Brégard1, and D. Pellerin1, 1FSAA, Université Laval, Québec, QC, Canada, 2Agriculture and Agri-Food Canada, Ste-Foy, QC, Canada.

### T212 Hay to reduce dietary cation-anion difference (DCAD). E. Charbonneau**, P. Y. Chouinard1, G. F. Tremblay2, G. Allard1, A. Brégard1, and D. Pellerin1, 1FSAA, Université Laval, Québec, Québec, Canada, 2Agriculture and Agri-Food Canada, Ste-Foy, Québec, Canada.

### T213 Effect of high-sulfate water on trace mineral status of beef steers. C. L. Wright* and H. H. Patterson, South Dakota State University, Brookings.
Effect of dried and ensiled sainfoin, a tanniferous temperate climate forage legume, on the mineral metabolism of lambs. A. Scharenberg¹, A. Gutzwiller², Y. Artigo¹, U. Wyss¹, H. D. Hess¹, M. Kreuzer², and F. Dohme*¹, ¹Agroscope Liebefeld-Posieux, Swiss Federal Research Station for Animal Production and Dairy Products (ALP), Postex, Switzerland, ²Institute of Animal Sciences, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland.


Interaction of concentrate: Forage ratio and type of concentrate fed on growth performance and health of growing steers. P. Walker*¹, D. Adams¹, and R. Hall¹, ¹Illinois State University, Normal, ²Cooperative Research Farms, Richmond, VA.

Effects of organic zinc, manganese and copper on the mineral content of rumen bacteria and microbial fermentation in continuous culture. P. W. Cardozo¹, S. Calsamiglia*', and S. Andrieu², ¹Universitat Autonoma de Barcelona, Bellaterra, Spain, ²Alltech, Lexington, KY.

Effect of zinc source and level of on feedlot performance and carcass characteristics of finishing beef steers. J. C. Silva*¹, M. S. Brown¹, E. M. Cochran¹, E. Lauterbach¹, C. E. Smith Sr¹, L. D. Mitchell¹, C. K. Larson², and T. Ward², ¹West Texas A&M University, Canyon, ²Zinpro Corporation, Eden Prairie, MN.

Effect of cobalt supplementation during late gestation and early lactation on performance and serum concentrations of cobalt and vitamin B₁₂. R. L. Kincaid*¹, M. T. Socha³, ¹Washington State University, Pullman, ²Zinpro Corporation, Eden Prairie, MN.

Effects of supplemental biotin to dairy cows on in sacco forage NDF disappearance. C. W. Cruywagen*¹, G. Bunge, ¹Agriculture and Agri-Food Canada, Lennoxville, ²Université de Montréal, St-Hyacinthe, QC, Canada.

Effect of rumen protected choline and dry propylene glycol supplements on plasma folates and vitamin B12 in periparturient dairy cows. C. L. Girard*, Y. H. Chung², and G. A. Varga², ¹Agriculture and Agri-Food Canada, Lennoxville, QC, Canada, ²The Pennsylvania State University, University Park.

Apparent ruminal synthesis and intestinal absorption of free and total biotin in dairy cows. D. E. Santschi* and C. L. Girard, ¹Agriculture and Agri-Food Canada, Lennoxville, QC, Canada.


Effect of supplemental biotin to dairy cows on in sacco forage NDF disappearance. C. W. Cruywagen* and G. Bunge, ¹Stellenbosch University, Stellenbosch, South Africa.

Effect of feeding whole raw soybean and niacin to lactating cows in early lactation. M. Sari, A. A. Naserian*, R. Valizadeh, and S. Salari, ¹Ferdowsi University of Mashhad, Mashhad, Khorasan, Iran.

The effects of nicotinic acid supplementation during late-gestation on lipolysis and feed intake during the transition period. J. L. Chamberlain* and P. D. French, ¹Oregon State University, Corvallis.

Comparative evaluation of the transfer of two forms of Vitamin A into milk of dairy cows. S. Jurjanz*, Y. Le Roux¹, F. Rouffineau², and J. C. Robert², ¹Laboratoire de Sciences Animales, INRA-ENSAIA, Vandoeuvre, France, ²Adisseo France SAS, Commentry, France.

### Ruminant Nutrition

#### Rumen Fermentation Modifiers

**Exhibit Hall A**

**Abstract #**

**T229** Effects of high and low inclusion rate yeast culture products on in vitro batch culture ruminal fermentations. H. M. Sullivan* and R. A. Halalishe, New Mexico State University, Las Cruces.

**T230** Evaluation of the protective effect of probiotics given to dairy cows during a lactic acidosis challenge. J. Chiquette*, Dairy and Swine Research & Development Centre, Lennoxville, Quebec, Canada.

**T231** Effect of feeding Fermenten® to Holstein dairy cows on milk production, composition and blood metabolites. C. M. Martinez", Y.-H. Chung¹, M. E. White¹, E. Block², and G. A. Varga¹, ¹The Pennsylvania State University, University Park, ²Church & Dwight Co., Inc., Princeton, NJ.

**T232** Effect of Virginiamycin and Poulcox, or both, on performance of Holstein cows. L. Erasmus*¹, C. Muya¹, R. Coertze¹, S. Erasmus², and G. Catton¹, ¹University of Pretoria, Pretoria, South Africa, ²ARC-LBD, Irene, South Africa, ³D.G. Catton, Irene, South Africa.

---

**Tuesday, July 11, 2006 Posters Sessions**
Effects of monensin and dietary soybean oil on milk fatty acid profile in lactating cows. O. AlZahal*, N. E. Odongo, M. Or-Rashid, T. Mutsvangwa, T. F. Duffield, R. Baggi, P. Dick, G. Vessie, and B. W. McBride, 1University of Guelph, Guelph, Ontario, 2University of Saskatchewan, Saskatoon, Saskatchewan, 3Elanco Animal Health, Division Eli Lilly Canada Inc., Guelph, Ontario, Canada.

Effect of lasalocid or monensin supplementation on nitrogen metabolism in midlactating dairy cows. R. Martineau*, C. Benchaar, H. V. Peit, H. Lapierre, D. R. Ouellet, D. Pellerin, and R. Berthiaume, 1Université Laval, Québec, Canada, 2Dairy and Swine R&D Centre, AAFC, Lennoxville, Québec, Canada.

Effects of rumensin and bovine somatotropin (bST) on productive and physiological parameters of Newzeland Holstein cows grazing alfalfa pasture. M. Tarazon*, S. Araiza, E. Rueda, and A. Nuñez, Universidad de Sonora, Santa Ana, Sonora, Mexico.

Effect of monensin supplementation during prepartum and transition phase on rumen fermentation and microbial efficiency. D. Srichana, M. S. Kerley, and J. N. Spain, 1University of Missouri, Columbia, 2Thammasat University, Phathumthani, Thailand.

Anise and capsicum as alternative to monensin in beef heifers fed a high-concentrate diet. I. Fandiño*, S. Calsamiglia, A. Ferret, and C. Kame,

Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma, SA, Bellegarde-sur-Valserine Cedex, France.

Optimal dose and combination of anise and capsicum as modifiers of ruminal fermentation in beef heifers. I. Fandiño*, S. Calsamiglia, A. Ferret, and C. Kame,

Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma, SA, Bellegarde-sur-Valserine Cedex, France.

Effects of alfalfa extract and a mixture of cinnamaldehyde and eugenol on rumen fermentation in beef heifers fed a high-concentrate diet. P. W. Cardozo, S. Calsamiglia*, A. Ferret, and C. Kame,

Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma SA, Bellegarde-sur-Valserine Cedex, France.

Anise, capsicum, and a mixture of cinnamaldehyde and eugenol modified rumen fermentation in beef heifers fed a high-concentrate diet. P. W. Cardozo, S. Calsamiglia*, A. Ferret, and C. Kame,

Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Pancosma, SA, Bellegarde-sur-Valserine Cedex, France.

Effects of in vitro effects of eleven essential oils on ruminal fermentation. A. V. Chaves*, G. Fraser, Y. Wang, K. A. Beauchemin, T. A. McAllister, and C. Benchar,

Agriculture and Agri-Food Canada Research Centre, Lethbridge, AB, Canada, 2Nova Scotia Agricultural College, Truro, NS, Canada, 3Agriculture and Agri-Food Canada Research Centre, Lenoxxville, QC, Canada.

Effects of enzymes and herbal extracts on in vitro fermentation kinetics of ruminant feeds. D. Colombatto*, A. D. Garciaarena, G. Lagos, C. Lago, and F. Nahara,

University of Buenos Aires, Argentina, 2EEA Balcarce INTA, Argentina, 3Porfence SRL, Argentina.

Effects of specific herbal extracts on in vitro fermentation kinetics of oats, alfalfa hay or a total mixed ration. D. Colombatto*, A. D. Garciaarena, A. J. Flores, J. M. Hernandez Vieray, M. Mazuranc, and C. Ionescu,

University of Buenos Aires, Argentina, 2EEA Balcarce INTA, Argentina, 3Argent Export SA Argentina, 4Pancosma Bioactives, France.

Effects of five botanicals on rumen microbial fermentation profile. M. Blanch*, S. Calsamiglia, P. Chicoteau, and B. Nielsen,

Universidad Autonoma de Barcelona, Bellaterra, Spain, 2NOR-FEED, Denmark.

Evaluation of level of plant botanicals in diets fed to lactating dairy cows. K. J. Daniels*, P. H. Doane, and M. J. Cecava, ADM Animal Nutrition Research, Decatur, IN.


Effect of carvacrol on ruminal fermentation in vitro. V. Noirot and C. Bayouthe,

Gémuel, Albi, France, 2ENSAT, Castanet-Tolosan, France.

Effect of plant extract supplementation on rumen fermentation and metabolism in young Holstein bulls receiving a high-concentrate diet. A. Anglada, M. Devant, and A. Bach,

Universitat Autonoma de Barcelona, Bellaterra, Spain, 2ICREA, Barcelona, Spain.

Evaluation of tannins on ammonia release of soybean meal protein under in vitro ruminal conditions. H. Carneiro*, T. A. Corrêa, and J. C. F. Lima,

Empresa Brasileira de Pesquisa Agropecuária, Juiz de Fora, MG, Brazil, 2Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brazil.


Texas A&M University, College Station, 2USDA/ARS, Food & Feed Safety Research Unit, College Station, TX.


Tuesday, JULY 11, 2006 POSTERS SESSIONS
Swine Species
Exhibit Hall A

Abstract #
T254 Protein source affects feed palatability in piglets. D. Solà-Oriol1, E. Roura*2, and D. Torrallardona1, 1IRTA-Centre de Mas Bové, Reus, Spain, 2Lucta SA, Barcelona, Spain.

T255 Estimation of the ideal ratio of threonine:lysine in diets for growing pigs weighing 30-60 kg. I. Moreira*, D. Paiano1, P. L. O. Carvalho1, A. R. Poveda Parra1, A. R. B. Quadros2, and L. S. Perdigão1, 1Universidade Estadual de Maringá, Maringá, Paraná, Brazil, 2Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil.


T257 Nucleotide supplementation enhances piglet performance. S. Tibble*, P. Koppel2, and T. van Kempen1, 1SCA Iberica, Spain, 2Chemoforma Ltd., Switzerland, 3Provimi RTC, Belgium.

T258 Palatability of diets with different oil and fat sources in piglets. D. Solà-Oriol1, E. Roura*2, and D. Torrallardona1, 1IRTA-Centre de Mas Bové, Reus, Spain, 2Lucta SA, Barcelona, Spain.

T259 Effect of inclusion of sweet potato (Ipomoea batatas L) meal on weight gain and dressing percentage of finishing pigs. S. Pietrosemoli*, O. Moron, A. Paez, C. Chirinos, and A. Marrugo, La Universidad del Zulia, Maracaibo, Zulia, Venezuela.

T260 Effects of in-feed anti-salmonella egg yolk antibodies on growth performance and health status in weaned pigs challenged with Salmonella Typhimurium. S. Rattanatabtimtong*, A. Mathew, A. Saxton, S. Chattin, E. Jarboe, and R. Clift, University of Tennessee, Knoxville.


SYMPOSIA AND ORAL SESSIONS

ADSA Foundation Scholar Lecture - Dairy Foods
Chair: Kent A. Weigel, University of Wisconsin
Sponsor: ADSA Foundation
200 D-E

Time Abstract #
9:30 AM Applications of exopolysaccharides-producing lactic cultures in dairy products. A. Hassan, South Dakota State University, Brookings.

Danisco International Dairy Science Award Lecture
Chair: Lloyd Metzger, University of Minnesota
Sponsor: Danisco USA Inc.
200 D-E

Time Abstract #
10:30 AM Using enzymes to enhance the technological functionality of milk proteins. K.B. Qvist, Danisco A/S, Copenhagen, Denmark.
ALPHARMA Beef Cattle Nutrition Symposium
Chair: Steven Paisley, University of Wyoming
Sponsors: ASAS Foundation and Alpharma
Symposium meets AA VSB’S RACE requirement for 3 hr CE.

101 D-E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 AM</td>
<td></td>
<td>Regulation of growth and efficiency of meat animals by tissue mediated immune response. M. Spurlock, <em>Iowa State University, Ames.</em></td>
</tr>
<tr>
<td>11:40 AM</td>
<td></td>
<td>Summarization and research needs. K. Odde, <em>North Dakota State University, Fargo.</em></td>
</tr>
<tr>
<td>12:20 PM</td>
<td></td>
<td>Discussion.</td>
</tr>
</tbody>
</table>

SYMPOSIUM
Bioethics

Teaching Animal Ethics Within Today’s Animal Science Curriculum
Chair: Candace Croney, Oregon State University

101 A

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td></td>
<td>Introductions. C. Croney, <em>Oregon State University, Corvallis.</em></td>
</tr>
<tr>
<td>9:40 AM</td>
<td>245</td>
<td>Teaching bioethics in the animal sciences: Challenges and strategies. C. C. Croney<em>¹ and D. J. R. Cherney</em>², <em>¹Oregon State University, Corvallis, ²Cornell University, Ithaca, NY.</em></td>
</tr>
<tr>
<td>10:00 AM</td>
<td>246</td>
<td>Incorporating ethics into the undergraduate curriculum. D. J. R. Cherney<em>¹ and C. C. Croney</em>², <em>¹Cornell University, Ithaca, NY, ²Oregon State University, Corvallis.</em></td>
</tr>
<tr>
<td>10:20 AM</td>
<td>247</td>
<td>A successful model for teaching ethics to animal science students. J. Tannenbaum*, <em>University of California, Davis.</em></td>
</tr>
<tr>
<td>10:40 AM</td>
<td>248</td>
<td>Animal welfare, bio-ethics and animal sciences. E. A. Pajor*, <em>Purdue University, West Lafayette, IN.</em></td>
</tr>
<tr>
<td>11:00 AM</td>
<td></td>
<td>Discussion.</td>
</tr>
</tbody>
</table>

Breeding and Genetics

Dairy Breeds
Chair: Bennett Cassell, VPI&SU

L100 J

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>ADSA Pioneer</td>
<td>Dairy cattle genetics and breeding: The last 40 years. B. McDaniel, <em>North Carolina State University, Raleigh.</em></td>
</tr>
</tbody>
</table>


10:45 AM 253 Economic efficiency and genetic improvement of alternative breeding schemes for Taiwan dairy cattle population. C. L. Chang*1 and I. L. Mao2, 1Hsin-chu Branch, COA-LRI, Hsin-chu, Taiwan, ROC, 2Michigan State University, East Lansing.

11:00 AM Break

11:15 AM 254 Genetic parameters of monthly test day milk yields in Iranian buffaloes. H. Farhangfar*1 and J. Rahmaninia2, 1Birjand University, Birjand, Iran, 2Zabol University, Zabol, Iran.

11:30 AM 255 Revised estimates of lifetime net merit for dairy breeds and breed crosses. P. M. VanRaden and M. E. Tooker*, Animal Improvement Programs Laboratory, USDA, Beltsville, MD.

11:45 AM 256 A survey of Australian dairy farmers to establish farmer attitudes to crossbreeding. M. F. Pyman* and K. L. Macmillan, University of Melbourne, Werribee, Victoria, Australia.


12:30 PM 259 Genetic evaluation of milking speed for Brown Swiss dairy cattle. G. R. Wiggans*1, L. L. M. Thornton1, and R. R. Neitzel2, 1Animal Improvement Programs Laboratory, Agricultural Research Service, Beltsville, MD, 2Brown Swiss Association, Beloit, WI.

**SYMPOSIUM**

**Companion Animals**

**Companion Animal Research: Contributions and Conflicts**

Chair: Russ Kelley, The Iams Company

Sponsor: The Iams Company

200 B-C

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>260</td>
<td>Marrying science to society — hurdles for the use of companion animals in research. G. Golab*, American Veterinary Medical Association, Schaumburg, IL.</td>
</tr>
<tr>
<td>10:10 AM</td>
<td>261</td>
<td>Conserving endangered wild felids – the invaluable domestic cat connection. W. F. Swanson*, Cincinnati Zoo’s Center for Conservation and Research of Endangered Wildlife, Cincinnati, OH.</td>
</tr>
<tr>
<td>10:40 AM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:55 AM</td>
<td>Panel Discussion.</td>
<td></td>
</tr>
</tbody>
</table>
Financial records for dairy farms from across the USA. W. T. Cunningham*, Genske, Mulder & Company, LLP, Rancho Cucamongo, CA.


Factors affecting income and costs. B. Matlick, Moore Stephens Frazer and Torbet, LLP, Visalia, CA.

Northeast Dairy Profitability. D. Rogers*, First Pioneer Farm Credit, Enfield, CT.

Profitability of pasture-based versus confinement dairy farming. G. Benson* and S. Washburn, North Carolina State University, Raleigh.

Panel Discussion.

Development of a cost-effective method to enumerate Escherichia coli O157 in cattle feces. J. T. Fox*, D. G. Renter, M. W. Sanderson, and T. G. Nagaraja, Kansas State University, Manhattan.

Effect of vaccinating against type III secreted proteins of E. coli O157:H7 on its pre- and post-harvest occurrence on cattle hides. R. E. Peterson*, D. R. Smith, R. A. Moxley, T. J. Klopfenstein, and G. E. Erickson, University of Nebraska, Lincoln.

Influence of exogenous triiodothyronine (T3) on fecal shedding of E. coli O157 in cattle. T. S. Edrington*, T. R. Callaway1, D. M. Hallford2, R. C. Anderson1, and D. J. Nisbet1, USDA-ARS-FFSRU, College Station, TX, New Mexico State University, Las Cruces.

Isoamyl acetate application as a method to reduce pathogens and methane production in cattle prior to harvest. T. R. Callaway*, A. M. B. Prazak, T. S. Edrington, R. C. Anderson, and D. J. Nisbet, USDA/ARS, Food and Feed Safety Research Unit, College Station, TX.

Microbial characteristics of ground beef produced from beef trimmings treated with potassium lactate, sodium metasilicate, peroxyacetic acid or acidified sodium chlorite. S. A. Quilo*, F. W. Pohlman, A. H. Brown, P. G. Crandall, P. N. Dias-Morse, R. T. Baublits, and C. Bokina, University of Arkansas, Fayetteville.

Effects of feeding wet corn distiller’s grains with solubles and monensin and tylosin on the prevalence and antibiotic susceptibilities of fecal commensal and foodborne bacteria in feedlot cattle. M. Jacob*, J. T. Fox, S. Narayanan, J. S. Drouillard, and T. G. Nagaraja, Kansas State University, Manhattan.

Prevalence of Salmonella typhimurium in swine at slaughter. M. H. Rostagno*, H. S. Hurd2, and J. D. McKeant2, USDA, ARS, Livestock Behavior Research Unit, West Lafayette, IN, Iowa State University, Ames.

Resting pigs on transport trailers: A potential intervention to reduce Salmonella prevalence at slaughter. M. H. Rostagno*, H. S. Hurd2, and J. D. McKeant2, USDA, ARS, Livestock Behavior Research Unit, West Lafayette, IN, Iowa State University, Ames.

Project supported by the European Union to find alternatives to antibiotic growth promotors. G. Schatzmayer*, R. Beltran2, and K. C. Mountzouris1, BIOMIN GmbH, Herzogenburg, Austria, BIOMIN USA Inc., San Antonio, TX, Agricultural University of Athens, Athens, Greece.
Forages and Pastures
Silages
Chair: Charles Staples, University of Florida
M100 B-C

Time Abstract #
9:30 AM 277 Mastication and rumination effects on digestion and passage. M. R. Murphy* and K. E. Cowles, University of Illinois, Urbana.
10:00 AM 278 Effect of forage particle length and sorting of dietary ingredients by lactating dairy cows on performance and health. L. Armentano*, University of Wisconsin, Madison.
10:30 AM 279 Effect of brown midrib mutation and stage of development at harvest on chemical composition and in situ disappearance of millet forage. F Hassanat*, A. F. Mustafa, and P. Seguin, McGill University, Ste. Anne De Bellevue, Quebec-Canada.
10:45 AM 280 Performance of dairy cows fed soybean silage. E. Vargas*, A. F. Mustafa, and P. Seguin, McGill University, Ste-Anne-De-Bellevue, Quebec, Canada.
11:00 AM Break
11:15 AM 281 Effects of propionic acid-based additive (Solution Foin) on short-term ensiling characteristics of corn. T. Levit al*, A. F. Mustafa, and P. Seguin, McGill University, Montreal, QC, Canada.
11:30 AM 282 Genetic determinism and QTL mapping of plant parameters involved in the efficient and sustainable utilisation of forage maize in animal nutrition. L. A. Lethbridge¹, J. K. Margerison*¹, C. S. Brennan¹, M. Chrenkova², and L. Hentenyi², Massey University, Institute of Food, Nutrition and Human Health, Palmerston North, New Zealand, RIAP, Slovakia.
12:00 PM 284 Meta-analysis on the effect of main dietary forage on N excretion from dairy cows. V. R. Moreira¹ and C. Leonard², Louisana State University AgCenter Southeast Research Station, Franklinton, Louisana State University, Baton Rouge.
12:15 PM 285 Forage production and water use efficiency of 30 species used in the Australian dairy industry. J. S. Neal*, W. S. Fulkerson¹, and K. Greenwood², The University of Sydney, Camden, New South Wales, Australia, Department of Primary Industries Victoria, Kyabrum, Victoria, Australia.

