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2001–2002 Officers of ASAS and ASAS Midwestern Section
2001–2002 Officers of ADSA and ADSA Midwest Branch
New in 2002
Placement Center
Scientific Session Program
2001–2002 Committees
Past Recipients of Awards for Young Animal Science Leaders
Past Winners of Invitational Competitive Research Paper Awards
Past Midwestern Section Presidents
Future Meeting Dates
Room Assignments

NOTICE:
Registration and housing forms can be found on the Midwest Meeting Website. You can register on line at: http://www.asas.org/midwest/2002/index.html. You can print forms off the web site listed above. Information for faxing or mailing can be found on the appropriate form or you can call 217-356-9050 for a printed copy.
IMPORTANT PHONE NUMBERS

Meeting Registration Desk: 515/242-2528  
Press Room: 515/242-2517  
Savery Hotel: 515/244-2151  
Kirkwood Hotel: 515/244-9191  
Hotel Fort Des Moines: 515/243-1161  
Embassy Suites: 515/244-1700  
Marriott: 515/245-5500

REGISTRATION

Convention Center, Lobby  
Monday, March 18, 10:30 a.m. – 8:00 p.m.  
Tuesday, March 19, 7:00 a.m. – 4:00 p.m.  
Wednesday, March 20, 9:00 a.m. – 12:00 noon

<table>
<thead>
<tr>
<th>Before March 1</th>
<th>After March 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSA/ASAS Members</td>
<td>$100</td>
</tr>
<tr>
<td>Undergraduate Students</td>
<td>$10</td>
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<tr>
<td>Graduate Student Members</td>
<td>$20</td>
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<tr>
<td>Post Doctoral Fellows</td>
<td>$20</td>
</tr>
<tr>
<td>ASAS-ADSA Fellows</td>
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<tr>
<td>Nonmembers</td>
<td>***$210</td>
</tr>
<tr>
<td>Graduate Student Nonmembers</td>
<td>***$40</td>
</tr>
</tbody>
</table>

***These prices include membership into your choice of ASAS or ADSA.

Cancellation Policy: To be eligible for a 90% refund of meeting registration fees, requests must be received in writing before March 1, 2002. No refunds will be issued on ticketed events.
NEW in 2002!

THESE FOOD FUNCTIONS HAVE BEEN MOVED TO
ROOM 206

Monday Night Reception
6:00 p.m. – 8:00 p.m.

Wednesday Morning Awards Banquet
6:45 a.m. – 9:00 a.m.

NEW ROOM!!
Academic Quadrathalon Quiz Bowl
Monday, March 18, 8:00 pm
Room: 204FG

NEW SESSION!!
Congressional Insights
Monday, March 18, 2:00 p.m.-5:00 p.m.
Room: 140

The Congressional Insight (CI) program is a novel, state-of-the art, interactive computer model designed to simulate a two-year term of office in congress. This computer simulation and educational tool introduces participants to the legislative and political process on Capitol Hill. It illustrates why politicians must (or should) make some of the decisions they do.

The program will introduce you to the pressures faced by a member of congress, show you the demands placed on their time, help you understand that legislators are public officials whose actions are open to public scrutiny, and to provide you with a better understanding of the role of elected officials and their staffs.

Participants are actively involved in this program. It focuses on policy and political issues and effectively demonstrates some of the tough decisions faced by elected officials.
Use the

Placement Center

at the
Midwestern Sectional
ASAS/ADSA Annual Meeting
to find your
New Employer or Employee!

If you are interested in advertising open positions in your company or department, or if you’re looking for a position in the animal industry or academia, we encourage you to bring position description and résumés to the Placement Center at the 2002 Midwestern Sectional ASAS/ADSA Annual Meeting.

The Placement Center will be located in the Exhibit Hall, Room 206 at the Convention Center. Sign-up sheets for making “connections” and instructions for use of the Placement Center will be posted.

HOW TO PARTICIPATE

Students, graduates and experienced professionals are encouraged to post résumés at the Placement Center. Professionals from hundreds companies, universities, and governmental agencies are represented each year at the Annual Meeting.

Employers from industry academia and government are encouraged to post position announcements.

WHAT TO BRING

Employers are asked to bring 25 to 50 copies of all position announcements.

Prospective employees are requested to bring 25 to 50 copies of their (two-page) résumés.

Job descriptions and résumés can be posted at the Placement Center beginning at 12:00 p.m. on Monday, March 18, 2002.

The Placement Center —
New opportunities are waiting!
SCHEDULE OF EVENTS

Monday, March 18

8:00 a.m. ADSA/ASAS MW Board of Directors, Savery Hotel, Iowa Room

1:30 p.m. Nonruminant Nutrition I, Sow and Weanling Pig Nutrition See Page 15

2:00 p.m. Congressional Insight Workshop See Page 16

2:30 p.m. Undergraduate Student Competitive Research Papers See Page 17

6:00 p.m. Reception Courtesy of Kemin Americas, Inc., Exhibit Hall, Room 206 Convention Center

8:00 p.m. Academic Quadrathlon, Quiz Bowl Competition, Room 204FG Convention Center

Tuesday, March 19

6:45 a.m. Extension Breakfast, Daryl Buchholz, Kansas State University, Speaker, Savery Hotel, Terrace Room

6:45 a.m. Program Chairs Breakfast, Savery Hotel, Room 210

8:00 a.m. Animal Behavior, Housing, and Well-Being II Poster Session (Authors present, 1:00 p.m. – 3:00 p.m.) See Page 38

8:00 a.m. Breeding and Genetics I, Molecular Genetics and QTL Analysis See Page 19

8:00 a.m. Breeding and Genetics III Poster Session (Authors present, 2:00 p.m. – 4:00 p.m.) See Page 40

8:00 a.m. Extension I Poster Session (Authors present 10:00 a.m. – Noon) See Page 20

8:00 a.m. Extension II Poster Session (Authors present, 10:00 a.m. – Noon) See Page 21

8:00 a.m. Extension III, Feeding Management of Young Calves See Page 22
8:00 a.m. Graduate Student Competitive Research Papers – Ph. D. Division See Page 23

8:00 a.m. Growth, Development, Muscle Biology, and Meat Science I See Page 24

8:00 a.m. Growth, Development, Muscle Biology, and Meat Science II Poster Session (Authors present, 10:00 a.m. – Noon) See Page 25

8:00 a.m. Nonruminant Nutrition II, Weanling Pig Nutrition See Page 26

8:00 a.m. Nonruminant Nutrition III, Growing-Finishing Nutrition See Page 27

8:00 a.m. Nonruminant Nutrition IV Poster Session (Authors present, 1:00 p.m. – 3:00 p.m.) See Page 41

8:00 a.m. Physiology III Poster Session (Authors present 8:00 a.m. – 10:00 a.m.) See Page 31

8:00 a.m. Ruminant Nutrition and Forages I Poster Session (Authors present, odd abstract numbers 8:00 a.m. – 10:00 a.m.; even abstract numbers 10:00 a.m. – Noon) See Page 32

8:00 a.m. Ruminant Nutrition and Forages II, Cow-Calf and Stocker Nutrition See Page 35

8:00 a.m. Teaching I Poster Session (Authors present, 8:00 a.m. - 10:00 a.m.) See Page 36

8:30 a.m. Physiology I See Page 30

9:15 a.m. Graduate Student Competitive Research Papers – M.S. Division See Page 23

10:00 a.m. Symposium: Sperm Storage, Sorting and Sexual Dimorphism Physiology II See Page 31

10:00 a.m. Teaching II and Career and Placement Committee, Internships and Career Development See Page 37

10:15 a.m. Animal Behavior, Housing, and Well-Being I, Swine Management See Page 18

10:15 a.m. Symposium: Nutrient Excretion and Odor Control - Odor and Nutrient Management See Page 29
11:30 a.m. Lunch Major Contributor – Fort Dodge Animal Health, 11:30 a.m.-1:30 p.m., Exhibit Hall, Room 206 Convention Center

A box lunch will be served in the Exhibit Hall for those individuals who ordered and paid for it on the registration form. (Ticket will be in registration packet). There will be a limited number of box lunches available for purchase in the Exhibit Hall for those individuals who did not order a lunch in advance. The box lunches available for sale will be on first-come basis.