SYMPOSIUM
Growth and Development
IGF and IGF Binding Proteins
Chair: James Sartin, Auburn University and Honglin Jiang, Virginia Tech
L100 A

Time Abstract #
9:30 AM 286 Insulin-like growth factor-I, a link between nutrient intake and growth. D. Clemmons*, University of North Carolina, Chapel Hill.
11:10 AM 287 Effects of short day photoperiod on mammary growth of dry cows: Altered prolactin and IGF signaling. G. E. Dahl¹, E. H. Wall², and T. B. McFadden², University of Illinois, Urbana, University of Vermont, Burlington.
SYMPOSIUM
Nonruminant Nutrition

New Frontiers in Amino Acid Research in Nonruminant Nutrition
Chair: Sung Woo Kim, Texas Tech University and Ming Fan, University of Guelph
Sponsors: Ajinomoto Co., Inc., Ajinomoto Heartland LLC

Symposium meets AAVSB’S RACE requirement for 3 hr CE.

L100 H-I

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>Introduction. S. W. Kim, Texas Tech University, Lubbock.</td>
<td>S. W. Kim, Texas Tech University, Lubbock.</td>
<td></td>
</tr>
<tr>
<td>9:35 AM</td>
<td>288</td>
<td>Branched chain amino acid metabolism and nutrition in monogastric animals. S. M. Hutson*1, P. She2, T. M. Reid1, M. Janket1, S. K. Bronson2, A. Sweatt1, and C. J. Lynch2, Wake Forest University School of Medicine, Winston-Salem, NC, Penn State College of Medicine, Medicine, Hershey.</td>
<td>S. M. Hutson*1, P. She2, T. M. Reid1, M. Janket1, S. K. Bronson2, A. Sweatt1, and C. J. Lynch2, Wake Forest University School of Medicine, Winston-Salem, NC, Penn State College of Medicine, Medicine, Hershey.</td>
</tr>
<tr>
<td>10:05 AM</td>
<td>289</td>
<td>Nutrition of the arginine-family amino acids in nonruminant animals. G. Wu*1,3, S. W. Kim2,1, D. A. Knabe1, and Y. L. Yin3, Texas A&amp;M University, College Station, Texas Tech University, Lubbock, The Chinese Academy of Sciences, Changsha, Hunan, P.R. China.</td>
<td>G. Wu*1,3, S. W. Kim2,1, D. A. Knabe1, and Y. L. Yin3, Texas A&amp;M University, College Station, Texas Tech University, Lubbock, The Chinese Academy of Sciences, Changsha, Hunan, P.R. China.</td>
</tr>
<tr>
<td>10:35 AM</td>
<td>290</td>
<td>Biological roles of tryptophan and its metabolism in pigs. N. Le Floc’h* and B Sève, UMR INRA-Agrocampus SENAH, Saint Gilles, France.</td>
<td>N. Le Floc’h* and B Sève, UMR INRA-Agrocampus SENAH, Saint Gilles, France.</td>
</tr>
<tr>
<td>11:05 AM</td>
<td>291</td>
<td>Methionine: Nutrition and metabolism. J. T. Brosnan*, Memorial University of Newfoundland, St. John’s, NF, Canada.</td>
<td>J. T. Brosnan*, Memorial University of Newfoundland, St. John’s, NF, Canada.</td>
</tr>
<tr>
<td>11:35 AM</td>
<td>292</td>
<td>Effects of L-arginine supplementation on lactation performance of first parity sows. R. D. Mateo*1, G. Wu1,2, J. A. Carroll1, I. Shintaro1, H. K. Moon1, and S. W. Kim1,2, Texas A&amp;M University, College Station, Texas Tech University, Lubbock.</td>
<td>R. D. Mateo*1, G. Wu1,2, J. A. Carroll1, I. Shintaro1, H. K. Moon1, and S. W. Kim1,2, Texas A&amp;M University, College Station, Texas Tech University, Lubbock.</td>
</tr>
<tr>
<td>11:50 AM</td>
<td>293</td>
<td>Skeletal muscle protein synthesis in neonatal pigs is stimulated by α-ketoisocaproic acid, but not by norleucine. J. Escobar*, J. W. Frank, A. Suryawan, H. V. Nguyen, and T. A. Davis, Baylor College of Medicine, Houston, TX.</td>
<td>J. Escobar*, J. W. Frank, A. Suryawan, H. V. Nguyen, and T. A. Davis, Baylor College of Medicine, Houston, TX.</td>
</tr>
<tr>
<td>12:20 PM</td>
<td></td>
<td>Summary and questions.</td>
<td>Summary and questions.</td>
</tr>
</tbody>
</table>

Production, Management and the Environment I

Chair: Ken Kephart, Pennsylvania State University

M100 I-J

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:45 AM</td>
<td>296</td>
<td>Comparison of daily milk weight data with the multiple trait prediction model. M. Quist*,1, D. Kelton1, S. LeBlanc1, K. Hand1, D. Lazenby1, and F. Miglior*,1, University of Guelph, Ontario Veterinary College, Guelph, Ontario, Canada, CanWest Dairy Herd Improvement Corporation, Guelph, Ontario, Canada, Agriculture and Agri-Food Canada - Dairy and Swine Research and Development Centre, Lennoxville, Quebec, Canada, Canadian Dairy Network, Guelph, Ontario, Canada.</td>
<td>M. Quist*,1, D. Kelton1, S. LeBlanc1, K. Hand1, D. Lazenby1, and F. Miglior*,1, University of Guelph, Ontario Veterinary College, Guelph, Ontario, Canada, CanWest Dairy Herd Improvement Corporation, Guelph, Ontario, Canada, Agriculture and Agri-Food Canada - Dairy and Swine Research and Development Centre, Lennoxville, Quebec, Canada, Canadian Dairy Network, Guelph, Ontario, Canada.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>297</td>
<td>Simulation of variation in methane emissions from enteric fermentation in dairy cattle in the Netherlands. J. Dijkstra*,1, A. Bannink1, K. W. van der Hoek1, and W. Smink1, Wageningen University, Wageningen, The Netherlands, Wageningen University and Research Centre, Lelystad, The Netherlands, RIVM, Bilthoven, The Netherlands, Feed Innovation Services, Wageningen, The Netherlands.</td>
<td>J. Dijkstra*,1, A. Bannink1, K. W. van der Hoek1, and W. Smink1, Wageningen University, Wageningen, The Netherlands, Wageningen University and Research Centre, Lelystad, The Netherlands, RIVM, Bilthoven, The Netherlands, Feed Innovation Services, Wageningen, The Netherlands.</td>
</tr>
</tbody>
</table>


Daily manure production from a lactating cow facility. M. Hollmann*, K. F. Knowlton1, C. M. Parsons1, M. D. Hanigan1, and T. N. Rensch2, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Integrity Nutrient Control Systems, Inc., Chambersburg, PA.

Ruminant Nutrition
Forage & Fiber
Chair: Masahito Oba, University of Alberta

101 F-G

Time  Abstract #  Title and Authors
9:30 AM  ADSA Pioneer  Changes in the use of forages for dairy cattle during the last 60 years. J. W. Thomas, Michigan State University, East Lansing.
9:45 AM  302  Meta analysis of romina digestive responses of cattle to dietary NDF. D. Sauvant*1 and D. Mertens2, 1Institut National Agronomique Paris Grignon, Paris, France, 2US Dairy Forage Research Center, Madison, WI.
10:00 AM  303  Meta analysis of multiple responses of dairy goat to diet concentrate content. D. Sauvant*1,2 and S. Giger-Reverdin3, 1Institut National Agronomique Paris Grignon, Paris, France, 2Institut National de la Recherche Agronomique, Paris, France.
10:30 AM  305  Particle size distribution in rumen contents and faeces from cows fed grass silages in different physical form or barley straw supplemented with grass pellets. P. Norgaard* and L. F. Kornfelt, The Royal Veterinary & Agricultural University, Copenhagen, Denmark.
10:45 AM  306  Effect of yeast culture on efficiency of nutrient utilization for milk production and impact on fiber digestibility and fecal particle size. J. Harrison1, R. White*1, D. Mertens2, I. Yoon1, W. Sanchez3, and L. Nicholson3, 1Washington State University, Puyallup, 2USDFRC, Madison, WI, 3Diamond V Mills, Cedar Rapids, IA.
11:15 AM  308  Effects of enhanced in vitro fiber digestibility of barley silage on dry matter intake and milk yield of dairy cows. L. Chow*, M. Oba1, V. Baron2, and R. Corbett4, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture, Agri-Food Canada, Lacombe, AB, Canada, 3Alberta Agriculture Food and Rural Development, Edmonton, AB, Canada.
11:30 AM  309  Voluntary feed intake affects response to dietary forage content. J. A. Voelker Linton* and M. S. Allen, Michigan State University, East Lansing.
11:45 AM  310  Effect of SiAll4x4 inoculation on silage fermentation and protein quality of grass silage at different levels of dry matter. A. M. van Vuuren*, P. G. van Wikselaar, and A. H. van Gelder, Animal Sciences Group of Wageningen UR, Lelystad, The Netherlands.
12:00 PM  311  Treating corn silage with formaldehyde and urea: Their effect on nutritive value using gas production technique. A. Taghizadeh*, M. Hatami, and G. A. Moghaddam, Tabriz University, Tabriz, East Azarbayjan, Iran.
**Ruminant Nutrition**

**Transition Cow Metabolism**

**Chair:** Tom Overton, Cornell University  
**L100 D-E**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>ADSA Pioneer</td>
<td>A journey through volatile fatty acids, gluconeogenesis, and fatty liver. J. W. Young, Franklin, TN.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>312</td>
<td>Phlorizin administration does not attenuate hypophagia induced by intraruminal propionate infusion. B. J. Bradford* and M. S. Allen, <em>Michigan State University, East Lansing.</em></td>
</tr>
<tr>
<td>10:00 AM</td>
<td>313</td>
<td>Response of plasma concentrations of gut peptides to abomasal infusion of casein, starch, or soybean oil in lactating dairy cows. A. E. Relling* and C. K. Reynolds, <em>The Ohio State University, Wooster.</em></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>319</td>
<td>Effect of prepartum anionic diets on cortisol, adiponectin, and tumour necrosis factor-α expression at varying levels of body mass index in preparturient dairy cows; implications for insulin resistance. S. B. Puntenney* and P. D. French, <em>Oregon State University, Corvallis.</em></td>
</tr>
<tr>
<td>12:15 PM</td>
<td>322</td>
<td>The effect of calcium pantothenate on productive and reproductive performance in lactating dairy cows. J. Nocek and M. Vazquez-Anon*; 1Spruce Haven Farm and Research Center, Auburn, NY, 2Novus International, St. Louis, MO.</td>
</tr>
</tbody>
</table>

**Sheep Species**

**Chair:** Michael Thonney, Cornell University  
**101 J**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM</td>
<td>325</td>
<td>Effect of fermentable fiber level and protein source on feed intake and efficiency of growing lambs. A. Carneiro, A. Esquivel, D. E. Hogue, and M. L. Thonney*, <em>Cornell University, Ithaca, NY.</em></td>
</tr>
</tbody>
</table>
**Swine Species**

**Chair: George Foxcroft, University of Alberta**

**M100 A**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 AM</td>
<td>326</td>
<td>Factors related to piglet pre-weaning mortality in a bedded group farrowing system. Y. Z. Li*, L. J. Johnston, and A. M. Hilbrands, <em>University of Minnesota, Morris.</em></td>
</tr>
<tr>
<td>11:15 AM</td>
<td>327</td>
<td>Impact of gestation housing system on weaned pig production costs. P. J. Lammers* and M. S. Honeyman, <em>Iowa State University, Ames.</em></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>328</td>
<td>Effects of physiological traits on weaning-to-estrus interval in first-litter gilts. Y. Wang<em>1, T. Wise2, G. Rohrer2, K. Hanford1, and D. Van Vleck1, 1</em>University of Nebraska, Lincoln,* 2<em>U.S. Meat Animal Research Center, Clay Center, NE.</em></td>
</tr>
<tr>
<td>11:45 AM</td>
<td>329</td>
<td>Influence of a phytogenic feed additive on performance of weaner piglets. A. Kroismayr<em>1,3, T. Steiner1, and C. Zhang1, 1</em>Biomin GmbH, Herzogenburg, Austria,* 2<em>Biomin Feed Additive Co. Ltd, Shanghai, China,</em> 3<em>University of Natural Resources and Applied Life Sciences, Vienna, Austria.</em></td>
</tr>
</tbody>
</table>

**ADSA Foundation Scholar Lecture - Dairy Production**

**Chair: Kent A. Weigel, University of Wisconsin**

**Sponsor: ADSA Foundation**

**200 D-E**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td></td>
<td>Resolving the role of carbohydrates on the production, health and environmental impact of dairy cattle. M. B. Hall, <em>USDA/ARS, Madison, WI.</em></td>
</tr>
</tbody>
</table>

**SYMPOSIUM**

**ADSA Southern Section Symposium**

**Practical and Applied Approaches to Managing Dairy Businesses in the Future**

**Chair: Donna M. Amaral-Phillips, University of Kentucky**

**101 B-C**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:05 PM</td>
<td>331</td>
<td>Labor management strategies in the next decade. D. C. Grusenmeyer*, <em>New York Farm Viability Institute, Syracuse, NY.</em></td>
</tr>
<tr>
<td>2:45 PM</td>
<td>332</td>
<td>Challenges for feeding dairy cows in the next decade. M. Hutjens*, <em>University of Illinois, Urbana.</em></td>
</tr>
<tr>
<td>3:15 PM</td>
<td>333</td>
<td>Awards- S-ADSA Honor Award and Graduate Student Paper Competition Awards.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>334</td>
<td>Future challenges for reproductive management of dairy cattle. P. M. Fricke*, <em>University of Wisconsin, Madison.</em></td>
</tr>
<tr>
<td>4:00 PM</td>
<td></td>
<td>Dairy facilities and cow comfort for the next decade. J. Smith*, J. Harner III, K. Dhuyvetter, and M. Brouk, <em>Kansas State University, Manhattan.</em></td>
</tr>
<tr>
<td>5:00 PM</td>
<td></td>
<td>Panel Discussion.</td>
</tr>
<tr>
<td>5:30 PM</td>
<td></td>
<td>S-ADSA Business Meeting.</td>
</tr>
</tbody>
</table>
SYMPOSIUM
Animal Health
Immunophysiology of Host-environment Interactions: Implications for Disease Pathogenesis and Health Management of Production Livestock
Chair: John R. Wenz, Colorado State University
Sponsor: Intervet
Symposium meets AA VSB’S RACE requirement for 3 hr CE.

101 D-E

Time Abstract # Title and Authors
2:00 PM 335 The effect of transport by road and sea on physiology, immunity, and behavior of beef cattle. B. Earley*, Teagasc, Grange, Beef Research Centre, Dunsany, Co. Meath, Ireland.
2:45 PM 336 Making sense about stress and immunity: Th1 and Th2 aspects of the immune system respond differently to stress. J. L. Salak-Johnson*, University of Illinois, Urbana.
3:30 PM Break
3:40 PM 337 Nutritional modulation of innate immunity: Practical approaches. N. Forsberg*, S. Puntenney1, Y. Wang1, and J. Burton2, 1Oregon State University, Corvallis, 2Michigan State University, East Lansing.
4:25 PM 338 Cumulative physiological events influence the inflammatory response of the bovine udder to E.coli infections during the transition period. C. Burvenich*, M. Kehrli1, M. Paape1, D. Bannerman2, and J. Lippolis2, 1Ghent University, Faculty of Veterinary Medicine, Milk secretion and mastitis research center, Merelbeke, Belgium, 2Periparturient Diseases of Cattle Research Unit, USDA, ARS, Ames, IA, 3Bovine Functional Genomics Laboratory, U.S. Department of Agriculture, Agricultural Research Service, Beltsville, MD.

5:10 PM Panel Discussion.

Breeding and Genetics
Genetic Fitness
Chair: Filippo Miglior, Agriculture and Agri-Food Canada

L100 J

Time Abstract # Title and Authors
2:00 PM ADSA Pioneer Historical perspectives on genetic fitness research. R. Powell, USDA, Beltsville, MD.
2:15 PM 339 Stillbirth (co)variance components for a sire-maternal grandsire threshold model. J. Cole*, G. Wiggans, P. VanRaden, and R. Miller, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.
2:30 PM 340 Genetic parameters for calf vigor in the Montana Line 4 inbred Hereford herd. J. M. Rumph*, D. D. Kress1, K. C. Davis1, D. C. Anderson1,2, H. C. Van Wagoner1, and D. L. Boss2, 1Montana State University, 2Montana State University, Northern Agricultural Experiment Station, Havre, 3Montana State University, Bair Ranch, Martinsdale.
2:45 PM 341 Genetic parameters for rear legs/rear view in Brown Swiss cattle. G. R. Wiggans1, L. L. M. Thornton*, and R. R. Neitzel2, 1Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, 2Brown Swiss Association, Beloit, WI.
3:00 PM 342 Quantifying the impact of multiple independent heterozygous loci on survival. H. A. Adams* and R. D. Shanks, University of Illinois, Urbana.
3:15 PM 343 Mapping quantitative trait loci affecting calves immune function and birth weight in a Holstein x (Holstein x Jersey) backcross population. C. Maltecca*, H. Khatib, V. R. Schutzkus, and K. A. Weigel, University of Wisconsin, Madison.
3:30 PM 344 Genetic parameters of cortisol and creatinine in pigs as indicators for behavioral and nutritional disorders. H. N. Kadarmideen*, S. Gebert1, and C. Wenk1, 1Statistical Animal Genetics, Institute of Animal Science, Federal Institute of Technology (ETH), Zurich, Switzerland, 2Nutritional Biology, Institute of Animal Science, Federal Institute of Technology (ETH), Zurich, Switzerland.

Conception rates trend of Holsteins in South-East USA. C. Huang*, S. Tsuruta, I. Misztal, T. J. Lawlor, and J. S. Clay, University of Georgia, Athens, Holstein Association USA Inc., Brattleboro, VT, Dairy Records Management System, Raleigh, NC.

Relationship between reproduction traits and functional longevity in Canadian dairy breeds. A. Sewalem*, G. Kistemaker, F. Miglior, B. Van Doormaal, Agriculture and Agri-Food Canada - Dairy and Swine Research and Development Centre, Lennoxville, QC, Canada, Canadian Dairy Network, Guelph, ON, Canada.

Factors that impact longevity of Holsteins in the United States. H. D. Norman* and J. R. Wright, Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.

Health, immune function, and survival of calves from Holstein dams and Holstein or crossbred Jersey x Holstein sires. C. Maltecca*, K. Weigel, H. Khatib, V. Schutzkus, and P. Hoffman, University of Wisconsin, Madison.

Dairy Foods
Chemistry and Microbiology

Chair: Charles A. Boeneke, Louisiana State University Agricultural Center

200 B-C

Time Abstract # Title and Authors
2:00 PM ADSA Pioneer 350 Reflections on the safety of dairy foods. E. Zottola, University of Minnesota, St. Paul.
2:15 PM 350 Effect of EPA and DHA fortification on the oxidation stability of caprine milk infant formula analogue. C. O. Maduko*, Y. W. Park, and C. Akoh, University of Georgia, Athens, Fort Valley State University, Fort Valley, GA.
3:00 PM 353 Effect of mountain and sea level pasture on Conjugated Linoleic Acid content in plasma and milk. S. La Terra, S. Banni, M. Manenti, M. Caccamo, and G. Licitra*, CoRFiLaC, Regione Siciliana, Ragusa, Italy, Cagliari University, Cagliari Italy, D.A.C.P.A Catania University, Catania, Italy.
3:15 PM Break
4:15 PM 357 Identification of the microflora in the complete Ragusano cheese processing from milk produced at two different farm locations. G. Licitra*, S. Parayre, H. Falenti, S. Carpino, V. Fallico, C. Pediliggieri, and S. Lortal, CoRFiLaC, Regione Siciliana, Ragusa, Italy, D.A.C.P.A. Catania University, Catania, Italy, UMR Science et Technologie du Lait et de L’Oeuf, Rennes Cedex, France.
# SYMPOSIUM

**Dairy Foods**

Production Meets Processing: A Vital Link for High Quality Dairy Foods

Chair: Scott A. Rankin, University of Wisconsin-Madison

200 D-E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>359</td>
<td>Production meets processing: A vital link for high quality dairy foods. S. A. Rankin*¹, S. P. Washburn², B. Luth³, G. Licitra⁴, S. Carpino⁴, and P. Kindstedt⁵, ¹University of Wisconsin, Madison, ²North Carolina State University, Raleigh, ³Tillamook County Creamery Association, Tillamook, OR, ⁴CoRFiLaC, Regione Siciliana, Ragusa, Italy, ⁵University of Vermont, Burlington.</td>
</tr>
<tr>
<td>2:00 PM</td>
<td></td>
<td>Grazing and cheese flavor. S. A. Rankin, University of Wisconsin, Madison.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td></td>
<td>Farm production considerations for value-added dairy products. S. P. Washburn, North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td></td>
<td>The brand is a promise. B. Luth, Tillamook County Creamery Association, OR.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td></td>
<td>Case studies and applied research involving dairy production and processing in Italy. G. Licitra and S. Capino, CoRFiLaC, Ragusa, Italy.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td></td>
<td>Linking milk quality with finished product quality: The growing urgency for integrated research. P. Kindstedt, University of Vermont, Burlington.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td></td>
<td>Discussion.</td>
</tr>
</tbody>
</table>