1:00 p.m. Breeding and Genetics II Genetic Parameter Estimation See Page 38

1:00 p.m. Symposium: Current Topics in Satellite Cells Research Growth, Development, Muscle Biology, and Meat Science III See Page 41

1:00 p.m. Nonruminant Nutrition V Phytase and Mineral Nutrition See Page 43

1:00 p.m. Symposium: Joint Physiology & Extension, Managing Reproduction in Beef Cattle Physiology IV See Page 46

1:00 p.m. Symposium: Current and Future Hybrid Selection for Optimal Feeding Value of Corn Silage Ruminant Nutrition and Forages III See Page 47

1:45 p.m. Nonruminant Nutrition VI Ractopamine See Page 45

3:00 p.m. Ruminant Nutrition and Forages IV Dairy Cattle See Page 48

3:00 p.m. Ruminant Nutrition and Forages V Feedlot Nutrition See Page 49

5:00 p.m. Reception Courtesy of IMC, Exhibit Hall, Room 206 Convention Center

**Wednesday, March 20**

6:45 a.m. ASAS/ADSA Breakfast, Awards Program and Business Meeting, Courtesy of Cargill Animal Nutrition, Milk Products, Inc./SAV-A-CAF Products, and VetLife, Exhibit Hall, Room 206, Convention Center

9:00 a.m. Breeding and Genetics IV Applied Animal Breeding See Page 50

9:00 a.m. Extension IV Non-Ruminant Nutrition and Management See Page 51
9:00 a.m.  Extension V, Do We Need to Feed Dairy Cows Ad Libitum? See page 51

9:00 a.m.  Growth, Development, Muscle Biology, and Meat Science IV Growth and Development See Page 52

9:00 a.m.  Symposium: Breeding Herd Nutrition and Management Nonruminant Nutrition VII See Page 53

9:00 a.m.  Ruminant Nutrition and Forages VI Digestion/Metabolism See Page 54
A SPECIAL THANK YOU

from the Midwestern Section of the American Society of Animal Science
and
the Midwest Branch of the American Dairy Science Association
for support of the 2002 meetings to the following companies:

Outstanding Young Scientist Awards

Extension – Land O’Lakes/Farmland Feed
Research – Roche Vitamins Inc.
Teaching – ADM Alliance Nutrition, Inc.

National Pork Board Swine Innovation (Abstract) Awards

Basic Research – National Pork Board
Applied Research – National Pork Board
Education – National Pork Board

Innovation in Dairy Research Award

Land O’Lakes

Agribusiness Award

ADM, Animal Health and Nutrition

Student Competition Paper Awards

Graduate M.S. – DeKalb Feeds, Inc.
Graduate Ph.D. – Akey
Undergraduate – Land O’Lakes

Academic Quadrathlon

APC Company, Inc.
Intervet, Inc.
Iowa State University
Receptions

Monday – Kemin Americas, Inc.
Tuesday – IMC

Lunch (Tuesday)
Fort Dodge Animal Health

Breakfast (Wednesday)
Cargill Animal Nutrition
Danbred USA
Vetlife, Milk Products, Inc. and
SAV-A-CAF Products

Cyber Cafe & Placement Center
Cargill Animal Nutrition

Abstract Book
Diamond V. Mills, Inc.

Physiology Symposium
ABS Global

Poster Session
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Growth, Development, Muscle Biology, and Meat Science Program
ALPHARMA

Nonruminant Symposium
Zinpro Corporation

Swine Program
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ADM-Alliance Nutrition, Inc.
ADM, Animal Health and Nutrition
Akey
ALPHARMA
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International Ingredient Corporation
Iowa Testing Laboratories, Inc.
  PIC
Prince Agri-Products, Inc.
  Purina Mills, Inc.
United Feeds, Inc.
Vigortone Ag Products
# SCIENTIFIC SESSIONS

**NOTE:** Posters are to be in place from 8:00 a.m., Tuesday March 19 until 12:00 noon, Wednesday, March 20. See program for the times authors will be present.