# Extension Education

Chair: Twig Marston, Kansas State University

M100 D-E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>360</td>
<td>The Pennsylvania RFID project – An overview. K. E. Olson*¹, G. T. Cudoc², J. High³, J. S. Clay⁴, and J. Mattison¹, ¹National Dairy Herd Improvement Association, Verona, WI, ²Dairy One, Ithaca, NY, ³Lancaster Dairy Herd Improvement Association, Manheim, PA, ⁴Dairy Records Management Systems, Raleigh, NC.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>361</td>
<td>Factors affecting udder singeing in dairy cattle. T. Harrington¹, J. Pennington*¹, Z. Johnson², A. H. Brown², D. W. Kellogg², C. Rosenkrans², M. Andrews¹, and J. Hawkins¹, ¹University of Arkansas Cooperative Extension Service, Little Rock, ²University of Arkansas, Fayetteville.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>362</td>
<td>CowTime: Making milking more productive and easier. D. Klindworth*¹, R. Greenall², and D. Carr², ¹Primary Industries Reseach Victoria (PIRVic), Ellinbank, Victoria, Australia, ²University of Melbourne, Parkville, Victoria.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>363</td>
<td>Development of a stochastic simulation model to assess the potential economic benefits associated with investments in precision dairy farming technologies. J. M. Bewley¹, M. D. Boehlke¹, A. W. Gray¹, S. J. Kenyon¹, S. D. Eicher², and M. M. Schutz¹, ¹Purdue University, West Lafayette, IN, ²USDA-ARS, West Lafayette, IN.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>367</td>
<td>Review of Wisconsin corn silage milk per ton models. R. Shaver* and J. Lauer, University of Wisconsin, Madison.</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>364</td>
<td>SPAC – Information on demand. K. E. Olson*¹, K. Roy², B. Carlson³, and A. F. Kertz¹, ¹KEO Consulting, Schaumburg, IL, ²Federation of Animal Science Societies, Savoy, IL, ³American Dairy Science Association, Savoy, IL, ⁴ANDHIL LLC, St Louis, MO.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>365</td>
<td>Choosing the best forage species for a dairy farm - The Whole-farm approach. M. Neal*¹, J. Neal²,³, and W. Fulkerson¹, ¹Risk and Sustainable Management Group, University of Queensland, Brisbane, Queensland, Australia, ²New South Wales Department of Primary Industries, Camden, New South Wales, Australia, ³Faculty of Veterinary Science, University of Sydney, Camden, New South Wales, Australia.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>368</td>
<td>Sustainable self-financed producer study groups in Oregon. W. Lane*, Lane Livestock Services, Roseburg, OR.</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>369</td>
<td>Methodology of Connecticut’s horse industry survey: Results and implications for future studies. J. Nadeau*¹, F. Shah¹, A. Chaudhry², and J. Maripani¹,², ¹University of Connecticut, Storrs, ²University of Wyoming, Laramie, ³University of Magallanes, Punta Arenas, Chile.</td>
</tr>
</tbody>
</table>

---

Tuesday, JULY 11, 2006 ORAL SESSIONS
Nonruminant Nutrition
Amino Acid Nutrition - Nursery to Finisher
Chair: Russell Fent, Ralco Nutrition Inc. and Lee Southern, Louisiana State University

L100 H-I

Time Abstract #
2:00 PM 370 True ileal digestible isoleucine requirement and ratio in 12 to 22 kg pigs. S. X. Fu*, A. M. Gaines¹, R. W. Fent¹, G. L. Alle¹, and J. L. Usry², ¹University of Missouri, Columbia, ²Ajinomoto Heartland, LLC, Chicago, IL.
2:15 PM 371 Branched chain amino acid interactions and isoleucine imbalance in late-finishing pigs. S. X. Fu*, R. W. Fent¹, G. L. Alle¹, and J. L. Usry², ¹University of Missouri, Columbia, ²Ajinomoto Heartland, LLC, Chicago, IL.
2:30 PM 372 Branched chain amino acid interactions increases isoleucine requirement in late-finishing pigs. S. X. Fu*, R. W. Fent¹, G. L. Alle¹, and J. L. Usry², ¹University of Missouri, Columbia, ²Ajinomoto Heartland, LLC, Chicago, IL.
2:45 PM 373 Stimulation of muscle protein synthesis by leucine is dependent on plasma amino acid availability. J. Escobar*, J. W. Frank, A. Suryawan, H. V. Nguyen, and T. A. Davis, Baylor College of Medicine, Houston, TX.
3:00 PM 374 Evaluation of the true ileal digestible (TID) valine requirement of 8 to 20 kg pigs. A. M. Gaines*, P. Srichana¹, B. W. Ratliff¹, G. L. Alle¹, and J. L. Usry², ¹University of Missouri, Columbia, ²Ajinomoto Heartland LLC, Chicago, IL.
3:15 PM 375 Dietary supplementation of L-Arginine for finishing pigs. N. R. Augspurger*, D. M. Webel¹, and G. Wu², ¹JBS United, Inc., Sheridan, IN, ²Texas A & M University, College Station, TX.
3:30 PM 376 Nitrogen retention response of pigs to DL-methionine (DLM) and methionine hydroxy analog free acid (MHA-FA). J. A. Jendza*, M. Rademacher², and O. Adeola¹, ¹Purdue University, West Lafayette, IN, ²Degussa AG, Hanau-Wolfgang, Germany.
3:45 PM 377 The effect of soybean hulls inclusion on the apparent and true ileal digestibility of selected amino acids in growing pigs. L. Dégen*, J. Tossenberger¹, V. Halas², and L. Babinszky², ¹Agribrands Europe Hungary RT, Karcag, Hungary, ²University of Kaposvár, Kaposvár, Hungary.
4:00 PM 378 Amino acid digestibility and measurement of blocked lysine in five samples of distillers dried grains with solubles in growing pigs. A. A. Pahm*, D. Hoehler², C. Pedersen¹, D. Simon¹, and H. H. Stein¹, ¹South Dakota State University, Brookings, ²Degussa Corp., Kennesaw, GA.
4:15 PM 379 Amino acid and energy digestibility in NutriDense corn and other cereal grains fed to growing pigs. C. Pedersen*, M. G. Boersma, and H. H. Stein, South Dakota State University, Brookings.
4:30 PM 380 Effect of increasing dietary crude protein and crystalline amino acids on carcass composition and IGF-I mRNA expression in growing pigs. R. Fischer*, P. Miller¹, A. Cupp¹, and D. Clopton¹, ¹University of Nebraska, Lincoln, ²Sioux Nation Ag Center, Sioux Falls, SD.
5:00 PM 382 Dietary sources of starch affect intestinal absorption and metabolism of glucose and amino acids in growing pigs. J. Zhang¹, Y. L. Yin*, and G. Y. Wu¹,², ¹The Chinese Academy of Sciences, Changsha, Hunan, P.R. China, ²Texas A&M University, College Station.

Physiology and Endocrinology
Metabolic Physiology
Chair: Arnold Hippen, South Dakota State University
101 J

Time Abstract #
2:00 PM ADSA Pioneer Experiments in metabolic physiology are incomplete until equations are parameterized. R. L. Baldwin, University of California, Davis.
2:30 PM 384 Effect of the addition of insulin-like growth factor-I to embryo culture medium on pregnancy rate following timed embryo transfer in lactating dairy cows. J. Block* and P. J. Hansen, University of Florida, Gainesville.

3:00 PM 386 Effect of dry period duration on reproductive measures during the subsequent lactation in Holstein cows. R. D. Watters*, M. C. Wiltbank, P. M. Fricke, J. N. Guenther, A. E. Kulick, and R. R. Grummer, University of Wisconsin, Madison.


4:00 PM 390 Liver expression of the clock gene TIMELESS is reduced by long day photoperiod in dairy steers. T. F. Gressley*, E. E. Connor, and G. E. Dahl, University of Illinois, Urbana, IL; Bovine Functional Genomics Laboratory, USDA-ARS, Beltsville, Maryland.

4:15 PM 391 Effects of conjugated linoleic acid on prostaglandin production by bovine endometrial cells. A. Heravi Moussavi*, R. O. Gilbert, W. R. Butler, D. E. Bauman, E. Castaneda-Gutierrez, and H. B. Roman, Ferdowsi University, Mashhad, Iran; Cornell University, Ithaca, NY.


Production, Management and the Environment II

Chair: Sandra K. Johnson, Kansas State University

M100 I-J

Time Abstract #
2:00 PM 395 Incorporating environmental compliance costs into livestock diet formulation. J. C. Hadrich, C. A. Wolf*, and S. B. Harsh, Michigan State University, East Lansing.

2:15 PM 396 Development and integration of a national feed management education program and assessment tools into a comprehensive nutrient management plan. J. H. Harrison*, R. A. White*, T. J. Applegate, R. T. Burns, G. H. Carpenter, G. E. Erickson, and A. L. Sutton, Washington State University, Puyallup; Purdue University, West Lafayette, IN; Iowa State University, Ames; USDA, NRCS, Beltsville, MD; University of Nebraska, Lincoln.

2:30 PM 397 Decision support model of nutrient excretion in beef feedlots. C. B. Williams* and T. G. Jenkins, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

2:45 PM 398 Maximized lactational performance for improving postweaning reproductively on commercial farms. Y. Tanaka* and Y. Koketsu, Meiji University, Kawasaki, Kanagawa, Japan.


3:15 PM 400 Effect of mixing pigs or maintaining pen integrity on the response to grow-finish space allocation. R. Goodband, M. Brumm*, L. Johnston, K. Stalder, and NCR-89 Committee on Swine Management, Kansas State University, Manhattan; University of Nebraska, Lincoln; University of Minnesota, St. Paul; Iowa State University, Ames.

3:30 PM 401 Influence of thymol on coliform bacteria, VFA, and methane production from pull-plug swine manure pits. V. H. Varel* and J. E. Wells, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.
Ruminant Nutrition

Fat Feeding, Metabolism & Composition

Chair: James K. Drackley, University of Illinois

L100 D-E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>ADSA Pioneer</td>
<td>Feeding fat to dairy cows - how did we get here?</td>
<td>D. Palmquist, <em>Ohio State University, Wooster.</em></td>
</tr>
<tr>
<td>2:15 PM</td>
<td>402</td>
<td>Artificial neural networks to model the rumen fermentation pattern in dairy cattle.</td>
<td>M. Craninx, B. Vlaeminck, and V. Fievez*, <em>Ghent University, Melle, Belgium.</em></td>
</tr>
<tr>
<td>2:30 PM</td>
<td>403</td>
<td>$^{13}$C Enrichment of conjugated linoleic acids and other fatty acids in cultures of ruminal microorganisms dosed with a stable isotope of linoleic acid.</td>
<td>C. Thompson, J. Mulz, M. Reynolds, E. Thies, and T. Jenkins*, <em>Clemson University, Clemson, SC.</em></td>
</tr>
<tr>
<td>3:00 PM</td>
<td>405</td>
<td>Characterization of the acute lactation response to trans-10, cis-12 conjugated linoleic acid (CLA).</td>
<td>K. J. Harvatine*, D. A. Dwyer, and D. E. Bauman, <em>Cornell University, Ithaca, NY.</em></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>407</td>
<td>Comprehensive two-dimensional gas chromatography (GC×GC) for the analysis of fatty acids (FA) in milk.</td>
<td>B. Vlaeminck*, J. Harynuk, K. Korkiasaari, V. Fievez, and P.J. Marriott, <em>Ghent University, Belgium; RMIT University, Australia; University of Turku, Finland.</em></td>
</tr>
<tr>
<td>4:00 PM</td>
<td>409</td>
<td>Feed intake, milk production and milk composition of dairy cows fed extruded linseed.</td>
<td>M. C. Fuentes, S. Calsamiglia, C. Sanchez, A. Gonzalez, J. E. Santos, J. R. Newbold, and J. Fontecha, <em>Universidad Autonoma de Barcelona, Bellaterra, Spain; Tauste Ganadera, Zaragoza, Spain; Nutral, SA, Madrid, Spain; University of California Davis, PRORIM, Brussels, Belgium; CSIC, Madrid, Spain.</em></td>
</tr>
<tr>
<td>4:30 PM</td>
<td>411</td>
<td>Effects of flaxseed processing on the recovery of α-linolenic acid in milk.</td>
<td>G. Thangavelu, M. Obi, M. Dehghan-banadaky, D. J. Ambrose, and E. Okine, <em>University of Alberta, Edmonton, AB, Canada; Alberta Agriculture Food and Rural Development, Edmonton, AB, Canada.</em></td>
</tr>
<tr>
<td>5:00 PM</td>
<td>413</td>
<td>The effect of feed delivery time on dairy cattle production.</td>
<td>C. J. Furedi, A. D. Kennedy, and J. C. Plaizier, <em>University of Manitoba, Winnipeg, MB, Canada.</em></td>
</tr>
<tr>
<td>5:15 PM</td>
<td>414</td>
<td>Impact of providing total mixed ration at evening vs. morning on feed intake, rumen pH, and productivity of lactating Holsteins.</td>
<td>A. Nikkhah, J. C. Plaizier, C. Furedi, and A. D. Kennedy, <em>University of Manitoba, Winnipeg, MB, Canada.</em></td>
</tr>
</tbody>
</table>
## SYMPOSIUM

### Ruminant Nutrition

**Identifying Opportunities for Maximizing Forage Utilization?**

**Chair:** David W. Bohnert, Oregon State University

**L100 A**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>415</td>
<td>Beef cattle diets and forage optimization strategies on western rangelands. T. DelCurto*, Oregon State University, Union.</td>
</tr>
<tr>
<td>2:35 PM</td>
<td>416</td>
<td>Nutritional management strategies for efficient utilization of forage resources. F. T. McCollum*, Texas A&amp;M University, College Station.</td>
</tr>
<tr>
<td>3:10 PM</td>
<td>417</td>
<td>Nutritional wisdom revisited: From instinct to experience with implications for use of forages by herbivores. F. D. Provenza*, Utah State University, Logan.</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>418</td>
<td>Forage intake, digestion and milk production by dairy cows. R. Shaver*, University of Wisconsin, Madison.</td>
</tr>
</tbody>
</table>

---

## SYMPOSIUM

### Teaching/Undergraduate and Graduate Education

**Student Engagement...The Classroom and Beyond**

**Chair:** Linda C. Martin, Oklahoma State University

**101 A**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>420</td>
<td>Symposium Introduction. L. C. Martin, Oklahoma State University, Stillwater.</td>
</tr>
<tr>
<td>2:10 PM</td>
<td>420</td>
<td>Using the National Survey of Student Engagement to understand students’ experiences in the Agricultural and Related Sciences. T. Nelson Laird*, Indiana University, Bloomington.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>421</td>
<td>Active and collaborative learning. J. Swanson* and J. McClaskey, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>422</td>
<td>Strategies for engaging students in large classes. W. E. Beal*, Virginia Polytechnic Institute and State University, Blacksburg, VA.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>423</td>
<td>Student engagement at a distance using virtual teaching assistants in the classroom and beyond. M. Latour* and K. Orvis, Purdue University, West Lafayette, IN.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>424</td>
<td>Enriching the educational experience through co-curricular activities. T. Klopfenstein*, University of Nebraska, Lincoln.</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>425</td>
<td>The role of academic advising in student engagement. L. C. Martin*, Oklahoma State University, Stillwater.</td>
</tr>
</tbody>
</table>
Wednesday, July 12

POSTER PRESENTATIONS

Animal Behavior and Well-Being

Exhibit Hall A

Abstract #

W1 Analysis of the association of change in average daily gain of finisher pigs remaining after pulling out heavier pigs with the change in allometric space allowance. L. Anil*, S. S. Anil, and J. Deen, University of Minnesota, St. Paul.


W5 Analysis of the association of shoulder lesions during lactation with sow-level factors. S. S. Anil*, L. Anil, and J. Deen, University of Minnesota, St. Paul.

W6 Decreasing feed tossing behavior in dairy cows by emplacing a cable in front of manger. F. Farivar, F. Kafizadeh, 1Gorgan University, Gonbad, Gorgan, Iran, 2Razi University, Kermanshah, Kermanshah, Iran.

W7 Behavioral patterns change when primiparous cows are mixed with multiparous cows. C. Iglesias, A. Bach, M. Devant, X. Manteca, S. Calsamiglia, and A. Ferret, 1SEMEXA, Spain, 2ICREA, Spain, 3IRTA-Unitat de Remugants, Spain, 4Universitat Autònoma de Barcelona, UAB, Spain.

W8 The impact of machine milking on milk production traits and blood cortisol in primiparous dairy ewes. S. P. G. Rassu, E. A. Cannas, P. Nicolussi, P. Bonelli, and G. Pulina, 1Dipartimento di Scienze Zootecniche - University of Sassari, Sassari, Italy, 2Istituto Zooprofilattico sperimentale per la Sardegna, Sassari, Italy.


W10 Blood indicators of stress are not affected when primiparous cows are mixed with multiparous cows. C. Iglesias, A. Bach, M. Devant, X. Manteca, S. Calsamiglia, and A. Ferret, 1SEMEXA, Girona, Spain, 2ICREA, Barcelona, Spain, 3IRTA-Unitat de Remugants-IRTA, Barcelona, Spain, 4Universitat Autònoma de Barcelona (UAB), Barcelona, Spain.

W11 Automatic monitoring of lying, standing and walking behavior in dairy cattle. L. Munksgaard, C. G. Reenen, and R. Boyce, 1Danish Institute of Agricultural Sciences, Research Centre Foulum, Denmark, 2Animal Sciences Group of Wageningen University and Research Centre, Lelystad, The Netherlands, 3IceRobotics, Roslin BioCentre, Scotland.

W12 The effect of stocking rate, parity, and lameness on the short-term behavior of dairy cattle. C. T. Hill, R. J. Grant, H. M. Dann, C. S. Ballard, and R. C. Hovey, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2University of Vermont, Burlington.

W13 Age at transport effects on behavioral responses in dairy calves to novel stimuli. S. D. Eicher, T. A. Johnson, and J. N. Marchant-Forde, USDA-ARS, West Lafayette, IN, 2Purdue University, West Lafayette, IN.


W15 Use of recycled paper (news/office) and straw as bedding and their effects on heifer cleanliness and behavior. J. E. Wohlt, D. B. Imwalle, and L. S. Katz, Rutgers University, New Brunswick, NJ.


W17 Effect of transport for up to 24 hours followed by twenty-four hours recovery on liveweight, physiological and hematological responses of bulls. B. Earley, D. J. Prendiville, and E. G. O’ Riordan, Teagasc, Grange, Beef Research Centre, Dunsany, Co. Meath, Ireland.
Animal Health III
Exhibit Hall A

Abstract #

W18 Maternal stress: Effect on the stress response and immune function of the progeny. M. Reyna*1, S. Martinez1, T. H. Welsh, Jr.2, J. A. Carroll1, and J. C. Laurenz1, 1Texas A&M University, Kingsville, 2Texas A&M University and Texas Agriculture Experiment Station, College Station, 1USDA-ARS Livestock Issues Research Unit, Lubbock, TX.

W19 Maternal stress modulates the acute stress response and immune function of the pig. N. C. Burdick*1, T. H. Welsh, Jr.2, J. A. Carroll1, and J. C. Laurenz1, 1Texas A&M University, Kingsville, 2Texas A&M University, College Station, 1USDA-ARS Livestock Issues Research Unit, Lubbock, TX.

W20 Non-nutrient additives alter the weaned pig’s stress response to a Mycoplasma hyponeumoniae vaccination. J. Carroll*1 and K. Haydon1, 1Livestock Issues Research Unit, Agricultural Research Service-USDA, Lubbock, TX, 2Prince Agri Products, Inc., Quincy, IL.

W21 Three strategies to counteract the negative impact of mycotoxins on piglets. U. Hofstetter*1, D. Schatzmayr1, G. Schatzmayr1, and E. M. Binder2, 1Biomin GmbH, Herzogenburg, Austria, 2Erber AG, Herzogenburg, Austria.

W22 Successful detoxification of ochratoxin A in weaning piglets. U. Hofstetter*1, D. Schatzmayr1, G. Schatzmayr1, and E. M. Binder2, 1Biomin GmbH, Herzogenburg, Austria, 2Erber AG, Herzogenburg, Austria.

W23 The effect of butyrate on cytokine production and proliferation by porcine monocytes. T. E. Weber*1, C. G. Chitko-McKown2, and B. J. Kerr1, 1USDA/ARS, National Swine Research and Information Center, Ames, IA, 2USDA/ARS, Meat Animal Research Center, Clay Center, NE.

W24 Expression of an active Colicin E1 in the yeast pichia pastoris. S. A. Cutler* and C. H. Stahl, Iowa State University, Ames.

W25 Polymorphisms within the lactoferrin gene promoter in various cattle breeds. M. Daly1, O. Casey1, F. Buckley2, P. Ross1, and L. Giblin*1, 1Moorepark Food Research Centre, Teagasc, Fermoy, Co. Cork, Ireland, 2Moorepark Dairy Production Research Centre, Teagasc, Fermoy, Co. Cork, Ireland.

W26 Using microarray analysis to decipher gene expression in mastitis causing Escherichia coli exposed to bovine whey. M. Worku*, P. Matterson, and Z. Li, Iowa State University, Ames and Technical State University, Greensboro.


W28 Increased pulmonary arterial pressure (PAP) and maternal undernutrition induces differential gene expression in right ventricle of steers. B. Berg*1, B. Hess1, S. P. Ford1, K. McInnerney2, W. Means1, T. Hansen1, and H. Han1, 1University of Wyoming, Laramie, 2Montana State University, Bozeman, 3Colorado State University, Fort Collins.


Dairy Foods
Cheese, Products, and Processing
Exhibit Hall A

Abstract #

W30 Probiotic properties of the Candida kefyr isolated from kefir. S. J. You1, J. K. Cho1, C. G. Ha1, C. H. Kim1, and K. C. Heo*, 1Hankyong National University, Anseong, Gyonggi, Republic of Korea, 2Hanyang University, Ansan, Gyonggi, Republic of Korea.

W31 Volatile fraction of Sicilian Pecorino cheese: Comparison of raw and pasteurized milk cheese. T. Rapisarda1, S. Carpino*1, G. Azzaro1, and G. Licita1, 1CorBiLaC, Regione Siciliana, Ragusa, Italy, 2D.A.C.P.A. Catania University, Catania, Italy.

W32 Characteristics of reduced fat milks as influenced by the incorporation of folic acid. K. Achanta, C. A. Boeneke*, and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.


W38  Compositional differences between industrial sources of salty whey and sweet whey. K. Blaschek*, W. Wendorff, and S. Rankin, University of Wisconsin, Madison.


W40  Utilization of lactoperoxidase system and/or microfiltration for manufacture of Cheddar cheese from raw milk. Y. Amornkul* and D. Henning, South Dakota State University, Brookings.

W41  Characterization of Queso Fresco cheeses manufactured in Mexico and the United States. D. L. Van Hekken* 1, M. H. Tunick1, J. A. Renye1, B. Vallejo-Cordoba2, and A. F. Gonzalez-Cordova2, USDA. ARS, ERRC, Wyndmoor, PA, 2CIAD, A.C., Hermosillo, Sonora, México.

W42  Manufacture of fresh soft cheese (Domiaty-type) from camel milk using ultrafiltration process. M. A. Mehaia*, Qassim University, Buriedah, Qassim, Saudi Arabia.

W43  Modifying the functionality of reduced-fat Mozzarella cheese by reduction of calcium level or by the addition of emulsifying salts during curd plasticization. J. A. O’Mahony, E. O. Mulholland, and T. P. Guinee*, Moorepark Food Research Centre, Teagasc, Fermoy, Co. Cork, Ireland.

W44  Impact of exopolysaccharide-containing base cheese on characteristics of reduced fat process cheese. S. Awad, A. N. Hassan*, and V. Mistry, MN-SD Dairy Foods Research Center, Dairy Science Department, Brookings, SD.

W45  Substituting aged cheese with exopolysaccharide-containing base cheese in making process cheese. S. Awad, A. N. Hassan*, and V. Mistry, MN-SD Dairy Foods Research Center, Dairy Science Department, Brookings, SD.

W46  Evaluation of isolated starter lactic acid bacteria in Ras cheese ripening and flavour development. S. Awad*, N. Ahmed, and M. El-Soda, Department of Dairy Science, Faculty of Agriculture, Alexandria University, Egypt.

W47  Utilization of lactoperoxidase system and/or microfiltration for manufacture of Cheddar cheese from raw milk: Proteolysis and sensory characteristics. Y. Amornkul* and D. Henning, South Dakota State University, Brookings.

W48  Effect of the addition of Lactobacillus reuteri over the shelf life of Oaxaca-type cheese. M. Montero-Lagunes*, E. Paz-Gamboa1, E. Herman-Lara1, P. Valencia-Perez2, and H. Garcia-Galindo2, Instituto Tecnológico de Tuxtepec, Tuxtepec, Oax. Mexico, 2Instituto Tecnológico de Veracruz, Veracruz, Ver. Mexico, 1Campito Experimental La Posta, Veracruz, Ver. Mexico.


W50  Characteristics of Swiss cheese manufactured with adjunct Lactobacillus strains using low cooking temperature. N. A. Kocaoglu-Vurma*, W. J. Harper1, M. A. Drake2, and P. D. Courtney1, 1The Ohio State University, Columbus, 2North Carolina State University, Raleigh.

W51  Hydrolysis of caseins in Cheddar cheese: Effects of temperature and coagulants. P. J. Joseph*, D. J. McMahon1, J. R. Broadbent1, and C. J. Oberg2, 1Utah State University, Logan, 2Weber State University, Ogden, UT.

W52  Effect of sodium gluconate on the solubility of calcium lactate. C. Phadungath* and L. E. Metzger, MN-SD Dairy Foods Research Center, University of Minnesota, St. Paul, MN.

W53  Influence of adjunct cultures and accelerated ripening on properties of Cheddar cheese. T. C. Rasmusson*, D. J. McMahon1, J. R. Broadbent1, and C. J. Oberg2, 1Utah State University, Logan, 2Weber State University, Ogden, UT.

W54  Effects dietary supplementation of unsaturated fat, vitamin E, and sorbitol on fatty acid concentrations in milk and the properties of Cheddar cheese. F. Parada-Rabell*, M. L. Eastridge, C. J. Kuo, V. Alvarez, A. Todd, C. V. D. M. Ribeiro, and J. Engel, The Ohio State University, Columbus.

W55  On-farm extraction of proteins from raw whole milk. A. Chand*1,2, J. E. Swan1, and C. J. Fee2, 1The University of Waikato, Hamilton, New Zealand, 2Dexcel Limited, Hamilton, New Zealand, 3University of Canterbury, Christchurch, New Zealand.

W56  Effect of processing on the composition and structure of butter milk and of its milk fat globule membranes. P. Morin*, R. Jiménez-Flores2, and Y. Pouliot1, 1Stela Research Group, INAF, Université Laval, Québec, Canada, 2Dairy Products Technology Center, Cal Poly, San Luis Obispo.

W57  Yogurt manufactured with an immune enhancer. C. Olga and K. J. Aryana*, Louisiana State University Agricultural Center, Baton Rouge.


W59  Yogurt manufactured using a novel dietary fiber with several health benefits. B. Trammell, K. J. Aryana*, and C. Boeneke, Louisiana State University Agricultural Center, Baton Rouge.
W60  Gross composition and nutrient profiles of Chinese yak (Maiwa) milk. J. Li*1, Q. Sheng2, M. Alam1, X. Fang2, and M. Guo1, 1University of Vermont, Burlington, 2Sanlu Group Co., Ltd., Shijiazhuang, Hebei Province, P.R. China.

W61  Development of a software program for goal oriented functional food formulation. Y. Yang*1, S. Gokavi, X. Wu, and M. Guo, University of Vermont, Burlington.


W63  Sensory evaluation of a novel ingredient produced from buttermilk. S. Jinjarak1, P. Morin2, A. Olabi1, and R. Jimenez-Flores*1, 1California Polytechnic State University, San Luis Obispo, 2Laval University, Quebec City, Quebec, Canada.

Forages and Pastures
Grazing
Exhibit Hall A

Abstract #

W64  Effects of grazing management on pasture characteristics affecting sediment and nutrient loads in surface waters. M. Haan*1, J. Russell1, D. Morrical1, D. Strohbehn1, W. Powers1, J. Lawrence1, and J. Kovar1, Iowa State University, Ames, USDA-ARS, Ames, IA.


W67  Nutritional characteristics of native grasses used in a pasture system. A. Loyd*1, S. Smith2, J. D. Sampson1, and J. N. Spain1, 1University of Missouri, Columbia, 2Windrush Farm, Columbia, MO.


W69  Feeding grazing dairy cows with soybean meal, sunflower meal or canola meal in winter. M. R. Gallardo*1, S. E. Valtorta2, H. C. Castro1, M. C. Gaggiotti1, and C. Arakaki3, 1California Polytechnic State University, San Luis Obispo, 2Texas A&M University, College Station, 3The University of Georgia, Athens.

W70  Effect of spring grazing date and subsequent stocking rate on dairy cow performance in the mid grazing season. E. Kennedy*1,2, M. O’Donovan1, J. P. Murphy1, F. O’Mara2, and L. Delaby1, 1Dairy Production Research Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, 2UCD, Dublin, Ireland, 3INRA, St. Gilles, France.

W71  Synchronous and asynchronous concentrate supplements to lactating dairy cows on pasture. A. Konyali1,2, K.-H. Südekum*1,3, W. Junge1, M. Lukas2, and E. Kalim1, 1University of Kiel, Kiel, Germany, 2Canakkale Onsekiz Mart University, Canakkale, Turkey, 3University of Bonn, Bonn, Germany.

W72  Performance and urinary alkaloid excretion of stocker cattle grazing nontoxic or toxic tall fescue over-seeded with white clover. J. Andreae*, N. Hill1, and J. Bouton2, The University of Georgia, Athens, 2The Samuel Roberts Noble Foundation, Ardmore, OK.

W73  Removing seasonal affects from pasture plate meter calibrations. E. B. Rayburn, W. L. Shockey*, B. D. Smith, D. A. Seymour, and J. D. Lozier, West Virginia University Extension Service, Morgantown.

W74  Effect of high and low residual herbage mass of a tropical pasture grazed by goats. 1. Grazing behaviour. J. S. Fernandes Jr., K. T. Resende1, J. J. R. Fernandes*, L. O. Tedeschi1, R. A. Reis1, M. H. M. R. Fernandes1, and H. M. Silva1, 1Universidade Estadual Paulista/FCAV, Jaboticabal, SP, Brazil, 2Texas A&M University, College Station, 3Universidade Federal de Goias, Goiania, GO, Brazil.

W75  Effect of high and low residual herbage mass of a tropical pasture grazed by goats. 2. Sward structure. J. S. Fernandes Jr.*, K. T. Resende1, M. H. M. R. Fernandes1, L. O. Tedeschi1, R. A. Reis1, J. J. R. Fernandes1, and F. G. Souza1, 1Universidade Estadual Paulista/FCAV, Jaboticabal, SP, Brazil, 2Texas A&M University, College Station, 3Universidade Federal de Goias, Goiania, GO, Brazil.

W76  Defoliation effects on root and rhizome development of kura clover. B. W. Kim*1 and K. A. Albrecht2, 1Kangwon National University, Chunchon, Kangwon-Do, South-Korea, 2University of Wisconsin, Madison.
Goat Species

Product Quality and Reproductive Performance of Goats

Exhibit Hall A

Abstract #

W77  Comparison of quality characteristics of chevon and lamb. K. R. Eega*, J. H. Lee, G. Kannan, B. Kouakou, and W. R. Getz, Fort Valley State University, Fort Valley, GA.

W78  Effect of fat supplementation on the performance of meat goats fed eastern gamagrass. A. White*, J. Bartlett, and E. Rhoden, Tuskegee University, Tuskegee, AL.


W80  Reduction of skin and carcass E. coli contamination in goats by dietary brown seaweed extract supplementation and skin wash. G. Kannan*, K. R. Eega, J. H. Lee, B. Kouakou, and T. H. Terrill, Fort Valley State University, Fort Valley, GA.

W81  Effect of initial body condition of Boer x Spanish yearling wethers and level of nutrient intake on body composition. A. Ngwa1, L. Dawson2, R. Puchala1, G. Detweiler1, R. Merkel*, I. Tovar-Luna1, T. Sahlu1, C. Ferrell1, and A. Goetsch1, 1American Institute for Goat Research, Langston University, Langston, OK, 2Oklahoma State University, Stillwater, 3US Meat Animal Research Center, Clay Center, NE.

W82  Urea space and body condition score to predict body composition of meat goats. A. Ngwa1, L. Dawson2, R. Puchala1, G. Detweiler1, R. Merkel1, I. Tovar-Luna1, T. Sahlu1, C. Ferrell1, and A. Goetsch1, 1American Institute for Goat Research, Langston University, Langston, OK, 2Oklahoma State University, Stillwater, 3US Meat Animal Research Center, Clay Center, NE.

W83  Efficacy of melengestrol acetate feeding to advance breeding in hair sheep and meat goats managed in an accelerated mating system. S. Wildeus* and J. R. Collins, Virginia State University, Petersburg.

W84  Effect of alternative forages on reproductive performance of meat goats. Y. A. Markley*, E. G. Rhoden, and J. R. Bartlett, Tuskegee University, Tuskegee, AL.


W86  Effects of extended storage on microbiological quality, somatic cell count and composition of Grade-A goat milk. S. Zeng*, S. Chen1,2, and B. Bah1, 1Langston University, Langston, OK, 2China Agricultural University, Beijing, China.

W87  Effects of CLA supplementation on goat milk composition and texture profile of semi-hard goat cheese. S. Chen1,2, S. Zeng1, M. Rovai1, T. Gipson1, D. Bauman3, A. Lock1, B. Bah1, and A. Goetsch1, 1E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK, 2China Agricultural University, Beijing, China, 3Cornell University, Ithaca, NY.


Horse Species

Equine Sciences

Exhibit Hall A

Abstract #

W89  Equine muscle Glut-4 expression and glycogen content are altered by dietary energy source and physical conditioning. L. Stewart-Hunt, R. Geor*, and J. McCutcheon, University of Guelph, Guelph, Ontario, Canada.

W90  Temporal variables of the trot of the hunter pleasure Arabian performance horse. M. Nicodemus* and K. Slater, Mississippi State University, Mississippi State.

W91  Parameter estimates for genetic effects on conformation traits of korean jeju native horse. W. Y. Oh*, D. J. Choi*, M. S. Kang*, J. W. Lee1, C. E. Lee1, and D. H. Baik1, 1Department of Animal Resources and Biotechnology, College of Agriculture, Chonbuk National University, Chonju city, Chonbuk Province, Republic of Korea.


Effect of yeast culture supplementation on digestibility of varying quality forage in mature horses. L. M. Morgan*, J. A. Coverdale1, M. A. Froetschel, and I. Yoon2, 1*University of Georgia, Athens, 2Diamond V Mills, Inc., Cedar Rapids, IA.*


Characterization and regulation of the bovine stearoyl-CoA desaturase (Scd) gene promoter and effects of conjugated linoleic acid (CLA) on mammary cell growth and apoptosis. A. F. Keating*1,2, F. Q. Zhao2, and J. J. Kennelly1, 1University of Florida, Gainesville, 2University of Bern, Bern, Switzerland.


Characterization and regulation of the bovine stearoyl-CoA desaturase (Scd) gene promoter and effects of conjugated linoleic acid (CLA) on mammary cell growth and apoptosis. A. F. Keating*1,2, F. Q. Zhao2, and J. J. Kennelly1, 1University of Florida, Gainesville, 2University of Bern, Bern, Switzerland.

Effects of milking interval on milk constituents from various fractions of ewe milk. A. Dzidic*1, M. Kaps1, and R. Bruckmaier2, 1University of Zagreb, Zagreb, Croatia, 2University of Bern, Bern, Switzerland.

Effects of omitting two milkings weekly on milk yield, milk composition and udder health in Manchega and Lacaune dairy ewes. V. Castillo, X. Such, G. Caja*, E. Albanell, and R. Casals, *Universitat Autònoma de Barcelona, Bellaterra, Spain.*

Short-term once-daily milking decreases expression of integrins and cell survival factors with no changes in apoptosis in the bovine mammary gland. K. Singh*, J. Dobson1, C. Phyn1, C. Prosser2, V. Farr1, and K. Stelwagen1, 1AgResearch Ltd., Ruakura Research Centre, Hamilton, New Zealand, 2Dairy Goat Co-operative (N.Z.) Ltd., Hamilton, New Zealand.

The association among dry period length, lactation performance and some physiological measures of Holstein cows during the following lactations. M. S. Gulay*1, M. J. Hayen2, K. C. Bachman2, and H. H. Head2, 1Akdeniz University, Burdur, Turkey, 2University of Florida, Gainesville.

Increase in stanniocalcin content in milk of cows at involution. G. Tremblay*, L. Delbecchi2, G. F. Wagner3, B. G. Talbot2, and P. Lacasse2, 1*Universté de Sherbrooke, Sherbrooke, QC, Canada, 2AAFC-Dairy and Swine R&D Center, Lennoxville, QC, Canada, 3University of Western Ontario, London, ON, Canada.

Effects of weaning age and ambient temperature on sow endocrine status and mammary secretions around weaning. C. Farmer*, W. Olea1, D. Torres1, R. J. Collier2, and D. L. Hadsell1, 1University of Arizona, Tucson, 2University of Kentucky, Lexington, 3Rich Equine Nutrition Consulting, Memphis, TN.

Circadian variation of pasture NSC and insulin concentrations in horses. B. Byrd*, K. Treiber1, D. Kronfeld1, W. Staniar1, R. Magliaro, A. C. W. Kauf, M. L. O’Connor, and L. D. Muller, AAFC-Dairy and Swine R&D Center, Lennoxville, QC, Canada, 2University of Western Ontario, London, ON, Canada.

Lactation Biology

Exhibit Hall A

Abstract #

Milk yield and udder capacity of cows with different milk concentration milked once or twice daily. D. Clark*, D. Dalley1, and S. Davis2, 1Dexcel, Hamilton, New Zealand, 2ViaLactia Biosciences, Auckland, New Zealand.

Effects of weaning age and ambient temperature on sow endocrine status and mammary secretions around weaning. C. Farmer*, W. Olea1, D. Torres1, R. J. Collier2, and D. L. Hadsell1, 1University of Arizona, Tucson, 2University of Kentucky, Lexington, 3Rich Equine Nutrition Consulting, Memphis, TN.
Unraveling the requirement of insulin for milk protein synthesis: A microarray perspective. K. K. Menzies*1,2, C. Lefevre1,2, K. L. Macmillan1, and K. R. Nicholas1,1CRC for Innovative Dairy Products, University of Melbourne, Australia,2 Victorian Bioinformatics Consortium, Monash University, Clayton, Australia,3School of Veterinary Science, University of Melbourne, Werribee, Australia.

Shortening the dry period from 60 to 40 days does not affect colostrum quality but decreases colostrum yield by Holstein cows. D. J. Grusenmeyer*, C. M. Ryan, D. M. Galton, and T. R. Overton, Cornell University, Ithaca, NY.

Effect of subclinical mastitis and breed on somatic cell counts and milk constituents and the accuracy of using pooled samples. E. L. Huether*, D. W. Holcombe, and E. R. Kretschmer, University of Nevada, Reno.

Regulation of haptoglobin (Hp) mRNA expression in the bovine mammary gland parenchyma during experimental mastitis. M. A. Thielen1, M. Mielenz1, S. Hiss1, W. Petzl2, H. Zerbe2, H. J. Schuberth3, H. M. Seyfert1, and H. Sauerwein*1,1University of Bonn, Bonn, Germany,2LMU, Munich, Germany,3TiHo, Hannover, Germany,4FBN, Dummerstorf, Germany.

Effect of sampling day and number of lambs raised on somatic cell counts (SCC) and cell populations in ewe milk. E. R. Kretschmer*, D. W. Holcombe1, D. Redelman2, and D. L. Garner1,1University of Nevada, Reno,2Sierra Cytometry/UNR Cytometry Center, Reno, NV.

Nonruminant Nutrition

Dietary Influences on Boars, Sows and Gilt Development

Exhibit Hall A

Abstract #

W118 True calcium and phosphorus digestibility and the endogenous calcium and phosphorus outputs associated with soybean meal for multi-parity sows measured by the simple linear regression technique. K. Kuang1, R. He1, J. Wang2, Y. L. Yin3,4, and M. Z. Fan*4,1Huazhong Agricultural University, Wuhan, Hubei Province, China,2The Chinese National Institute of Animal Sciences, Beijing, China,3The Chinese Academy of Sciences, Changsha, Hunan Province, China,4University of Guelph, Ontario, Canada.

W119 Development of procedures to assess the potential for parturient hypocalcemia in sows. C. Darriet and T. D. Crenshaw*, University of Wisconsin, Madison.

W120 The effect of omega-3 fatty acid addition to sow diets on milk composition. S. A. Meers*, C. R. Dove, and M. J. Azain, University of Georgia, Athens.

W121 Protein and dry matter digestibility of colostrums by newborn piglets. C. Lin*1, D. C. Mahan2, and S. W. Kim1,1Texas Tech University, Lubbock,2The Ohio State University, Columbus.

W122 Determination of bioequivalence ratio of D-α- to DL-α-tocopheryl acetate based on tissue α-tocopherol content of swine. H. Yang*, D. Mahan2, D. Hill1, T. Shipp1, T. Radke1, and M. Cecava1,1ADM Animal Nutrition, Quincy, IL,2The Ohio State University, Columbus,3ADM Animal Health and Nutrition, Quincy, IL.

W123 Amino acid requirements of lactating sows: Selection of source data for factorial estimates. K. T. Soltwedel1,2, N. R. Augspurger2, S. K. Webel2, D. D. Hall3, and J. E. Pettigrew1,1University of Illinois, Urbana,2JBS United, Sheridan, IN,3AusGene International, Gridley, IL.

W124 Effects of feed allowance levels on nitrogen retention and blood hormone levels in gestating and dry gilts. D. Wu*1,2, F. Yang1, A. Zhou1, Z. Wang1, and K. Wang1,1Sichuan Agricultural University, Ya'an, Sichuan, China,2University of Guelph, Ontario, Canada.

W125 Effect of feeding rye silage and feed restriction on performance and reproductive development in developing gilts. J. H. Cho*, Y. K. Han2, B. J. Min1, Y. J. Chen1, H. J. Kim1, J. S. Yoo1, J. W. Kim1, and I. H. Kim1,1Dankook University, Cheonan, Chungnam, Korea,2Sungkyunkwan University, Suwon, Gyeonggi, Korea.


W127 Comparative study of two analytic methodologies for the determination of acid-insoluble ash for evaluation of nutrients digestibility in broiler diets. E. Jiménez–Moreno, J. M. González–Alvarado, A. Coca, R. Lázaro, and G. G. Mateos*, Universidad Politécnica de Madrid, Spain.
Nonruminant Nutrition

Enzyme Supplementation

Exhibit Hall A

Abstract #

W128 Investigating possible interactions between phytase and xylanase in wheat-based diets for growing pigs. T. A. Woyengo*, C. M. Nyachoti, J. S. Sands, and W. Guenter, 1University of Manitoba, Winnipeg, Manitoba, Canada, 2Dansico Animal Nutrition, Marlborough, United Kingdom.


W132 Effect of enzyme supplementation and inclusion level of wheat distillers dried grains with solubles on energy and nutrient digestibilities in growing pigs. F. O. Opapeju, C. M. Nyachoti, and B. A. Slominski, University of Manitoba, Winnipeg, MB, Canada.

Nonruminant Nutrition

Nutrition - Broilers, Layers, Guinea Pigs, Rabbits and Rats

Exhibit Hall A

Abstract #


W134 Dietary high-tannin sorghum increases growth rate in rats. R. Larrain*, J. Reed, University of Wisconsin, Madison.

W135 Utilization of deglycosylated soy protein in monogastrics. B. C. Tooker and T. S. Stahly*, Iowa State University, Ames.

W136 A study of sweet (Surumi, Patacamya, Sayana, Chucapaca) and bitter (Real) Bolivian quinoa cultivars compared to corn, barley and oats on the lactation of improved guinea pigs. R. N. Pate, N. P. Johnston*, E. Rico, A. Bonifacio, R. O. Kellems, and D. L. Kooyman, Brigham Young University, Provo, Utah, University of San Simon, Cochabamba, Bolivia, University of San Andres, La Paz, Bolivia.

W137 Level of soluble fiber and medication influence the presence of intestinal pathogen microbiota in young rabbits. M. S. Gómez-Conde, A. Pérez de Rozas, I. Badiola, S. Chamorro, G. G. Mateos*, J. C. De Blas, J. García, and R. Carabaño, Universidad Politécnica, Madrid, Spain, CReSA (UAB-IRTA), Bellaterra, Spain.


W142 Determination of endogenous amino acid flows at the terminal ileum of broiler chickens fed various protein sources using the homoarginine technique. V. Ravindran*, G. Ravindran, and W. L. Bryden, Massey University, Palmerston North, New Zealand, University of Queensland, Gatton, QLD, Australia.

Physiology and Endocrinology
Endocrinology/Metabolic Physiology
Exhibit Hall A

Abstract #

Glucose-dependent insulin response in dairy cows within segregating family structure is related to milk yield. H. M. Hammon*, O. Bellmann, J. Voigt, F. Schneider, and C. Kühn, Research Institute for the Biology of Farm Animals (FBN), Dummerstorf, Germany.


The ontogeny of insulin-like growth factor-I (IGF-I) modulation of GH secretion from porcine anterior pituitary cells in culture. C. R. Barb* and G. J. Hausman, USDA, ARS, Russell Research Center, Athens, GA.

Effects of gluten supplementation on lymphocyte subpopulations and proliferation in the peripheral blood supply of the transition dairy cow. J. A. Woodward*, R. J. Christopherson1, C. J. Field1, S. Goruk1, G. Murdoch1, M. A. G. von Keyserlingk1, J. A. Bell1, and J. R. Thompson1,1University of Alberta, Edmonton, Canada, 2University of British Columbia, Vancouver, Canada.