## PROGRAM

### Nonruminant Nutrition I

#### Sow and Weanling Pig Nutrition

Chair: Duane Reese, University of Nebraska, Lincoln

Monday 1:30 p.m. - 4:45 p.m.

Room: 204FG

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30</td>
<td>109</td>
<td>Effect of alpha-1,6-galactosidase, beta-1,4-mannanase, and beta-1,4-mannosidase on lactation performance in primiparous sows. S. W. Kim*, Texas Tech University.</td>
</tr>
<tr>
<td>2:30</td>
<td></td>
<td>BREAK</td>
</tr>
<tr>
<td>3:00</td>
<td>114</td>
<td>Comparison of yellow dent and NutriDense corn hybrids for nursery pig diets. C.W. Hastad*, M.D. Tokach, J.L. Nelssen, R.D. Goodband, S.S. Dritz, and C.M. Peter, Kansas State University, Manhattan, Exseed Genetics L.L.C. Owensboro, Kentucky.</td>
</tr>
</tbody>
</table>
Congressional Insights Workshop

Monday 2:00 p.m. – 5:00 p.m.
Room: 140

The American Society of Animal Science is offering a special workshop during the Midwest meeting, Monday March 18, from 2:00 - 5:00 pm. The workshop, “Congressional Insights,” is a computer simulation and educational tool that introduces participants to the legislative and political process on Capitol Hill. The workshop is open to all persons attending the Midwest meeting. Because more and more of what happens in Washington DC and at State Capitols affect how we conduct business (research, teaching and extension), this workshop is very timely and important. Above all, the workshop is both fun and educational. Please sign up on the Registration Form to participate in this no charge workshop. (For more information see www.asas.org.)
## Undergraduate Student Competitive Research Papers

Chair: Gregory P. Lardy, North Dakota State University, Fargo

Monday, 2:30 p.m. – 6:00 p.m.
Room: 204C

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30</td>
<td>293</td>
<td>Development of a multiplex microsatellite marker panel for whole genome scans in sheep. B. Mote*1 and B. Freking2, 1University of Nebraska, Lincoln, 2USDA, ARS, U.S. Meat Animal Research Center.</td>
</tr>
<tr>
<td>2:45</td>
<td>294</td>
<td>Flocculation of swine manure: influence of flocculant, rate of addition, and diet. L. Flatow*1 and W. Powers, Iowa State University.</td>
</tr>
<tr>
<td>3:00</td>
<td>295</td>
<td>Effects of manure storage time and filling scheme on odor and headspace analysis using simulated manure storage pits. S. Bastyr* and W. Powers, Iowa State University.</td>
</tr>
<tr>
<td>3:30</td>
<td>297</td>
<td>Digestibility of Amino Acids in Soybean Meal with added Soy Hulls. R. Dilger*, J. Sands, D. Ragland, and L. Adeola, Purdue University, West Lafayette, IN.</td>
</tr>
<tr>
<td>3:45</td>
<td>298</td>
<td>Mapping of the HMG-I gene family in the pig. N. Nguyen*, K. Kim, Y. Zhang, and M. F. Rothschild, Iowa State University, Ames Iowa.</td>
</tr>
<tr>
<td>4:00</td>
<td></td>
<td>BREAK</td>
</tr>
<tr>
<td>4:15</td>
<td>299</td>
<td>Fish oil, conjugated linoleic acid, and body fat deposition. B. J. Meyer*, K. M. Hargrave, and J. L. Miner, University of Nebraska.</td>
</tr>
<tr>
<td>4:45</td>
<td>301</td>
<td>Effect of ryanodine, nifedipine, and low sodium on contracture force in isolated muscle bundles from horses with recurrent exertional rhabdomyolysis. G.A. Searls* and G.W. Onan, University of Wisconsin River Falls, Wisconsin.</td>
</tr>
<tr>
<td>5:00</td>
<td>302</td>
<td>Reed-sedge peat as a feed additive for dairy cows. P. W. Clark and G. L. Golombeski*, U. W.- River Falls.</td>
</tr>
<tr>
<td>5:45</td>
<td>305</td>
<td>Effects of harvest date and late-summer fertilization rate on dry matter yield and chemical composition of stockpiled bermudagrass forage. A.A. Gelvin*1, D.L. Lalman1, C.F. Taliaferro1, and J. Ball2, 1Oklahoma Agricultural Experiment Station, 2Noble Foundation, Ardmore, OK.</td>
</tr>
</tbody>
</table>
Animal Behavior, Housing, and Well-Being I