Leptin genotype influences lactation performance of Holstein cows. J. E. P. Santos*1 and R. C. Chebel1,1University of California Davis, Tulare,2University of Idaho, Caldwell.

Influence of maternal nutrition on placental vascularity and mRNA expression of angiogenic factors (AFs) and their receptors (AFRs) in adolescent sheep. D. A. Redmer*1,2, R. P. Aitken2, J. S. Milne2, M. L. Johnson1, D. Rouse1, P. P. Borowicz1, M. Borowicz2, K. C. Kraft1, L. P. Reynolds1, J. S. Luther2,3, and J. M. Wallace1,1North Dakota State University, Fargo,2Rowett Research Institute, Aberdeen, Scotland, UK.

Propionate infusion alters G protein-coupled receptor GPR41 mRNA expression and the leptin system in goats. M. Mielenz, C. Seybold, and H. Sauerwein*, University of Bonn, Germany.

Evaluation of the adaptive capability in dairy cows during the peripartal period. S. Hachenberg, C. Weinkauf, S. Hiss, U. Müller, and H. Sauerwein*, University of Bonn, Germany.

Hot season and BCS affect leptin secretion of periparturient dairy cows. U. Bernabucci*, N. Lacetera1, L. Basiricò1, B. Ronchi1, P. Morera1, E. Seren2, and A. Nardone1,1University of Bern, Switzerland, 2University of Bonn, Germany.

Detection of photonic emissions with varying concentrations of Salmonella typhimurium–lux through porcine intestinal tissue: A comparison of two photonic imaging systems. K. Moulton*, E. Williams1, P. Ryan1, D. Moore1, S. Kim1, D. Lay2, and S. Willard1,1Mississippi State University, Mississippi State, 2USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN.


Characterization of bovine granulocyte chemotactic protein-2 in mammary glands with Escherichia coli mastitis. J.-W. Lee*1 and X. Zhao2,1National Pingtung University of Science and Technology, Neipu, Pingtung, Taiwan, 2McGill University, Ste-Anne-de-Bellevue, Quebec, Canada.

Somatotropic axis components in and growth rates of IGF-I divergent Angus heifers receiving exogenous bovine (b) ST. K. J. Steinman*, T. A. Hoagland1, M. E. Davis1, and S. A. Zinn1,1University of Connecticut, Storrs, 2The Ohio State University, Columbus.


Transcriptional profiling of hepatic constitutive androstane receptor and target genes in relation to boar taint compounds in backfat of pigs. D. L. Greger*, C. Morel1, G. Bee2, S. Ampuero2, C. R. Baumrucker1, and J. W. Blum1,1Pennsylvania State University, University Park, 2Agroscope Liebefeld-Posieux, Posieux, Switzerland, 3University of Bern, Switzerland.

Evaluation of reproduction and blood metabolites in heifers fed dried distillers grains plus solubles or soybean hulls during late gestation. C. L. Engel*, H. H. Patterson, B. L. Perry, and G. A. Perry, South Dakota State University, Brookings.


Effects of Posilac on immune and endocrine responses of channel catfish challenged with Edwardsiella ictaluri. B. Peterson*, B. Small, and A. Bilodeau, USDA-ARS Catfish Genetics Research Unit, Stoneville, MS.

Effects of milking frequency in early lactation on prolactin and growth hormone release and on milk production throughout lactation. E. A. Albers, C. C. Williams*, C. F. Hutchison, D. T. Gantt, C. Leonardi, L. R. Gentry, and C. C. Stanley, LSU Agricultural Center, Baton Rouge, LA.


Influence of breed type and temperament on anatomic and endocrinologic parameters of the bovine hypothalamic-pituitary-adrenal (HPA) axis. K. O. Curley, Jr.*, J. Lyons*, M. S. Brown*, T. E. Lawrence*, J. A. Carroll*, R. C. Vanni*, S. T. Willard*, T. H. Welsh, Jr.*, and R. D. Randle, 1Texas Agricultural Experiment Station, College Station, 2West Texas A&M University, Canyon, 3Livestock Issues Research Unit, ARS-USDA, Lubbock, TX, 4Brown Loam Experiment Station, Raymond, MS, 5Mississippi State University, Mississippi State, 6Texas Agricultural Experiment Station, Overton.

Identification of growth hormone-regulated genes in the bovine liver by a microarray analysis. H. Jiang* and S. Eleswarapu, Virginia Polytechnic Institute and State University, Blacksburg.

**Production, Management and the Environment III**

**Exhibit Hall A**

**Abstract #**

Effectiveness of ocular thermography for the determination of body temperature in livestock: A multi-species analysis. S. Willard*, P. Ryan*, D. Sykes*, M. Crenshaw*, R. Vanni*, R. Randle, T. Welsh*, S. Bowser*, M. Jones*, and A. Chromiak*, 1Mississippi State University, Mississippi State, 2Brown Loam Experiment Station, Raymond, MS, 3Texas Agricultural Experiment Station, Overton and College Station, TX.

Description and summarization of reticular core-body temperatures obtained from an automatic temperature recording system. J. M. Bewley*, D. C. Batson*, and M. M. Schutz*, 1Purdue University, West Lafayette, IN, 2MaGiiX Inc., Post Falls, ID.

Qualitative assessment of the irrigation water from separated and aerated flushed dairy manure. M. Hollmann*, K. F. Knowlton, C. M. Parsons*, and T. N. Rensch, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Integrity Nutrient Control Systems, Inc., Chambersburg, PA.

Chemical parameters, particle and nutrient removal with separation, settling, and aeration in flushed dairy manure. M. Hollmann*, K. F. Knowlton, C. M. Parsons*, and T. N. Rensch, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Integrity Nutrient Control Systems, Inc., Chambersburg, PA.


Distribution of phosphorus and nitrogen when dairy manure is separated into solids and liquids. Z. Wu* and D. Burns, Pennsylvania State University, University Park.


Environmental perspective of nitrogen use efficiency in dairy farms. H. Arriaga¹, M. Pinto¹, P. Merino¹, and S. Calsamiglia*², ¹NEIKER A.B. Basque Institute for Agricultural Research and Development, Basque Country, Spain, ²Universitat Autonoma Barcelona. Faculty of Veterinary, Barcelona, Spain.

The effects of floor space on pig growth performance and carcass characteristics in a commercial wean-to-finish facility. B. A. Peterson*, M. Ellis¹, B. F. Wolter², R. Bowman³, J. M. DeDecker⁴, and M. J. Ritter⁵, ¹University of Illinois, Urbana, ²The Maschhoffs, Inc., Carlyle, IL.

Association of number of services and reservice intervals with reproductive performances in female pigs on commercial farms. Y. Takai* and Y. Koketsu, Meiji University, Kawasaki, Kanagawa, Japan.

Variability and repeatability of gestation length across parity associated with reproductive performance in a cohort of gilts on commercial farms. Y. Sasaki* and Y. Koketsu, Meiji University, Kawasaki, Kanagawa, Japan.

Lifetime assessment of sows mated 4 to 6 days after weaning in commercial breeding herds. Y. Hoshino* and Y. Koketsu, Meiji University, Kawasaki, Kanagawa, Japan.

Can the chemical composition of the whole body of a goat be estimated from parts of its body? I. A. M. A. Teixeira*¹/², K. T. Resende¹, J. M. Pereira Filho¹, M. M. Salin¹, R. A. Gomes¹, R. C. Canesin¹, and L. O. Tedeschi¹, ¹Universidade Estadual Paulista/FCAV, Jaboticabal, SP, Brazil, ²Universidade Federal de Campina Grande, Patos, PB, Brazil, ³Texas A&M University, College Station, ⁴FAPESP, São Paulo, SP, Brazil.

Calibration of a respiratory chamber for calorimetry studies. N. Rodriguez*¹, W. Campos¹, and M. Lopez¹, ¹Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, ²Consejo Superior de Investigaciones Científicas, Granada, España.

Lipe, an external natural marker for digestibility studies. E. Saliba, N. Rodriguez*, and D. Pilo-Veloso, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

Effect of choice of microbial marker and variation in solid- to liquid-associated bacteria proportion in duodenal contents on the estimation of duodenal bacterial nitrogen flow. B. Vlaeminck*¹, R. J. Dewhurst², and V. Fievez¹, ¹Ghent University, Belgium, ²Lincoln University, New Zealand.

Effect of centrifugal force on the recovery of markers in ruminal bacterial samples. A. N. Hristov* and S. Zaman, University of Idaho, Moscow.

Relationship between in situ dry matter disappearance and gas production technique. A. Taghizadeh* and M. Hatami, Tabriz University, Tabriz, East Azarbayjan, Iran.

Relationship between in vitro dry matter disappearance and gas production technique. A. Taghizadeh*, M. Hatami, and G. A. Moghaddam, Tabriz University, Tabriz, East Azarbayjan, Iran.

Relationship between in vitro gas production of ethanol extracted residue and NDF of corn silage and unfractionated corn silage. M. Hatami and A. Taghizadeh*, Tabriz University, Tabriz, East Azarbayjan, Iran.

Relationship between dry matter and crude protein disappearance using in situ technique. A. Taghizadeh* and M. Hatami, Tabriz University, Tabriz, East Azarbayjan, Iran.

Comparison of using a reflux apparatus or ANKOM Fiber Analyzer with sequential or direct analysis to evaluate the fiber content in various feeds. D. H. Kleinschmit*, D. J. Schingoethe, A. R. Hippen, and K. F. Kalscheur, South Dakota State University, Brookings.

Ruminant Nutrition
Calves & Heifers - Dairy
Exhibit Hall A

Abstract #

W209  Performance of Holstein dairy heifers full vs. limit fed whole-shelled corn and protein pellet diets with differing fiber levels. H. Vaca-Venancio1, O. Montañez-Valdez2, J. Vargas-Burgos3, J. Tuarez-Cobea1, and R. Vivas-Moreira1, 1Unidad de Investigación Científica y Tecnológica, Facultad de Ciencias Pecuarias, Universidad Técnica Estatal de Quevedo, Quevedo, Ecuador, 2Centro Universitario del Sur. Universidad de Guadalajara, Guadalajara, México, 3Colegio de Postgraduados, Texcoco, México.

W199  Effects of applying exogenous, non-starch polysaccharidases to pre-weaning starter diet on performance of Holstein calves. G. R. Ghorbani1, A. Jafari1, A. H. Samie1, and A. Nikkhah*, 1Isfahan University of Technology, Isfahan, Iran, 2University of Manitoba, Winnipeg, MB, Canada.

W200  Physical form of starter concentrate for young Holstein calves. G. R. Ghorbani1, M. Bagheri Varzaneh1, and A. Nikkhah*2, 1Isfahan University of Technology, Isfahan, Iran, 2University of Manitoba, Winnipeg, MB, Canada.

W201  The effect of milk replacer fat source on calf growth and health. T. E. Johnson, H. B. Perry, and B. L. Miller, Land O’ Lakes, Inc., Webster City, IA.


W203  Short- and medium-term effects of an enhanced-growth feeding program in dairy calves. M. Terré*1 and A. Bach12, 1IRTA-Unidad de Remugants, Barcelona, Spain, 2ICREA, Barcelona, Spain.


W206  Performance of dairy heifer calves fed milk replacers with equal protein and fat levels but utilizing different fat sources. B. Braman*, S. Hayes1, H. Chester-Jones2, D. Ziegler1, J. Linn1, and B. Ziegler1, 1Milk Products, Chilton, WI, 2University of Minnesota, St. Paul, 3Hubbard Feeds, Mankato, MN.

W207  Pre- and post weaning performance of dairy heifer calves fed texturized or pelleted calf starters with or without intake enhancing flavors. B. Ziegler*, R. Larson1, H. Chester-Jones2, D. Ziegler2, J. Linn1, and S. Hayes1, 1Hubbard Feeds, Mankato, MN, 2University of Minnesota, St. Paul, 3Milk Products, Chilton, WI.

W208  Performance of Holstein dairy heifers fed concentrate diets containing dried distillers grains or urea. R. Larson*, 1B. Ziegler1, J. Linn2, D. Ziegler2, and H. Chester-Jones1, 1Hubbard Feeds, Mankato, MN, 2University of Minnesota, St. Paul, 3University of Minnesota, St. Paul.

W209  Performance of Holstein dairy heifers full vs. limit fed whole-shelled corn and protein pellet diets with differing fiber levels. H. Chester-Jones*, D. Ziegler, R. Larson1, B. Ziegler1, and J. Linn1, 1University of Minnesota, St. Paul, 2University of Minnesota, St. Paul.


W211  The effects of restricted feeding a high concentrate or high forage ration for similar weight gains on structural growth in Holstein heifers. G. I. Zanton* and A. J. Heinrichs, The Pennsylvania State University, University Park.

Ruminant Nutrition
Feedstuff Digestibility & Nutritive Value
Exhibit Hall A

Abstract #


W213  Estimation of the nutritive value of cereals and wheat by products with or without oregano and rosemary supplementation. A. Caputi Jambrenghi1, F. Giammico*, M. A. Colonna1, C. A. Marano1, L. Marvulli1, G. Cappiello2, and G. Vonghia1, 1University of Bari, Bari, Italy, 2Breeder Association of Taranto, Taranto, Italy.
Nutritive evaluation of different types of frost damaged wheat for ruminants: I. Chemical characterization, II. energy values, III. protein and carbohydrate subfractions, IV. rumen degradation kinetics, and V. modeling nutrient supply. P. Yu*, V. Racz, L. White, J. J. McKinnon, and D. A. Christensen, *University of Saskatchewan, Saskatoon, SK, Canada.

In vitro digestibility of wet sorghum distillers grain. C. R. Richardson1, J. H. Mikus1, D. W. Boyles2, A. T. Moore*, I. J. E. Vander Dussen1, H. P. Hagaman1, and B. S. May1, 1Texas Tech University, Lubbock, 2LDJ Nutrition, Lubbock, TX, 3Rajen Dairy, Clovis, NM.

Monitoring the fate of gamma irradiated soybean meal proteins in the rumen. P. Shawrang1, A. Nikkhah*, A. A. Sadeghi2, and G. Raisali2, 1Tehran University, Karaj, Iran, 2Islamic Azad University, Tehran, Iran, 3Nuclear Research Center for Agriculture and Medicine, Iranian Atomic Energy Organization, Karaj, Iran.

Monitoring the fate of gamma irradiated canola meal proteins in the rumen. P. Shawrang1, A. Nikkhah*, A. A. Sadeghi2, A. Zareh1, and P. Shawrang2, 1Tehran University, Karaj, Iran, 2Islamic Azad University, Tehran, Iran.

Influence of level of dietary forage fiber on intake and nutrient utilization of dairy goats. R. H. Branco1, M. T. Rodrigues*2, M. M. C. da Silva2, C. A. F. Rodrigues2, V. Viana2, and J. Ribeiro, 1Escuela de Zootecnia, Universidad Estadual de Maringá-DZO, Umuarama, PR, Brazil, 2University of Nebraska, Lincoln.

Effect of microwave irradiation on ruminal starch and protein degradation characteristics of barley grain. A. Nikkhah*, A. A. Sadeghi2, and P. Shawrang1, 1Tehran University, Karaj, Iran, 2Islamic Azad University, Tehran, Iran.

Effect of ethanol treatments of soybean meal on rumen escape of soybean meal protein. A. A. Sadeghi1, A. Nikkhah*, and P. Shawrang2, 1Islamic Azad University, Tehran, Iran, 2Tehran University, Karaj, Iran.


Effect of Grain Prep® surfactant on ruminal in situ degradability of flaked corn dry matter and starch. A. N. Hristov*, S. Zaman1, K. Huber1, and D. Greer1, University of Idaho, Moscow, 2AgríChem, Inc., Ham Lake, MN.


Effect of replacing barley grain with cork oak acorn (Quercus Suber L.) on digestibility, nitrogen balance and growth of goat kids. G. B. Aziza*, A. Heidari, K. Haji2, and M. Rabia2, 1Institut National Agronomique Tunis, Mahrafjène Tunis, Tunisie, 2Ecole Supérieure d’Agriculture Mateur, ESA Mateur, Tunisie.

Apparent digestibility, voluntary feed intake and performance of goat kids fed olive cake ensiled with different feedstuffs. F. T. Sleiman*, R. E. Issa1, S. H. Ibrahim2, M. G. Uwayjan1, S. K. Hamadeh1, I. Toufeli1, and M. T. Farran1, 1American University of Beirut, Beirut, Lebanon, 2University of Dohuk, Dohuk, Kurdistan, Iraq.

Effect of Pleurotus florida on digestibility of wheat stubble and date palm leaf in sheep. K. Kafizadeh*, A. Kabirifard2, and H. Fazaeli3, 1Razi University, Kermanshah, Kermanshah, Iran, 2Research Center of Agriculture and Natural Resources, Boushehr, Iran, 3Research Center of Animal Science, Karaj, Iran.

Ruminant Nutrition
Forage & Fiber
Exhibit Hall A

Ingestive behavior of dairy goats and feedlot lambs fed sugar cane silage. C. Q. Mendes, I. Susin*, A. V. Pires, L. G. Nussio, R. C. Araujo, L. V. Gerage, and M. F. Ribeiro, Escola Superior de Agricultura Luiz de Queiroz (ESALQ)/University of São Paulo (USP), Piracicaba, São Paulo, Brazil.

Effects of dietary fiber from forage of advanced maturity on performance of lactating goats. R. H. Branco1, M. T. Rodrigues*2, M. M. C. da Silva2, C. A. F. Rodrigues2, V. Viana2, F. D. O. Morbi1, R. da Silva Matos2, and M. de Souza Duarte2, 1Instituto de Zootecnia, Sertãozinho, São Paulo, Brasil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brasil.

W231 Evaluation of sorghum silage and grain with condensed tannin in the diet for ruminants. H. Carneiro*1, S. Peregrino2, and N. J. M. Matos2, 1Empresa Brasileira de Pesquisa Agropecuária, Juiz de Fora, MG, Brazil, 2Universidade Federal Rural do Rio de Janeiro, Soropódcica, RJ, Brazil.

W232 Development of an on-farm system to determine pef value of as fed forages and TMR. K. W. Cotanch*1, R. J. Grant1, C. S. Ballard1, J. W. Darrah1, H. M. Dann1, and T. Takano1, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2Zen-No National Federation of Agricultural Co-operative Associations, Tokyo, Japan.

W233 Effect of physically effective fiber on digestion and milk production of dairy cows fed diets containing barley or corn grains. W. Z. Yang* and K. A. Beauchemin, Research Center, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

W234 Effects of feeding Roundup Ready® alfalfa on intake and milk production of dairy cows. D. K. Combs*1 and G. F. Hartnell2, 1University of Wisconsin, Madison, 2Monsanto Company, St. Louis, MO.


W236 Fermentation, dry matter recovery, and aerobic stability of corn silage inoculated with L. plantarum or L. buchneri. V. Sewalt1, A. Lamptey*, D. Sapienza2, and D. Westerhaus1, 1Kemin Industries, Des Moines, IA, 2Sapienza Analytica, Slater, IA.


W239 Monitoring the fate of red clover and Alfalfa proteins during wilting, drying, ensiling and ruminal fermentation. A. A. Sadeghi1, P. Shawrang2, and A. Nikkhah*, 1Islamic Azad University, Tehran, Iran, 2Tehran University, Karaj, Iran.

W240 Effect of regrowth interval in spring and autumn on intake and rumen fermentation in beef cattle offered zero-grazed grass. D. Owens*1, 2, M. McGee1, and F. P. O’Mara1, 1Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, 2School of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

Sheep Species

Exhibit Hall A

Abstract #

W241 Small Ruminant Nutrition System; A computer model to develop feeding programs for sheep and goats. A. Cannas*, 1University of Sassari, Sassari, Italy, 2Texas A & M University, College Station, 3Cornell University, Ithaca, NY.

W242 The effect of chicory, burr medic and safflower forages on milk fatty acid composition, especially conjugated linoleic acid cis9, trans11. A. Cañidà*, M. Addis1, M. Decandia1, G. Priedda1, S. Spada1, M. Fiori1, M. Sitzia1, N. Foisi1, G. Molle1, S. Landau2, and A. Piri2, 1Istituto Zootecnico e Caseario per la Sardegna, Olmedo, Italy, 2Gilat Research Center, Mobile Post Negev 2, Israel.


W245 Effect of whole moisture heat damaged cottonseed on growth performance and carcass characteristics in Pelibuey sheep. A. Estrada-Angulo*1, R. Rodriguez1, M. Mellado1, J. F. Obregon1, F. G. Rios1, G. Contreras1, and J. C. Robles1, 1FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico, 2Universidad Autonoma Agraria Antonio Narro BuenoVista, Saltillo, Coahuila Mexico.

W246 Carcass yield and loin tissue composition of feedlot lambs fattened with diet containing fish residue silage. A. G. da Silva Sobrinho*1, S. M. Yamamoto1, R. M. Vidotti1, H. B. A. de Souza1, A. C. Homem Junior1, and R. S. B. Pinheiro1, 1Unesp-Sao Paulo State University, Jacoticabal, Sao Paulo, Brazil, 2CAPTAPC/Fishing Institute, Sao Jose do Rio Preto, Sao Paulo, Brazil.


W248 The effect of feeding yeast (Saccharomyces cevisiae) on growth and white blood cell count as an indicator of the immune system in suckling lambs. F. Kafilizadeh* and M. Rahmani, Saveh Azad University, Saveh, Iran.

W249 Effects of ACTH and ascorbic acid application on phagocytic activity of neutrophil leukocytes in Akkaraman sheep. F. S. Hatipoglu*1, C. Altinsaat2, and N. Sulu1, 1Akdeniz University, Burdur, Turkey, 2Ankara University, Ankara, Turkey.
Teaching/Undergraduate and Graduate Education

Exhibit Hall A

Abstract #

W254  Factors associated with students’ self-reported amount of learning in dairy science courses. R. R. Rastani* and M. A. Wattaux, University of Wisconsin, Madison.

W255  Leadership development through leadership action plans. D. R. Brink*, L. D. Moody, and M. M. Peterson, University of Nebraska, Lincoln.

W256  Promoting student engagement in the animal sciences: Incorporation of an academic pedigree project into an undergraduate animal breeding and genetics course. C. J. Kojima*, University of Tennessee, Knoxville.

W257  Teaching animal behavior research to animal science students. D. B. Imwalle*, S. E. Becker, and L. S. Katz, Rutgers University, New Brunswick, NJ.