Swine Management

Chair: Don Spiers, University of Missouri, Columbia

Tuesday, 10:15 a.m. – Noon
Room: 205D

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:15</td>
<td>1</td>
<td>The effects of exogenous ACTH on the growth performance, fat distribution and organ weights of growing pigs. R. Morrison*1, P. Hemsworth2, G. Cronin3, and R. Campbell3, University of Minnesota, MN, Victorian Institute of Animal Science, Werribee, Australia, United Feeds, Sheridan, IN.</td>
</tr>
<tr>
<td>10:30</td>
<td>2</td>
<td>Using daily spraying of oil to control dust and odor in swine grow-finish confinement building. T. E. Socha* and B. S. Zimprich, North Dakota State University.</td>
</tr>
<tr>
<td>11:00</td>
<td></td>
<td>BREAK</td>
</tr>
</tbody>
</table>

Environmental and Nutritional Influences

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15</td>
<td>4</td>
<td>Accounting for wind speed and solar radiation in the temperature-humidity index. M.S. Davis* and T.L. Mader, University of Nebraska.</td>
</tr>
<tr>
<td>11:30</td>
<td>5</td>
<td>Behavioral responses of foals subjected to short term maternal separations. J. Bohm*, M. Leavitt, and A. Zanella, Michigan State University, East Lansing.</td>
</tr>
<tr>
<td>11:45</td>
<td>6</td>
<td>Immunomodulation by oral supplementation of ascorbic acid and beta-glucan to transported dairy calves. S.D. Eicher*1 and T.R. Johnson2, USDA-ARS, West Lafayette, IN., Purdue University, West Lafayette, IN.</td>
</tr>
</tbody>
</table>
## Breeding and Genetics I

### Molecular Genetics and QTL Analysis

Chair: Catherine Ernst, Michigan State University, East Lansing

Tuesday, 8:00 a.m. – 11:30 a.m.

Room: 205E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>11</td>
<td>INVITED Development of EST sequence data and map locations for genes expressed in major female reproductive tissues. C.K. Tuggle*¹, J.A. Green², C. Fitzsimmons¹, R. Woods², R.S. Prather², S. Malchenko³, M.B. Soares³, C.A. Roberts³, K. Pedretti³, T. Casavant³, D. Pomp⁴, A. R. Caetano⁴, J. B. Edeal⁴, S. Olberging⁴, Y. D. Zhang¹, M. F. Rothschild¹, K. Garwood⁵, and W. Beavis⁵, ¹Iowa State University, Ames, ²University of Missouri, Columbia, ³University of Iowa, Iowa City, ⁴University of Nebraska, Lincoln and ⁵National Center for Genomic Resources, Sante Fe, NM.</td>
</tr>
<tr>
<td>8:30</td>
<td>12</td>
<td>Construction of a high density comparative map of bovine chromosome 5 to search for genes controlling birth weight. Z. Liu* and E. Antoniou, University of Missouri-Columbia.</td>
</tr>
<tr>
<td>8:45</td>
<td>13</td>
<td>Evaluation of insulin-like growth factor binding proteins (IGFBP) in Angus cattle divergently selected for serum insulin-like growth factor-I (IGF-I) concentration. M. Pagan*¹, M.E. Davis², K. Kizilkaya¹, R.J. Tempelman¹, and C.W. Ernst¹, ¹Michigan State University, East Lansing, ²The Ohio State University, Columbus.</td>
</tr>
<tr>
<td>9:00</td>
<td>14</td>
<td>Control of hypothalamic gene expression in mice selected for heat loss. S.R. Wesolowski*, M.F. Allan, M.K. Nielsen, and D. Pomp, University of Nebraska, Lincoln.</td>
</tr>
<tr>
<td>9:15</td>
<td>15</td>
<td>Comparison of statistical methods to study microarray data. S. Rodriguez-Zas*, University of Illinois at Urbana-Champaign.</td>
</tr>
<tr>
<td>9:30</td>
<td></td>
<td>BREAK</td>
</tr>
<tr>
<td>10:00</td>
<td>16</td>
<td>INVITED Measurement error in detecting quantitative trait loci with genetic markers. G. J. M. Rosa*¹, B. S. Yandell², and D. Gianola², ¹Michigan State University, East Lansing, ²University of Wisconsin, Madison.</td>
</tr>
<tr>
<td>10:30</td>
<td>17</td>
<td>Power of least squares interval mapping compared to single marker analyses to detect QTL with selective DNA pooling. J. Wang* and J. Dekkers, Iowa State University, Ames.</td>
</tr>
<tr>
<td>10:45</td>
<td>18</td>
<td>Extended analysis of a Berkshire x Yorkshire cross to detect QTL for growth and meat quality traits. H. Thomsen*, M. Malek, J. C. M. Dekkers, and M. F. Rothschild, Iowa State University, Ames.</td>
</tr>
<tr>
<td>11:00</td>
<td>19</td>
<td>Tests of candidate genes in QTL mapping populations. H. H. Zhao*, J. C. M. Dekkers, and M. F. Rothschild, Iowa State University, Ames.</td>
</tr>
</tbody>
</table>
Extension I
Posters

Dairy Cattle Management

Tuesday, 8:00 a.m. – 5:00 p.m.
Authors present, 10:00 a.m. - Noon
Room: Exhibit Hall, Room 206

Abstract Number Paper

45 Evaluation of particle length reduction during silage removal using a bunker facer. D. Sutter1 and R. D. Shaver*, 1Brown County Extension, UW Extension, 2Department of Dairy Science, UW Madison, UW Extension.

46 Influence of a rumen-fluid drench at calving on milk production and incidence of health disorders in early lactation dairy cows. I. Possin*, J. Keuning2, and R. D. Shaver1, 1Fond du Lac County Extension, UW Extension, 2Kewaunee County Extension, UW Extension, 3Department of Dairy Science, UW Madison, UW Extension.


50 Fatty acid profiles of milk and rumen digesta from cows fed fish oil, extruded soybeans or their blend. A. A. Abu-Ghazaleh*, D. J. Schingoethe, A. R. Hippen, K. F. Kalscheur, and L. A. Whitlock, South Dakota State University.


52 Differences in characteristics of the immune systems of neonatal, juvenile, and adult Holsteins. K. R. Martin, S. T. Franklin*, and R. J. Harmon, University of Kentucky.

53 Effects of moderately increasing milk replacer feeding rate on performance and health of Holstein bull calves. J. Sowinski*, D. Kuehnel2, S. Hayes2, and P. Hoffman3, 1Animix, Juneau, WI, 2Milk Products, Chilton, WI, 3University of Wisconsin, Madison.
Extension II

Posters

Beef Cattle Management

Tuesday, 8:00 a.m. – 5:00 p.m.
Authors present, 10:00 a.m. - Noon
Room: Exhibit Hall, Room 206

Abstract Number  Paper
55  Factors affecting purchase prices of centrally-tested, yearling bulls from 1997 to 2000. T.T. Marston*¹, D.W. Moser¹, J.F. Gleghorn², and L.E. Wankel¹, ¹Kansas State University, Manhattan, ²Texas Tech University, Lubbock.
56  Practical aspects of beef carcass traceability in commercial beef processing plants using an electronic identification system. J. R. Davis* and M. E. Dikeman, Kansas State University, Manhattan.
57  MinCheck: A computer tool for understanding and utilizing results from feed and water mineral analysis. C.A. Bandyk¹, D.A. Blasi*², and M.H. Hogan³, ¹Trails End Farm Consulting & Software, Mineral Point, WI, ²Kansas State University, Manhattan, KS, ³SDK Laboratories, Hutchinson, KS.