W258  Development of a course in embryo transfer and related technologies for undergraduate students in agriculture. C. R. Youngs*, Iowa State University, Ames.

W259  Introduction of a laboratory component to a therapeutic horseback riding course. M. Nicodemus* and K. Slater, Mississippi State University, Mississippi State.

OTHER EVENTS

ADSA/ASAS Joint Business Meeting
101 B-C
9:30 AM

ADSA Business Meeting
101 A
10:00 AM

ASAS Business Meeting
101 D-E
10:00 AM
SYMPOSIA AND ORAL SESSIONS

SYMPOSIUM

ADSA Production Division, Dairy Reproduction Terminology Workshop

Chair: Ellen R. Jordan, Texas A&M University

Sponsor: Arm & Hammer Animal Nutrition

Symposium meets AAVSB’S RACE requirement for 2 hr CE.

101 J

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>426</td>
<td>Reproductive terminology workshop. E. R. Jordan*, J. S. Stevenson², P. M. Fricke³, and M. W. Overton⁴, ¹Texas A &amp; M University, Dallas, ²Kansas State University, Manhattan, ³University of Wisconsin, Madison, ⁴University of Georgia, Athens.</td>
</tr>
<tr>
<td>10:35 AM</td>
<td></td>
<td>Introduction. E. Jordan, Texas A&amp;M University, Dallas.</td>
</tr>
<tr>
<td>10:50 AM</td>
<td></td>
<td>General terminology. M. Overton, University of Georgia, Athens.</td>
</tr>
<tr>
<td>11:10 AM</td>
<td></td>
<td>Discussion.</td>
</tr>
<tr>
<td>11:25 AM</td>
<td></td>
<td>Synchronization program terminology. J. Stevenson, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td></td>
<td>Discussion.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td></td>
<td>Reproductive outcome terminology. P. Fricke, University of Wisconsin, Madison.</td>
</tr>
<tr>
<td>12:20 PM</td>
<td></td>
<td>Wrap-up.</td>
</tr>
</tbody>
</table>

SYMPOSIUM

ARPAS

Assessment and Management of Feedstuff Variation in Dairy Nutrition

Chair: Charles Schwab, University of New Hampshire

Sponsor: ARPAS

101 H-I

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>427</td>
<td>How can dairy nutrition models deal with uncertainty? R. A. Kohn*, University of Maryland, College Park.</td>
</tr>
<tr>
<td>11:40 AM</td>
<td>429</td>
<td>Impact of variation in diet nutrient inputs on model output predictions. J. G. Fadel, H. A. Johnson, and P. H. Robinson*, University of California, Davis.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>430</td>
<td>Managing feedstuff variation in nutritional practice. N. R. St-Pierre*, and W. P. Weiss², ¹The Ohio State University, Columbus, ²Ohio State University, Wooster.</td>
</tr>
</tbody>
</table>
SYMPOSIUM
Bioethics
Ethical and Social Issues in Animal Biotechnology
Chair: Candace Croney, Oregon State University

101 A

Time Abstract #
10:30 AM Introductions. C. Croney, Oregon State University, Corvallis.
11:25 AM 433 Genetically engineered animals and the ethics of food labeling. R. Streiffer* and A. Rubel, University of Wisconsin, Madison.
11:45 AM Discussion.

Dairy Foods
Products and Processing
Chair: Douglas Olson, Louisiana State University Agricultural Center

200 D-E

Time Abstract #
10:45 AM 435 Comparison of the fatty acid distributions among different vegetable oil blends toward infant milk formulation. C. O. Maduko*, C. Akoh1, and Y. W. Park2, 1University of Georgia, Athens, 2Fort Valley State University, Fort Valley, GA.
11:00 AM 436 Milk quality improvement in Iran. R. Noorbakhsh* 1 and A. Heravi Moussavi2, 1Institute of Standards and Industrial Research, Mashhad, Iran, 2Center of Excellence and Department of Animal Science, Ferdowsi University, Mashhad, Iran.
11:30 AM Break
11:45 AM 438 Pressure-induced interactions of milk proteins: Are they different from heat-induced interactions? H. A. Patel*1,2, H. Singh1, and L. K. Creamer2, 1Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand, 2Fonterra Research Centre, Palmerston North, New Zealand.
12:00 PM 439 Microbial and somatic cells removal from raw skim milk by cold microfiltration: Quality and shelf life effects. J. A. Fritsch* and C. I. Morara, Cornell University, Ithaca, NY.
Forages and Pastures
Forage Finishing
Chair: John Fike, Virginia Tech
M100 B-C

Time   | Abstract # | Abstract
---     | ---        | ---
10:30 AM| 441        | Effects of forage species on fatty acid composition of beef longissimus muscle from forage-finished beef. S. K. Duckett*, E. Pavan², R. N. Sonon², J. Neel³, J. P. Fontenot⁴, and W. Clapham¹, ¹Clemson University, Clemson, SC, ²University of Georgia, Athens, ³USDA-ARS, Beaver, WV, ⁴Virginia Tech, Blacksburg.
10:45 AM| 442        | Effects of forage species on rib composition, color, and palatability in forage-finished beef. S. K. Duckett*, R. N. Sonon², E. Pavan², J. Neel³, J. P. Fontenot⁴, G. Scaglia¹, and W. Clapham¹, ¹Clemson University, Clemson, SC, ²University of Georgia, Athens, ³USDA-ARS, Beaver, WV, ⁴Virginia Tech, Blacksburg, VA.
11:00 AM| 443        | Corn oil or corn grain supplementation to forage-finished steers I. Effects on animal performance and carcass quality. E. Pavan*¹² and S. Duckett¹, ¹University of Georgia, Athens, ²INTA, Balcarce, Bs. As., Argentina, ³Clemson University, Clemson, SC.
11:15 AM| 444        | Corn oil or corn grain supplementation to forage-finished steers. II. Effects on s.c. and i.m. fatty acid composition. E. Pavan*¹² and S. Duckett¹, ¹University of Georgia, Athens, ²INTA, Balcarce, Bs. As., Argentina, ³Clemson University, Clemson, SC.
11:30 AM| 445        | Corn oil or corn grain supplementation to forage-finished steers. III. Effects on longissimus pH, tenderness, and flavor. E. Pavan*¹² and S. Duckett¹, ¹University of Georgia, Athens, ²INTA, Balcarce, Bs. As., Argentina, ³Clemson University, Clemson, SC.
12:00 PM| 447        | Use of cuticular wax alkanes to estimate digestibility and intake of cows at pasture with a view to estimating efficiency. S. W. Coleman*, C. C. Chase, Jr., and D. G. Riley, USDA ARS Subtropical Agricultural Research Station, Brooksville, FL.

SYMPOSIUM
Goat Species
Improving Meat, Milk and Parasite Control in Goats
Chair: Sandra Solaiman, Tuskegee University
L100 J

Time   | Abstract # | Abstract
---     | ---        | ---
10:30 AM| 449        | Indicators of fitness in Boer, Kiko, and Spanish does managed on pasture in Tennessee (Year 2). R. Browning, Jr.*, B. Donnelly, T. Payton, M. L. Leite-Browning, P. Pandya, W. Hendrixson, and M. Byars, Tennessee State University - IAgER, Nashville.
10:45 AM| 450        | Concentrate protein level for finishing intact or castrated Boer-cross meat goats. M. Poore*, A. Shaeffer, S. Freeman, H. Glennon, and J.-M. Luginbuhl, North Carolina State University, Raleigh.
11:00 AM| 451        | Generation and annotation of expressed sequence tags (ESTs) for the goat. B. L. Sayre*¹, G. Harris¹, J. Dzakuma², S. Samake¹, N. Whitley¹, and Z. Wang¹, ¹Virginia State University, Petersburg, ²Prairie View A&M University, Prairie View, TX, ³Fort Valley State University, Fort Valley, GA, ⁴University of Maryland-Eastern Shore, Princess Anne, ⁵Langston University, Langston, OK.
11:15 AM| 452        | Effects of preparturient intramuscular injection of vitamin E and selenium on milk somatic cell counts in dairy goats. I. Lin*¹², Y. Fan¹, and H. Chang¹, ¹National Chung Hsing University, Taichung, Taiwan, ROC, ²National Taiwan University, Taipei, Taiwan, ROC.
11:30 AM| 453        | Genetic parameters for milk yield in dairy goats across lactations in Germany. B. Zumbach¹², S. Tsutara*¹, I. Misztal¹, and K. J. Peters¹, ¹University of Georgia, Athens, ²Humboldt University, Berlin, Germany.
## Horse Species
### Equine Nutrition
#### Chair: Sarah Ralston, Rutgers University

**M100 A**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:45 AM</td>
<td>455</td>
<td>Effect of parity and day on foal nursing behavior during the first month of lactation. T. N. Stamper*, B. D. Nielsen, J. Liesman, and N. L. Trottier, Michigan State University, East Lansing, Grand-Rapids, MI.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>456</td>
<td>Effect of parity and day on nutrient intake by mares during the first month of lactation. T. N. Stamper, B. D. Nielsen, and N. L. Trottier, Michigan State University, East Lansing, Grand-Rapids, MI.</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>12:00 PM</td>
<td>459</td>
<td>Effects of dietary fish oil and flaxseed on plasma fatty acid composition and immune response in yearling horses. K. R. Vineyard, L. K. Warren, K. A. Skjolaas, J. E. Minton, and J. Kivipelto, University of Florida, Gainesville, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>460</td>
<td>Effects of fatty acid supplementation on plasma fatty acid concentrations and characteristics of the first postpartum estrous in mares. T. A. Poland, J. M. Kouba, C. M. Hill, C. Armendariz, J. E. Minton, and S. K. Webe, Kansas State University, Manhattan, JBS United, Inc., Sheridan, IN.</td>
</tr>
</tbody>
</table>

## Nonruminant Nutrition
### Sow Nutrition and Gilt Development
#### Chair: Brian Kerr, USDA - ARS - SOMMRU and Mike Orth, Michigan State University

**L100 B-C**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>461</td>
<td>Determining the threonine requirement of the lactating sow. J. D. Schneider, M. D. Tokach, S. S. Dritz, R. D. Goodband, J. L. Nelsen, and J. M. DeRouchey, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>463</td>
<td>Dietary protein concentration alter amino acid extraction rate across the porcine mammary gland during lactation. J. Perez Laspiur and N. L. Trottier, Michigan State University, East Lansing.</td>
</tr>
</tbody>
</table>
### Production, Management and the Environment III

**Chair:** L. Wayne Greene, Auburn University

**M100 I-J**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>467</td>
<td>Carry-over effect of extended photoperiod during pubescence on first lactation in beef heifers. J. A. Small<em>1 and A. D. Kennedy</em>1, 1Agriculture &amp; Agri-Food Canada, Brandon, MB, Canada, 2University of Manitoba, Winnipeg, MB, Canada.</td>
<td></td>
</tr>
<tr>
<td>10:45 AM</td>
<td>468</td>
<td>Influence of breed type and temperament on feedlot growth and carcass characteristics of beef steers. R. C. Vann<em>1, R. D. Randel</em>1, T. H. Welsh, Jr<em>1, S. T. Willard</em>1, J. A. Carroll<em>1, M. S. Brown</em>1, and T. E. Lawrence*1, 1MAFES-Brown Loam Exp. Station, Raymond, MS, 2TAES, College Station and Overton, TX, 3West Texas A&amp;M University, Canyon, 4Mississippi State University, Starkville, 5Livestock Issues Research Unit, Agricultural Research Service-USDA, Lubbock, TX.</td>
<td></td>
</tr>
<tr>
<td>11:00 AM</td>
<td>469</td>
<td>The effect of supplemented light on certain production parameters of young beef bulls fed intensively. P. J. Fourie*, D. J. Maasz, and D. O. Umesiobi, Central University of Technology, Free State, South Africa.</td>
<td></td>
</tr>
<tr>
<td>11:45 AM</td>
<td>472</td>
<td>A general model for predicting the retention of electronic boluses in the forestomachs of cattle and sheep. G. Caja*1, J. Ghirardi1, J. Casellas1, S. Carné1, M. Hernández-Jover1, and D. Garín1, 1Grup de Recerca en Remugants, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Facultad de Veterinaria, Universidad de la República, Montevideo, Uruguay.</td>
<td></td>
</tr>
<tr>
<td>12:00 PM</td>
<td>473</td>
<td>Estimation of demand function for different types of meat in Iran: Application of cointegration. J. Azizi*, Islamic Azad University, Rasht Branch, Rasht, Iran.</td>
<td></td>
</tr>
</tbody>
</table>

### Production, Management and the Environment IV

**Chair:** Dan Waldner, Cargill Animal Nutrition

**101 B-C**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>475</td>
<td>Potential demand for dairy farm revenue insurance. C. A. Wolf*, J. C. Hadrich, and J. R. Black, Michigan State University, East Lansing.</td>
<td></td>
</tr>
<tr>
<td>10:45 AM</td>
<td>476</td>
<td>Effect of mastitis and postpartum metabolic diseases on milk yield persistency in Holstein and Jersey cows. J. A. D. R. N Appuhamy<em>1, B. G. Cassell</em>1, and J. B. Cole*1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.</td>
<td></td>
</tr>
<tr>
<td>11:00 AM</td>
<td>477</td>
<td>Effect of preparturient intramuscular injection of vitamin E and selenium on milk somatic cell counts in Holstein cows. Y. K. Fan<em>1, I. T. Lin</em>1,2, and H. I. Chang*1, 1National Chung Hsing University, Taichung, Taiwan, ROC, 2National Taiwan University, Taipei, Taiwan, ROC, 3Uni-President Enterprises Corp., Tainan, Taiwan, ROC.</td>
<td></td>
</tr>
<tr>
<td>11:30 AM</td>
<td>479</td>
<td>Using heat stress audits to evaluate the level of heat stress on commercial dairies. J. Smith*1, M. VanBaale1, R. Rodriguez1, C. Jamison1, M. Brouk1, and J. Harner III1, 1Kansas State University, Manhattan, 2University of Arizona, Tucson, 3Monsanto, St. Louis, MO.</td>
<td></td>
</tr>
<tr>
<td>12:00 PM</td>
<td>481</td>
<td>Comparison of a 2-stage and linear controls for feedline soaking systems utilized in 2-row freestall barns. M. J. Brouk*, B. Cvetkovic, J. F. Smith, and J. P. Harner, Kansas State University, Manhattan.</td>
<td></td>
</tr>
</tbody>
</table>
### Ruminant Nutrition
#### Nitrogen Metabolism - Dairy

**Chair: Jeff Firkins, The Ohio State University**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:45 AM</td>
<td>484</td>
<td>Effects of duodenal infusion of graded amounts of threonine on lactational performances of dairy cows.</td>
<td>H. Rulquin*1 and P. M. Pisulewski2, 1University and Research Unit on Milk Production, Saint Gilles, France, 2Agricultural University, Cracow, Poland.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>485</td>
<td>Effect of different forms of methionine on lactational performance of dairy cows.</td>
<td>H. Rulquin*1, B. Graulet2, L. Delaby1, and J. C. Robert1, 1University and Research Unit on Milk Production, Saint Gilles, France, 2Centre of Studies and Research on Nutrition, Commentry, France.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>486</td>
<td>Effect of the isopropylester of the hydroxylated analogue of methionin (HMBi) on feed intake and performance of dairy cows in early lactation.</td>
<td>V. A. Hindle1, C. A. Kan1, J. C. Robert2, and A. M. van Vuuren*1, 1Animal Sciences Group of Wageningen UR, Lelystad, The Netherlands, 2Adisseo France SAS, Commentry, France.</td>
</tr>
<tr>
<td>11:45 AM</td>
<td>488</td>
<td>Milk production response of dairy cows to silage mixtures fed with concentrates of varying ruminal degradation rate.</td>
<td>A. Konyali1,2, K.-H. Südekum*1,3, W. Junge1, and E. Kalm1, 1University of Kiel, Kiel, Germany, 2Çanakkale Onsekiz Mart University, Çanakkale, Turkey, 3University of Bonn, Bonn, Germany.</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>489</td>
<td>Reduced rumen degradable protein (RDP) and abomasal inulin reduce diet digestibility and urinary nitrogen in lactating dairy cows.</td>
<td>T. F. Gressley* and L. E. Armentano, <em>University of Wisconsin, Madison.</em></td>
</tr>
</tbody>
</table>

### Ruminant Nutrition
#### Ruminal Fermentation

**Chair: Sergio Calsamiglia, Universitat Autonoma de Barcelona, Spain**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td>ADSA Pioneer</td>
<td>Rumen microbes: Where are we now and how did we get here?</td>
<td>M. Allison, <em>Iowa State University, Ames.</em></td>
</tr>
<tr>
<td>11:00 AM</td>
<td>492</td>
<td>Implications of a carbon balance study: Organic acid and protein supplies change with fermentable carbohydrate:protein ratio.</td>
<td>M. B. Hall* and P. J. Weimer, <em>USDFRC, USDA-ARS, Madison, WI.</em></td>
</tr>
</tbody>
</table>

---

**Wednesday, JULY 12, 2006 ORAL SESSIONS**

11:45 AM 495  Effect of roughage level and calcium magnesium carbonate on ruminal metabolism and extent of digestion in steers. G. I. Crawford*, M. K. Luebbe1, G. E. Erickson1, T. J. Klopfenstein1, C. R. Krehbiel2, and G. A. Nunnery3, 1University of Nebraska, Lincoln, 2Oklahoma State University, Stillwater, 3MIN-AD, Inc., Amarillo, TX.

12:00 PM 496  Effect of method of adding a fibrolytic enzyme to a dairy cow diet on ruminal fermentation and TMR degradation. D. B. Dean*, A. T. Adesogan1, C. R. Staples1, S. C. Kim1, and R. Littell1, 1University of Florida, Gainesville, 2Universidad del Zulia, Maracaibo, ZU, Venezuela.

12:15 PM 497  Effects of feeding oxidized fat supplemented with antioxidant AGRADO on rumen nutrient digestibility and protein synthesis. M. Vazquez-Anon*, J. Andrews1, T. Webster2, and T. Jenkins3, 1Novus International, St. Louis, MO, 2West Virginia University, Morgantown, 3Clemson University, Clemson, SC.

Teaching/Undergraduate and Graduate Education

Chair: Linda C. Martin, Oklahoma State University

M100 G-H

Time   Abstract #

10:30 AM 498  Comparing vocational agriculture and non-vocational agriculture student success on high stakes testing. D. Ritenour* and D. Nash, Ferrum College, Ferrum, Virginia.

10:45 AM 499  Collegiate LifeKnowledge: A student-centered leadership development program. C. M. Wood*, Virginia Polytechnic Institute and State University, Blacksburg.

11:00 AM 500  Objective assessment of critically thinking ability of animal science undergraduates through use of the Watson-Glaser Critical Thinking Appraisal. I. P. Shann*, C. C. Carr, and E. P. Berg, University of Missouri, Columbia.

11:15 AM 501  Student perceptions and performance when animals and animal specimens are used in an introductory animal science class. M. S. Nemechek and W. L. Flowers*, North Carolina State University, Raleigh.

11:30 AM 502  Dynamics of how students earn their final course grade in an introductory course. W. L. Flowers*, North Carolina State University, Raleigh.

11:45 AM 503  Assessment standardization of hands-on skills in equine studies courses. K. I. Meek* and R. E. Marean, Midway College, Midway, KY.

12:00 PM 504  Costs, benefits, and publics: Training undergraduates to interpret a broad scope of implications from using genetic technologies in food animal production. C. W. Ernst* and S. C. Ernst1, 1Michigan State University, East Lansing, 2The Ohio State University, Columbus.

12:15 PM 505  Teaching societal issues facing animal agriculture: A writing intensive course for sophomores. J. N. Spain* and G. W. Jesse, University of Missouri, Columbia.

OTHER EVENTS

Feed Analysis Consortium, Inc. Meeting

M 100 D-E

12:30 pm

The Feed Analysis Consortium, Inc., (FeedAC) cordially invites everyone interested in feed analysis, ration formulation and animal production to attend the Feed Analysis Consortium meeting. Having originated as the Ruminant Feed Analysis Consortium (RFAC), the newly incorporated FeedAC, Inc. retains the original goals of RFAC, but now includes the interests, needs and expertise that exists in feed analysis and measurements of nutrient bioavailability in poultry, swine and equine. A meeting agenda is being planned and will be released prior to the meeting.
SYMPOSIUM
ADSA Production Division
Meeting the Research and Educational Needs of the Dairy Industry During the Next 25 Years
Chair: Maurice L. Eastridge, The Ohio State University
Sponsor: EAAP
Symposium meets AAVSB’S RACE requirement for 3 hr CE.

101 B-C

Time | Abstract # | Abstract
---|---|---
2:00 PM | | Introduction. M. L. Eastridge, *The Ohio State University, Columbus.*
2:05 PM | 506 | Changing how we feed dairy cattle. J. R. Newbold*, *Provimi Research and Technology Centre, Brussels, Belgium.*
3:35 PM | Break |
3:45 PM | 509 | Transferring knowledge to students and the dairy industry. R. E. James*, *Virginia Polytechnic Institute and State University, Blacksburg.*
4:15 PM | 510 | Design and analysis of pen studies in the animal sciences. N. R. St-Pierre*, *The Ohio State University, Columbus.*
4:45 PM | Discussion |

Animal Behavior and Well-Being
Chair: Drew Vermeire, Nouriche Nutrition Ltd.

M100 G-H

Time | Abstract # | Abstract
---|---|---
3:00 PM | 515 | Use of pattern recognition to develop an automated animal health classification system. R. Silasi*1,2, K. S. Schwartzkopf-Genswein1, T. A. McAllister1, B. Genswein1, T. G. Crowe2, R. Bolton2, and B. Hill1, *Agriculture & Agri-Food Canada, Lethbridge, Alberta, Canada, USDA-ARS, LBRU, West Lafayette, IN, Purdue University, West Lafayette, IN.*
3:15 PM | Break |
3:45 PM | 517 | Alternative piglet processing procedures given singly affect cortisol, behavior and growth. J. N. Marchant Forde*, D. C. Lay Jr1, R. M. Marchant Forde1, K. A. McMunn1, E. A. Pajor2, and H. W. Cheng1, *USDA-ARS, LBRU, West Lafayette, IN, Purdue University, West Lafayette, IN.*
Two alternative combinations of pig processing methods affect cortisol and behavior. D. C. Lay Jr.*, J. N. Marchant†, K. A. McMunn1, R. M. Marchant-Forde1, E. A. Pajor3, and H. W. Cheng1, 1Livestock Behavior Research Unit, Agricultural Research Service -USDA, West Lafayette, IN, 2Purdue University, West Lafayette, IN.

Validation of a color automated tracking system for activity and pen location of group housed weanling pigs. J. W. Dailey*, N. Krebs2, J. A. Carroll1, and J. J. McGlone2, 1Livestock Issues Research Unit, Agricultural Research Service-USDA, Lubbock, TX, 2Texas Tech University, Lubbock.

The effects of prenatal stress on the ano-genital distance and growth hormone immuno-positive cells in the pituitary gland of the pig. E. L. Schenck*, D. C. Lay Jr., H. G Kattesh2, J. E. Cunnick3, M. J. Daniels5, M. J. Toscano4,6, and K. A. McMunn1, 1USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN, 2University of Tennessee, Knoxville, 3Iowa State University, Ames, 4Purdue University, West Lafayette, IN, 5University of Florida, Gainesville, 6University of Bristol, Bristol, UK.

Animal Health II
Chair: Heather Dann, The Miner Institute

M100 I-J

Time Abstract # Title and Authors
2:00 PM 521 Effect of maternity pen management on risk of early calfhood diseases in dairy heifer calves during the preweaning period. P. Pithua*, S. J. Wells, and S. M. Godden, University of Minnesota, St. Paul.


2:30 PM 523 Effects of egg-derived antibody supplements on health and performance of veal calves. D. Wood*, J. Sowinski1, and S. Hayes2, 1Animix, Juneau, WI, 2Milk Products, Chilton, WI.

2:45 PM 524 A survey of bovine practitioners to determine factors associated with acute bloat syndrome in pre-weaned dairy heifers. D. E. Shoemaker*, P. J. Rajala-Schultz2, and L. Midla1, 1The Ohio State University, Wooster, 2The Ohio State University, Columbus, 3The Ohio State University, Marysville.

3:00 PM 525 Descriptive epidemiology of adult dairy cow mortalities. J. A. Severidt*, F. B. Garry, G. H. Gould, J. R. Wenz, and J. E. Lombard, Colorado State University, Fort Collins.


3:30 PM Break

3:45 PM 527 Mechanical properties of the hoof horn of dairy cows during lactation. B. Winkler1 and J. K. Margerison2, 1University of Plymouth, School of Biological Sciences, Plymouth, DEVON, UK, 2Massey University, Institute of Food, Nutrition and Human Health, Palmerston North, NZ.

4:00 PM 528 Evaluation of Excede for control of BRD when administered at initial processing or at revaccination within pasture and feedlot receiving systems. V. Bremer*, G. Erickson1, T. Klopfenstein1, D. Smith1, K. Vander Pol1, M. Greenquist1, D. Griffin1, G. Sides2, and L. Bryant2, 1University of Nebraska, Lincoln, 2Pfizer Animal Health, New York, NY.


4:30 PM 530 Physiological, hematological and immunological responses of 9-month old bulls (250kg) to transport at spatial allowances of 0.85m² and 1.27m²/animal on a 12-h journey by road. B. Earley*, D. J. Prendiville, and E. G. O’Riordan, Teagasc, Grange Beef Research Centre, Dunsany, Co. Meath, Ireland.

4:45 PM 531 Gene expression changes in neutrophils of young bulls during transportation stress. K. R. Buckham*, J. L. Burton1, B. Earley2, and M. A. Crowe1, 1University College Dublin, Dublin, Ireland, 2Teagasc, Grange Beef Research Centre, Meath, Ireland, 3Michigan State University, East Lansing.

5:00 PM 532 Effects of lairage during transport on innate immune function of swine. J. L. Williams*, S. D. Eicher1, J. A. Patterson2, and J. N. Marchant-Forde1, 1USDA-ARS, West Lafayette, IN, 2Purdue University, West Lafayette, IN.
### Beef Species

**Chair:** Elaine Grings, USDA-ARS

#### Abstracts

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>533</td>
<td>Relationship between residual feed intake and onset of puberty in Brangus heifers.</td>
<td>P. A. Lancaster*, G. E. Carstens¹, D. W. Forrest¹, R. D. Randel¹, T. H. Welsh, Jr.¹, and T. D. A. Forbes¹, ¹Texas A&amp;M University, College Station, ²Texas A&amp;M University, Overton, ³Texas A&amp;M University, Uvalde.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>535</td>
<td>Integrating the beef cattle foodchain – A case study of the first organic beef cattle enterprise in Veracruz, Mexico.</td>
<td>P. Fajersson*¹ and P. Parada², ¹Colegio de Postgraduados, Campus Veracruz, Veracruz, Mexico, ²Carnes Orgánicas La Rumorosa, Poza Rica, Veracruz, Mexico.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>536</td>
<td>Influence on weaning weights and growth rate of nursing beef calves dewormed 90 days prior to weaning.</td>
<td>J. N. Carter*, M. J. Hersom², R. O. Myer¹, M. M. Brennan¹, M. K. Maddox¹, J. T. Matthews¹, and D. Driver¹, ¹University of Florida, NFREC, Marianna, ²University of Florida, Gainesville.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>537</td>
<td>Effect of number of feeding places per pen on performance, blood metabolites and haptoglobin during the first month of adaptation to the feedlot.</td>
<td>L. A. González*, A. Ferret¹, X. Manteca¹, J. L. Ruiz-de-la-Torre¹, S. Calsamiglia¹, M. Devant¹, and A. Bach², ¹Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Unitat de Remugants-IRTA, Barcelona, Spain, ³ICREA, Spain.</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>538</td>
<td>Effect of number of feeding places per pen on performance, blood metabolites and haptoglobin of Holstein heifers on high-concentrate diets.</td>
<td>L. A. González*, A. Ferret¹, X. Manteca¹, J. L. Ruiz-de-la-Torre¹, S. Calsamiglia¹, M. Devant¹, and A. Bach², ¹Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Unitat de Remugants-IRTA, Spain, ³ICREA, Spain.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:45 PM</td>
<td>539</td>
<td>Effects of ractopamine and days on feed on performance and carcass traits of calf-fed steers.</td>
<td>C. D. Reinhardt¹, G. L. Parsons*, B. J. Johnson¹, J. P. Hutcheson², and W. T. Nichols², ¹Kansas State University, Manhattan, ²Intervet, Inc., Millsboro, DE.</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>541</td>
<td>Effect of Optaflex® and days on feed on muscle gene expression in calf-fed steers.</td>
<td>G. L. Parsons*, S. J. Winterholler¹, C. D. Reinhardt¹, J. P. Hutcheson², D. A. Yates², W. T. Nichols², and B. J. Johnson¹, ¹Kansas State University, Manhattan, ²Intervet, Inc., Millsboro, DE.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>542</td>
<td>Effect of Optaflex™ and days on feed on feedlot performance, carcass characteristics, and skeletal muscle gene expression in yearling steers.</td>
<td>S. J. Winterholler¹, G. L. Parsons¹, J. P. Hutcheson², D. A. Yates², W. T. Nichols², R. S. Swingle¹, and B. J. Johnson¹, ¹Kansas State University, Manhattan, ²Intervet, Inc., Millsboro, DE, ³Cactus Research, LTD, Amarillo, TX.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>540</td>
<td>Effects of ractopamine and days on feed on performance and carcass traits of yearling heifers.</td>
<td>C. D. Reinhardt¹, J. P. Hutcheson², W. T. Nichols², R. S. Swingle¹, and K. J. Karr¹, ¹Kansas State University, Manhattan, ²Intervet, Inc., Millsboro, DE, ³Cactus Research, LTD, Amarillo, TX.</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>543</td>
<td>Evaluation of a single Revalor-200 compared to Revalor-IH and Finaplix-H in a reimplant program for finishing heifers.</td>
<td>C. D. Reinhardt¹, J. P. Hutcheson², and W. T. Nichols², ¹Kansas State University, Manhattan, ²Intervet, Inc., Millsboro, DE.</td>
</tr>
</tbody>
</table>
### SYMPOSIUM

**Breeding and Genetics**
**Phylogenetics and Genetic Diversity**
**Chair:** Michael MacNeil, USDA-ARS
**Sponsors:** Newsham Genetics

**L100 B-C**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td></td>
<td>Introductions. M. D. MacNeil, <strong>USDA-ARS, Miles City, MT.</strong></td>
<td></td>
</tr>
<tr>
<td>2:05 PM</td>
<td>544</td>
<td>An overview of phylogenetics. M. Cronin*, <strong>University of Alaska, School of Natural Resources and Agricultural Sciences, Fairbanks.</strong></td>
<td></td>
</tr>
<tr>
<td>2:45 PM</td>
<td>545</td>
<td>Measuring diversity among breeds and populations. P. W. Hedrick*, <strong>Arizona State University.</strong></td>
<td></td>
</tr>
<tr>
<td>3:25 PM</td>
<td>546</td>
<td>Applications of phylogenetic inference to livestock science. A. R. Freeman*, <strong>Smurfit Institute, Trinity College Dublin, Dublin, Ireland.</strong></td>
<td></td>
</tr>
<tr>
<td>4:05 PM</td>
<td>547</td>
<td>Current efforts in conservation of animal genetic diversity. H. Blackburn*1 and D. Bixby2, 1 <strong>ARS-National Animal Germplasm Program, Ft. Collins, CO.</strong> 2 <strong>American Livestock Breeds Conservancy, Pittsboro, NC.</strong></td>
<td></td>
</tr>
<tr>
<td>4:45 PM</td>
<td></td>
<td>Discussion.</td>
<td></td>
</tr>
</tbody>
</table>

### Dairy Foods

**Cheese II**

**Chair:** Diane Van Hekken, USDA

**200 D-E**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>ADSA Pioneer</td>
<td>Analytical improvements in cheese technology. R. Bradley, <strong>University of Wisconsin, Madison.</strong></td>
<td></td>
</tr>
<tr>
<td>2:15 PM</td>
<td>548</td>
<td>Effect of mountain and sea level pasture on monoterpene composition in milk, curd and Ragusano cheese at 4 and 7 months of aging. S. Carpino*, T. Rapisarda1, and G. Licitra12, 1 <strong>CoRfiLaC, Regione Siciliana, Ragusa, Italy.</strong> 2 <strong>D.A.C.P.A. Catania University, Catania, Italy.</strong></td>
<td></td>
</tr>
<tr>
<td>2:30 PM</td>
<td>549</td>
<td>Characterization of calcium lactate crystal growth on Cheddar cheese. P. Rajbhandari* and P. S. Kindstedt, <strong>University of Vermont, Burlington.</strong></td>
<td></td>
</tr>
<tr>
<td>2:45 PM</td>
<td>550</td>
<td>Influence of emulsifying salts on functionality of sliced process cheese. N. Shirashoji*, T. Abe, K. Takahashi, and K. Iwatsuki, <strong>Food Research &amp; Development Laboratory, Morinaga Milk Industry Co., Kanagawa, Japan.</strong></td>
<td></td>
</tr>
<tr>
<td>3:00 PM</td>
<td>551</td>
<td>Quantitative analysis of cheese microstructure by scanning electron microscope images. M. Caccamo*, G. Impoco2, L. Tuminello1, and G. Licitra12, 1 <strong>CoRfiLaC, Regione Siciliana, Ragusa, Italy.</strong> 2 <strong>D.E.E.I. Trieste University, Trieste, Italy.</strong> 3 <strong>D.A.C.P.A., Catania University, Catania, Italy.</strong></td>
<td></td>
</tr>
<tr>
<td>3:15 PM</td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td>552</td>
<td>Predicting curd moisture content, whey fat concentration and curd yield from near infrared light backscatter. C. C. Fagan1, M. Leedy2, M. Castillo*, F. A. Payne*, C. P. O'Donnell1, and D. J. O'Callaghan1, 1 <strong>University College Dublin School of Agriculture, Dublin, Ireland.</strong> 2 <strong>University of Kentucky, Lexington.</strong> 3 <strong>Moorepark Food Research Centre, Teagasc, Fermoy, Cork, Ireland.</strong></td>
<td></td>
</tr>
<tr>
<td>3:45 PM</td>
<td>553</td>
<td>Development and application of an image analysis method to measure and characterize calcium lactate crystals on uncolored Cheddar cheese. P. Rajbhandari* and P. S. Kindstedt, <strong>University of Vermont, Burlington.</strong></td>
<td></td>
</tr>
<tr>
<td>4:00 PM</td>
<td>554</td>
<td>Computer vision analysis to monitor syneresis of cheese curd in a cheese vat. C. D. Everard*, C. P. O’Donnell1, C. C. Fagan2, D. J. O’Callaghan1, M. Castillo1, and F. A. Payne1, <strong>Teagasc, Moorepark Food Research Centre, Fermoy, Co. Cork, Ireland.</strong> 2 <strong>University College Dublin, Dublin, Ireland.</strong> 3 <strong>University of Kentucky, Lexington.</strong></td>
<td></td>
</tr>
</tbody>
</table>
SYMPOSIUM
Horse Species
What’s New in the New NRC for Horses
Chair: Laurie Lawrence, University of Kentucky
Symposium meets AAVSB’S RACE requirement for 3 hr CE.
M100 A

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td></td>
<td>Introduction. L. Lawrence, <em>University of Kentucky, Lexington.</em></td>
</tr>
<tr>
<td>2:10 PM</td>
<td></td>
<td>Unique aspects of equine nutrition. R. Geor, <em>Virginia Tech, Blacksburg.</em></td>
</tr>
<tr>
<td>3:00 PM</td>
<td></td>
<td>Feeding behavior and feeding management. D. Freeman, <em>Oklahoma State University, Stillwater.</em></td>
</tr>
<tr>
<td>3:25 PM</td>
<td></td>
<td>Break</td>
</tr>
<tr>
<td>3:40 PM</td>
<td></td>
<td>Forages and carbohydrates. A. Longland, <em>Institute of Grassland and Environmental Research, United Kingdom.</em></td>
</tr>
<tr>
<td>4:05 PM</td>
<td></td>
<td>Using models to predict nutrient requirements. M. Barry, <em>Ag Models, LLC, Tully, NY.</em></td>
</tr>
<tr>
<td>4:30 PM</td>
<td></td>
<td>Round Table Discussion.</td>
</tr>
</tbody>
</table>

SYMPOSIUM
International Animal Agriculture
Alternatives to Antibiotics if Feeding Ruminants for Optimal Production and Health
Chair: Christopher K. Reynolds, The Ohio State University
Sponsors: Pancosma USA Inc. and EAAP
Symposium meets AAVSB’S RACE requirement for 3 hr CE.
101 D-E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td></td>
<td>Introduction. C. K. Reynolds, <em>Ohio State University, Wooster.</em></td>
</tr>
<tr>
<td>2:05 PM</td>
<td>555</td>
<td>Differing objectives and key target microbes for manipulation of ruminal fermentation. R. J. Wallace*, <em>Rowett Research Institute, Buckshorn, Aberdeen, United Kingdom.</em></td>
</tr>
<tr>
<td>2:45 PM</td>
<td>556</td>
<td>The use of yeast-based probiotics to meet new challenges in ruminant production. C. Newbold* and A. Olvera-Ramirez, <em>Institute of Rural Science, University of Wales, Aberystwyth, Wales, UK.</em></td>
</tr>
<tr>
<td>4:05 PM</td>
<td>558</td>
<td>Immunisation to manage fermentative acidosis and methane production. J. B. Rowe*, <em>Australian Sheep Industry Cooperative Research Centre, Armidale, NSW, Australia.</em></td>
</tr>
</tbody>
</table>
# SYMPOSIUM
## Lactation Biology
### Local Control of Mammary Function
**Chair:** Geoffrey Dahl, University of Illinois

**Sponsor:** Monsanto Company

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 PM</td>
<td>560</td>
<td>Dynamics of lactogenic hormone induced recruitment of transacting-factors to a milk protein gene promoter. E. Kabotayanski, M. Rijnkels, M. Huetter, and J. M. Rosen, Baylor College of Medicine, Houston, TX, ARS / USDA Children’s Nutrition Research Center, Houston, TX.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>561</td>
<td>Udder changes and milk production in dairy ewes induced to lactate. B. Ramírez Andrade, A. A. K. Salama, G. Caja, V. Castillo, E. Albanell, and X. Such. Grup de Recerca en Remugants, Universitat Autònoma de Barcelona, Bellaterra, Spain, Facultad de Agronomía, Universidad Autònoma, San Luis Potosí, México.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>562</td>
<td>Comparative genomics of the Tammar Wallaby and Fur Seal; model systems to study local regulation of mammary gland function. K. Nicholas, M. Digby, C. Lefève, J. Sharp, S. Maier, A. Brennan, J. Arnould, and K. Cane, Cooperative Research Centre for Innovative Dairy Products, Melbourne, Australia, Department of Zoology, University of Melbourne, Melbourne, Australia, Victorian Bioinformatics Consortium, Monash University, Clayton, Australia, School of Biological and Chemical Sciences, Deakin University, Burwood, VIC, Australia.</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>564</td>
<td>Effects of frequent milking during early lactation on milk yield in dairy cows are locally regulated. E. H. Wall and T. B. McFadden, Lactation and Mammary Gland Biology Group, University of Vermont, Burlington.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>565</td>
<td>Expression and regulation of glucose transporters in the bovine mammary gland. F.-Q. Zhao and A. F. Keating, University of Vermont, Burlington.</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>566</td>
<td>Hormonal interactions between the mammary fat pad and mammary cells affect lactation. Y. Feuermann, S. J. Mahbesh, and A. Shamay, Agriculture Research Organisation The Volcani Center, Bet Dagan, Israel, Faculty of Agriculture, The Hebrew University of Jerusalem, Rehovot, Israel.</td>
</tr>
</tbody>
</table>

# Nonruminant Nutrition
## Enzyme Supplementation and By-Products in Swine Diets
**Chair:** Dennis Liptrap, Hubbard Feeds and Brian Richert, Purdue University

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00 PM</td>
<td>568</td>
<td>Chemical composition, phytate phosphorus release during steeping and feeding value of corn steep water for pigs. S. J. Niven, O. A. Izquierdo, C. Zhu, D. Columbus, and C. F. M. de Lange, University of Guelph, Ontario, Canada, Corn Products International, Westchester, IL.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>569</td>
<td>Addition of phytase and xylanase to wheat-based diets fed to growing pigs using growth performance and nutrient balance as response criteria. O. A. Olukosi, J. S. Sands, and O. Adeola, Purdue University, West Lafayette, Danisco Animal Nutrition, Marlborough, UK.</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>570</td>
<td>Effects of xylanase and wheat middlings in diets for finishing pigs. C. Feoli, J. D. Hancock, C. R. Monge, C. L. Jones, and C. W. Starkey, Kansas State University, Manhattan.</td>
</tr>
</tbody>
</table>
Toxicity of Fusarium mycotoxins and detoxification by mycotoxin degrading enzymes. G. Schatzmayr*1, U. Hofstetter1, and C. Yeong-Hsiang2, 1BIOMIN GmbH, Herzogenburg, Austria, 2National I-Lan University, I-Lan, Taiwan.

Energy and phosphorus digestibility in high-protein distillers dried grain with solubles fed to growing pigs. M. R. Widmer*1, M. L. Gibson1, L. M. McGinnis2, C. Pedersen1, and H. H. Stein1, 1South Dakota State University, Brookings, 2Dakota Gold Marketing, Sioux Falls, SD.

Effects of replacing corn with triticale in diets for nursery and finishing pigs. C. R. Monge*, J. D. Hancock, T. L. Gugle, and C. Feoli, Kansas State University, Manhattan.

Impact of a varying number of random out-of-feed events on grow-finish pig performance. M. Brumm*1, S. Colgan1, and K. Bruns2, 1University of Nebraska, Concord, 2South Dakota State University, Brookings.

Effects of flaxseed and carbohydrase enzyme supplementation on growth performance, plasma urea nitrogen and nutrient digestibility in piglets. E. Kiari*e, B. A. Slominiski, and C. M. Nyachoti, University of Manitoba, Winnipeg, Canada.

Flaxseed and carbohydrase enzyme supplementation affects gut microbial populations and activities in nursery pigs. E. Kiari*e, C. M. Nyachoti, B. A. Slominiski, and G. Blank, University of Manitoba, Winnipeg, Canada.

Physiology and Endocrinology
Reproductive Physiology
Chair: Ron Butler, Cornell University
M100 B-C

Effect of decreasing the interval from GnRH to PGF2α and lengthening proestrus on reproductive performance in GnRH-CIDR-PGF2α synchronization programs. L. A. Helser*e, G. A. Bridges1, D. E. Grum1, T. T. Marston4, G. R. Hansen5, J. D. Arthington8, 1The Ohio State University, Columbus, 2Southern Utah University, Cedar City.


Influence of a CIDR insert after a fixed-time AI on pregnancy rates and return to estrus of nonpregnant cows. K. N. Thielen1, J. E. Larson*e, B. J. Lovaa1, D. J. Kesler1, J. S. Stevenson1, T. T. Marston4, and G. C. Lamb3, 1University of Minnesota, St. Paul, 2University of Minnesota, Grand Rapids, 3University of Illinois, Urbana, 4Kansas State University, Manhattan.

Effects of estrous synchronization with a CIDR prior to the breeding season in bull-breeding herds on pregnancy rates. G. C. Lamb1, C. R. Dahlen6, K. A. Vonnahme1, G. R. Hansen4, D. M. deAvila2, and J. S. Stevenson4, 1North Dakota State University, Fargo, 2University of Florida, North Dakota, 3North Dakota State University, Fargo, 4University of Florida, Mariana, 5Purdue University, 6University of Minnesota, St. Paul.

Prevalence and risk factors for postpartum anestrus in dairy cows. R. B. Walsh*1, J. S. Walton2, K. E. Leslie1, and S. J. LeBlanc1, 1University of Guelph, Ontario, Canada, 2University of Guelph, Ontario, Canada.


Digital infrared thermal imaging of the eye as correlated to rectal and vaginal temperature measurements in the ewe. S. T. Willard1, M. C. Vinson1, and R. W. Godfrey4, 1Mississippi State University, Mississippi State, 2University of the Virgin Islands, St. Croix.

The effects of immunization against LHRH using recombinant LHRH fusion protein OL on testicular development, ultrasonographic and histological appearance of the testis in buck kids. H. Ülker*1, M. Küçük1, A. Yilmaz2, M. Yörük1, L. Arslan1, D. M. deAvila2, and J. J. Reeves2, 1Yüzüncü Yıl University, Van, Turkey, 2Washington State University, Pullman.
4:15 PM 585 Using novel chimeric gonadotropins with single (FSH) or dual (LH and FSH) activity to induce follicle development in sheep. E. P. Lemke1, B. M. Adams1, I. Boime2, and T. E. Adams3, 1University of California, Davis, 2Washington University, St. Louis, MO.


5:00 PM 588 Cis-9, trans-11 and trans-10, cis-12 conjugated linoleic acids reduce prostaglandin F2α production by bovine endometrial cells. N. R. Kendall1, A. L. Lock2, D. E. Bauman2, B. K. Campbell3, and G. E. Mann*1, 1University of Nottingham, Sutton Bonington, Loughborough, UK, 2Cornell University, Ithaca, NY, 3University of Nottingham, Queens Medical Centre, UK.

### Ruminant Nutrition

**Calves & Heifers - Dairy**

**Chair: Jim Wohlt, Rutgers University**

**101 F-G**

#### Time Abstract #

2:00 PM 589 Calf nutrition management over the last 30 years. M. Fowler, Land O Lakes, Fort Dodge, IA.

2:15 PM 589 Effects of dietary fish oil on immunocompetence of neonatal Jersey calves. M. A. Ballou* and E. J. DePeters, University of California, Davis.

2:30 PM 590 Modifying the acute phase response of neonatal Jersey calves by supplementing milk replacer with fish oil. M. A. Ballou* and E. J. DePeters, University of California, Davis.

2:45 PM 591 Sodium zeolite A supplementation to dairy calves. K. Turner*, B. Nielsen2, C. O’Connor2, D. Rosenstein2, H. Schott2, C. Womack2, F. Nielsen3, and M. Orth2, 1The University of Georgia, Athens, 2Michigan State University, East Lansing, 3Grand Forks Human Nutrition Research Center, Grand Forks, ND.


3:15 PM 593 Effect of altering theoretical rumen degraded and metabolizable protein in a calf starter. T. Hill*, J. Aldrich, H. Bateman, and R. Schlotterbeck, Akey, Lewisburg, OH.

3:30 PM 594 Effect of altering theoretical rumen undegraded soybean protein in a calf starter. T. Hill*, J. Aldrich, H. Bateman, and R. Schlotterbeck, Akey, Lewisburg, OH.

3:45 PM 595 Enhanced-growth feeding program: Starter digestibility at weaning. M. Terré*, A. Bach2,1, and M. Devant1, 1Institut de Recerca i Tecnologia Agroalimentàries-Unitat de Remugants, Barcelona, Spain, 2Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain.

4:00 PM 596 Effects of an intensified compared to a moderate feeding program during the preweaning phase on long-term growth, age at calving, and first lactation milk production. L. Davis Rincker*, M. VandeHaar, C. Wolf, J. Liesman, L. Chapin, and M. Weber Nielsen, Michigan State University, East Lansing.

4:15 PM 597 The effects of restricted feeding high concentrate or high forage rations on rumen fermentation in dairy heifers. G. I. Zanton* and A. J. Heinrichs, The Pennsylvania State University, University Park.


Ruminant Nutrition  
Minerals & Vitamins  
Chair: Katharine Knowlton, Virginia Tech  
101 H-I

Time   Abstract #   Title and authors
2:00 PM  600   Effect of dietary vitamin A restriction on marbling in growing cattle. M. Gorocica-Buenfil*, F. Fluharty, C. Reynolds, and S. Loerch, The Ohio State University, Wooster.
2:30 PM  602   Plasma diamine oxidase as a biomarker of copper deficiency in the bovine. L. R. Legleiter* and J. W. Spears, North Carolina State University, Raleigh.
3:00 PM  604   Effect of increasing dietary concentrations of dried distillers grains plus solubles on P balance in finishing steers. C. Benson, C. Wright*, J. McCarthick, and R. Pritchard, South Dakota State University, Brookings.
3:45 PM  607   Calcium and phosphorus supplementation for transition cows. V. Moreira* and C. Coxe, Louisiana State University, Baton Rouge.
4:45 PM  611   The relationship between dry matter intake and acid-base status of lactating dairy cows as manipulated by dietary cation-anion difference. W. Hu*, L. Kung, Jr, and M. R. Murphy, University of Delaware, Newark, University of Illinois, Urbana.
5:00 PM  612   Influence of altering dietary cation anion difference on milk yield and its composition by early lactating Nili Ravi buffaloes in summer. M. A. Shahzad*, M. Sarwar, M. Nisa, and A. Khan, University of Agriculture, Faisalabad, Pakistan.

Closing/International Reception  
Ballroom B  
4:30 PM
Thursday, July 13

SYMPOSIA AND ORAL SESSIONS

SYMPOSIUM
Animal Behavior and Well-Being
Current Issues of Animal Well-Being: Public Perception Versus Science
Chair: Janeen Salak-Johnson, University of Illinois

Sponsors: American Veal Association’s Veal Quality Assurance Program, Animal Agriculture Alliance, Center for Consumer Freedom, National Pork Board

M100 B-C

Time Abstract #
8:30 AM Animal well-being in the public mind - can we change perception? G. Coleman, Monash University, Australia.
9:45 AM Well-being issues of poultry management. J. A. Mench, University of California, Davis.
10:15 AM Well-being issues of swine management. D. Butler¹ and S. Curtis ², ¹Murphy-Brown, LLC, ²University of Illinois, Champaign.

SYMPOSIUM
Beef Species
Enterprise Integration for Sustainable Beef Production
Chair: Elaine Grings, USDA-ARS

L100 D-E

Time Abstract #
8:30 AM 614 Applications of grazingland simulation models. J. D. Hanson*, USDA/ARS, Mandan, ND.
9:00 AM Integrated beef and crop production in a biofuel era: A case for interdisciplinary research approaches. J. R. Russell, J. D. Lawrence, and A. Trenkle, Iowa State University, Ames.
9:30 AM 615 Whole farm integration: Silvopastoral systems. J. P. S. Neel* and D. P. Belesky, USDA-ARS Appalachian Farming Systems Research Center, Beaver, WV.
10:00 AM Break
10:15 AM 616 Sustainable beef production systems: An international perspective. G. R. Hagevoort*, New Mexico State University Agricultural Science Center, Clovis.
11:15 AM Discussion.
Breeding and Genetics
Beef, Sheep & Swine Breeding
Chair: Ron Lewis, VPI & SU
M100 G-H

Time  Abstract #  Abstract
8:30 AM  617  Connectedness in Targhee and Suffolk flocks participating in the U.S. National Sheep Improvement Program. L. A. Kuehn*, R. M. Lewis, and D. R. Notter, Virginia Polytechnic Institute and State University, Blacksburg.


9:45 AM  Break

10:00 AM  622  Some hybrid beef performances (B. taurus x B. indicus) in tropical Malaysia. A. Aman*, O. Ahmad, and S. Othman, International Islamic University Malaysia, Jalan Gombak, Kuala Lumpur, Malaysia, MARDI, Kuala Lumpur, Malaysia.

10:15 AM  623  Use of a mathematical computer model to predict feed intake: Genetic parameters between observed and predicted values, and relationships with other traits. D. P. Kirschten*, E. J. Pollak, L. O. Tedeschi, D. G. Fox, B. Bourg, and G. E. Carstens, Cornell University, Ithaca, NY, Texas A&M University, College Station.

10:30 AM  624  Examination of feed efficiency traits with post-weaning growth and carcass traits in central test bulls. G. S. Hecht and L. A. Kriese-Anderson, Auburn University, Auburn, AL.

10:45 AM  625  Significance of cytoplasmic origin on body composition in Limousin cattle. M. M. Rolf, D. W. Moser, and L. R. Hyde, Kansas State University, Manhattan, North American Limousin Foundation, Englewood, CO.

11:00 AM  626  Association of microsatellite markers on bovine chromosomes 5 and 6 with carcass traits. A. M. Sanborn, E. Casas, and A. J. M. Rosa, South Dakota State University, Brookings, U.S. Meat Animal Research Center, Clay Center, NE.


SYMPOSIUM
FASS Environment, Waste Management and Ecosystems
Transforming Forages to Improve Nitrogen Use by Dairy Cows and Decrease Nitrogen Emissions
Chair: Neal Martin, USDA-ARS
Sponsor: US Dairy Forage Research Center
L100 A

Time  Abstract #  Abstract
8:30 AM  628  Source, amount and fate of nitrogen on US dairy farms. R. A. Kohn* and M. Wattiaux, University of Maryland, College Park, University of Wisconsin, Madison.

8:40 AM  Opening remarks. N. Martin, USDA-ARS, Madison, WI.

9:30 AM 630 Preservation of protein during harvest and storage. L. Kung, Jr.* and R. E. Muck, University of Delaware, Newark, USDA-ARS, Madison, WI.

10:00 AM Break


11:45 AM Discussion.

**Physiology and Endocrinology**

**Endocrinology**

**Chair: Rick Barb, USDA, ARS**

**M100 D-E**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM</td>
<td>634</td>
<td>An erythropoietin receptor (EPOR) gene polymorphism (SNP) alters EPOR mRNA in fetal liver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of swine during early gestation. J. L. Vallet* and B. A. Freking, USDA, ARS, U.S. Meat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Animal Research Center, Clay Center, NE.</td>
</tr>
<tr>
<td>8:45 AM</td>
<td>635</td>
<td>Serum constituents and thyroid hormones in sheep fed halophyte forages. A. Riasi*, M. D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M. J. Zamiri, and M. D. Sterr, University of Birjand, Birjand, Khorasan, Iran, Ferdowsi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Mashad, Mashad, Khorasan, Iran, University of Shyraz, Shyraz, Fars, Iran,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of Minnesota, St. Paul.</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>636</td>
<td>Food deprivation-induced decrease in blood insulin-like growth factor-I is associated with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>decreased liver growth hormone receptor mRNA and protein in steers. M. Wu*, R. Akers, R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Torres-Diaz, S. Frank, J. Hall, W. Beal, and J. Jiang, Virginia Tech, Blacksburg, University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of Alabama, Birmingham.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. L. Perry, and G. A. Perry, South Dakota State University, Brookings.</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>638</td>
<td>Species-specific differences in constitutive androstane receptor (CAR) coding region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baumann, and J. W. Blum, Pennsylvania State University, University Park, University of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bern, Bern, Switzerland.</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>639</td>
<td>Cortisol enhances N-acetylglutamate synthase activity and arginine synthesis in enterocytes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of suckling piglets. G. Y. Wu, Y. L. Yin, and N. E. Flynn, The Chinese Academy of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sciences, Changsha, Hunan, P.R. China, Texas A&amp;M University, College Station, Angelo State</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University, San Angelo, TX.</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>640</td>
<td>Adrenal involvement in the biostimulatory effect of bulls. S. A. Tauck*, J. R. Olsen,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and J. G. Berardinelli, Montana State University, Bozeman.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>641</td>
<td>Localization of Period1 mRNA in the ruminant oocyte and investigations of its role in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ovarian function. R. A. Cushman*, M. F. Allan, S. A. Jones, G. P. Rupp, and S. E.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Echternkamp, U.S. Meat Animal Research Center, Clay Center, NE, University of Nebraska,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clay Center.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>642</td>
<td>Trace element concentration of bovine ovarian and hepatic tissue. W. S. Swecker, Jr, D. J.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tomlinson, Virginia Tech, Blacksburg, Zinpro Corp, Eden Prairie, MN.</td>
</tr>
</tbody>
</table>
Ruminant Nutrition
Grazing Nutrition
Chair: Stacey Gunter, University of Arkansas
L100 J

Time  Abstract #  Title and Authors
8:30 AM  ADSA Pioneer  Feeding dairy cattle: Oh how it has changed and yet stayed the same. J. Clark, *University of Illinois, Urbana.
8:45 AM  643  Effects of ruminal fill on bite and grazing dynamics. P. Gregorini\textsuperscript{1,2}, S. Gunter\textsuperscript{1}, C. Masino\textsuperscript{2}, and P. Beck\textsuperscript{1}, \textsuperscript{1}University of Arkansas, Hope, \textsuperscript{2}Universidad Nacional de La Plata, La Plata, Buenos Aires, Argentina.
9:00 AM  644  Strain of Holstein-Friesian and concentrate feeding level influence endogenous plasma ghrelin concentration. A. J. Sheahan\textsuperscript{1}, D. P. Berry\textsuperscript{2}, and J. R. Roche\textsuperscript{*1}, \textsuperscript{1}Dexcel, Hamilton, New Zealand, \textsuperscript{2}Moorepark Dairy Production Research Center, Fermoy, Co. Cork, Ireland.
9:15 AM  645  Nutrient status of young postpartum range cows fed range supplements containing increased glucogenic precursors. R. L. Endecott\textsuperscript{*}, C. M. Rubio, S. H. Cox, M. R. Rubio, R. B. Luera\textsubscript{s}, I. Cowboy, R. D. Speckman\textsuperscript{1}, C. A. L"{o}est, D. E. Hawkins, and M. K. Petersen, \textsuperscript{1}New Mexico State University, Las Cruces.
9:30 AM  646  Effect of daily herbage allowance and concentrate level on the milk production performance of spring calving dairy cows in early lactation. E. Kennedy\textsuperscript{*1,2}, M. O’Donovan\textsuperscript{1}, M. Rath\textsuperscript{2}, F. O’Mara\textsuperscript{2}, and L. Delaby\textsuperscript{1}, \textsuperscript{1}Dairy Production Research Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, \textsuperscript{2}School of Agriculture, Food Science and Veterinary Medicine, NUI Dublin, Belfield, Dublin, Ireland, \textsuperscript{1}INRA, UMR Production du Lait, St. Gilles, France.
9:45 AM  647  Effects of offering different types of supplementation to spring calving dairy cows at grass in autumn. M. O’Donovan\textsuperscript{*1}, E. Kennedy\textsuperscript{1}, T. Guine\textsuperscript{2}, and J. J. Murphy\textsuperscript{1}, \textsuperscript{1}Teagasc, Dairy Production Research Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, \textsuperscript{2}Teagasc, Moorepark Food Research Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland.
10:00 AM  648  The effect of supplementing grazing cows with barley, corn or a mixture of both on milk yield, blood metabolites and rumen pH fluctuation. F. Dohme\textsuperscript{*}, A. Scharenberg, and A. M"{u}nger, Agroscope Liebefeld-Posieux, Swiss Federal Research Station for Animal Production and Dairy Products (ALP), Posieux, Switzerland.

Ruminant Nutrition
Nitrogen Metabolism - Beef
Chair: Clint Loest, New Mexico State University
L100 F-G

Time  Abstract #  Title and Authors
8:30 AM  649  Balancing diets to meet the animal’s requirement for absorbable amino acids. J. W. Golden\textsuperscript{*1}, M. S. Kerley\textsuperscript{1}, and N. A. Pyatt\textsuperscript{2}, \textsuperscript{1}University of Missouri, Columbia, \textsuperscript{2}ADM Animal Nutrition Research, Decatur, IN.
8:45 AM  650  Effects of energy supplementation on leucine utilization by growing steers. G. F. Schroeder\textsuperscript{*}, E. C. Titgemeyer, and E. S. Moore, \textsuperscript{1}Kansas State University, Manhattan.
9:00 AM  651  Influence of dietary protein concentration and source on ruminal metabolism, nutrient digestibility, and urinary purine derivative excretion in steers. G. I. Crawford\textsuperscript{*}, M. K. Luebbe, T. J. Klopfenstein, and G. E. Erickson, \textsuperscript{1}University of Nebraska, Lincoln.
9:15 AM  652  The effect of degradable intake protein on urea kinetics in steers consuming low-quality forage. T. A. Wickersham\textsuperscript{*}, E. C. Titgemeyer, R. C. Cochran, and E. E. Wickersham, \textsuperscript{1}Kansas State University, Manhattan.
9:30 AM  653  Determining the proportion of urea recycled to the gut that is incorporated into ruminal microbial protein. T. A. Wickersham\textsuperscript{*}, E. C. Titgemeyer, and R. C. Cochran, \textsuperscript{1}Kansas State University, Manhattan.
10:00 AM  655  Effects of methionine supplementation on selected serum constituents in steers following an endotoxin challenge. J. W. Waggoner\textsuperscript{*}, C. A. Loest, T. M. Thelen, C. P. Mathis, D. M. Hallford, and M. K. Petersen, \textsuperscript{1}New Mexico State University, Las Cruces.
**ADSA Centennial Posters**

Chair: Jimmy Clark, University of Illinois

As part of ADSA’s Centennial Celebration, Departments of Dairy Science, Animal Science and Food Science, government institutions in the US and Canada, and Dairy Clubs as well as ADSA Sustaining Members will have posters on display during the meeting. These posters will showcase the history, accomplishments and contributions from their institution/organization from the past 100 years.

The Centennial Posters will be on display in the Exhibit Hall from Monday, July 10 through Wednesday, July 12. A reception will be held on Monday, July 10 from 4:00 to 5:00 p.m. near the Centennial Posters in the Exhibit Hall.

Posters are listed in alphabetical order by institution/organization.

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>California Polytechnic State University, San Luis Obispo “Tradition Never Graduates”. N. Borges*, E. Jaster, and W. Gillis, California Polytechnic State University, San Luis Obispo.</td>
</tr>
<tr>
<td>C5</td>
<td>Over 100 Years of Milk and Dairy Foods Research by the United States Department of Agriculture–Agricultural Research Service. D. L. Van Heekken*, Dairy Processing and Products Research Unit, USDA, ARS, ERRC, Wyndmoor, PA.</td>
</tr>
<tr>
<td>C6</td>
<td>The products, the people and the services of Diamond V Mills make the dairy industry more productive. I. Yoon*, M. Scott, and B. Kimbro, Diamond V Mills, Cedar Rapids, IA.</td>
</tr>
<tr>
<td>C7</td>
<td>100 Years of Dairy Science at Kansas State University. K. A. Schmidt*, M. J. Brouk, T. G. Rozell, J. E. Shirley, J. F. Smith, and J. S. Stevenson, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>C8</td>
<td>The Dairy Science Club at Louisiana State University Celebrates the 100th Anniversary of ADSA. C. C. Williams, B. Lyons, M. Konzelman*, A. Greenbaum, K. McClelland, and P. McGrew, Louisiana State University, Baton Rouge.</td>
</tr>
<tr>
<td>C9</td>
<td>100 Years of service to the dairy industry. B. Jenny*, K. Aryana, G. Hay, and C. Williams, Louisiana State University Agricultural Center, Baton Rouge.</td>
</tr>
<tr>
<td>C10</td>
<td>100+ Years of Dairy Manufacturing at MAC / MSC / MSU. J. Partridge*, Z. Ustunol, and E. Ryser, Michigan State University, East Lansing.</td>
</tr>
<tr>
<td>C12</td>
<td>North Carolina State University Dairy Science Club History. A. Nelkie*, North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>C13</td>
<td>Contributions to the Dairy Industry by the Food Science Department at North Carolina State University. H. E. Swaisgood and T. R. Klaenhammer*, North Carolina State University, Raleigh.</td>
</tr>
<tr>
<td>C14</td>
<td>100 Years of Dairy Science at The Ohio State University. D. L. Palmquist*, J. L. Firkins, M. L. Eastridge, and H. R. Conrad, The Ohio State University Department of Animal Sciences, Columbus.</td>
</tr>
<tr>
<td>C15</td>
<td>100 Years of Dairy Science at Oklahoma State University. S. E. Gilliland*, Oklahoma State University, Stillwater.</td>
</tr>
<tr>
<td>C16</td>
<td>100 years of dairy science at Oregon State University. M. J. Gamroth* and L. Goddik, Oregon State University, Corvallis.</td>
</tr>
<tr>
<td>C18</td>
<td>Penn State: The Second Land-Grant University. R. Pruyn, L. Muller, R. Kensinger*, and M. O’Connor, The Pennsylvania State University, University Park.</td>
</tr>
<tr>
<td>C19</td>
<td>A Century of Dairy Science at Purdue University. J. Chambers*, Purdue University, West Lafayette, IN.</td>
</tr>
<tr>
<td>C20</td>
<td>Highlights of Dairy Production at Purdue University. M. M. Schutz*, B. R. Baumgardt, and J. L. Albright, Purdue University, West Lafayette, IN.</td>
</tr>
</tbody>
</table>
C22 More than 100 Years of Dairy Science at South Dakota State University. Dairy Science Faculty*, South Dakota State University, Brookings.


C24 100 Years of Dairy Science at Texas A&M University. M. A. Tomaszewski*, E. Jordan, and H. O. Kunkel, Texas A&M University, College Station.

C25 100 years of Dairy Science at the University of Alberta. M. Oba, C. Strawson*, P. Jelen, and J. Kennelly, University of Alberta, Edmonton, Alberta, Canada.


C27 100+ Years of Dairy Foods Research, Teaching and Extension at the University of Guelph. H. D. Goff* and D. W. Stanley, University of Guelph, Guelph, ON, Canada.

C28 100 Years of Dairy Science at the University of Illinois. J. Clark* and J. Baltz, University of Illinois, Urbana-Champaign.

C29 100 Years of ADSA-SAD at the University of Illinois Illini Dairy Club. G. McCoy*, University of Illinois, Urbana-Champaign.

C30 Gopher Dairy Club. B. Hemmesch*, University of Minnesota, St. Paul.

C31 100 Years of Dairy Science at the University of Minnesota. J. Linn*, University of Minnesota, St. Paul.

C32 Advances in Dairy Manufacturing and Food Science at the University of Missouri-Columbia, 1902-2006. R. T. Marshall*, University of Missouri, Columbia.

C33 100 Years of Dairy Science at the University of Missouri-Columbia. F. Martz, J. R. Campbell, R. Ricketts, and J. N. Spain*, University of Missouri, Columbia.


C35 100 Years of Dairy Science at the University of Tennessee (UT). G. W. Rogers*, M. J. Montgomery, and J. B. Cooper, University of Tennessee, Knoxville.

C36 Celebrating a Century—1906 to 2006—of the University of Vermont Department of Animal Science. J. M. Smith*, University of Vermont, Burlington.


C38 Dairying Becomes a Highlight of the Utah Rocky Mountains: Glimpses into a century of Contributions in Research, Service and Teaching at Utah State University. G. H. Richardson, R. Lamb, T. Dhiman, and D. J. McMahon*, Utah State University, Logan.


C40 Dairy Club of Virginia Tech: Capturing the Past, Defining the Future. J. L. Leech* and D. R. Winston, Virginia Polytechnic Institute and State University, Blacksburg.


C42 West Central®: Practicing dairy-nutrition innovation for 50+ years! P. W. Jardon*, West Central, Ralston, IA.