Extension III

Feeding Management of Young Calves

Chair: Micheal J. Brouk, Kansas State University, Manhattan

Tuesday, 8:00 a.m. – 10:15 a.m.
Room: 134

Time  Abstract Number  Paper
8:00  58  Performance of calves on two commercially available calf starter feeds. M.L. O’Brien*, K.J. Touchette, and J.A. Coalson, Merrick’s Inc. Union Center, WI.
8:30  60  Liquid egg as an alternative protein source in calf milk replacers. K.J. Touchette*, M.L. O’Brien, and J.A. Coalson, Merrick’s Inc. Union Center, WI.
8:45  61  Comparison of Neomycin/Oxytetracycline and Neomix 325 SP in All Milk Calf Milk
Graduate Student Competitive Research Papers

**M.S. and Ph.D. Divisions**

Chair: James Reecy, Iowa State University, Ames

Tuesday, 8:00 a.m. – 10:00 a.m.

Ph.D. division: 8:00 a.m. – 9:00 a.m.
M.S. division: 9:15 am. – 10:00 a.m.

Room: 205D

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>70</td>
<td>Wet corn gluten feed and CP for steam flaked corn-based finishing diets. H. C. Block*, C. N. Macken¹, T. J. Klopfenstein¹, R. J. Cooper², and R. A. Stock², University of Nebraska - Lincoln, Cargill.</td>
</tr>
<tr>
<td>8:15</td>
<td>71</td>
<td>The effect of freezing on Warner-Bratzler shear force values in beef longissimus steaks across several postmortem aging periods. B. C. Shanks*, D. M. Wulf, and R. J. Maddock, South Dakota State University, Brookings, SD.</td>
</tr>
<tr>
<td>8:30</td>
<td>72</td>
<td>Effect of previous liveweight gain on visceral organ mass and oxygen consumption in cattle during high-grain feeding. M. J. Hersom*, C. R. Krehbiel, and G. W. Horn, Oklahoma State University, Stillwater.</td>
</tr>
<tr>
<td>8:45</td>
<td>73</td>
<td>Influence of carnitine and/or chromium on blood parameters of gestating sows. J.C. Woodworth*, M.D. Tokach, J.L. Nelssen, R.D. Goodband, S.S. Dritz, J.E. Minton, and</td>
</tr>
</tbody>
</table>
9:00  BREAK

9:15  74  **National Pork Board Innovation Award – Research** Pre- and postweaning performance of pigs injected with dexamethasone at birth. A.M. Gaines*1, J.A. Carroll2, G.L. Allee1, G.F. Yi1, J.D. Spencer1, J.W. Frank1, and D.C. Kendall1, 1University of Missouri-Columbia, 2Animal Physiology Research Unit, ARS-USDA, Columbia, Missouri.


9:45  76  Influence of linoleic acid isomers on body fat in mice. K. M. Hargrave* and J. L. Miner, University of Nebraska - Lincoln.

---

**Growth, Development, Muscle Biology, and Meat Science I**

**Meat Science and Muscle Biology**

Chair: Jeffrey N. Carter, Ralston Purina Company, St. Louis, MO

Tuesday, 8:00 a.m. – 10:45 a.m.  
Room: 204C

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:15</td>
<td>78</td>
<td>Effects of dietary manganese on quality characteristics of pork longissimus muscle (LM) chops during retail display. W. J. Roberts*1, J. K. Apple1, C. B. Boger1, C. V. Maxwell1, K. G. Friesen1, and T. M. Fakler2, 1University of Arkansas, 2Zinpro Corporation.</td>
</tr>
<tr>
<td>8:30</td>
<td>79</td>
<td>The effect of feeding Ractopamine (Paylean™) on loin quality and sensory characteristics in three genetic lines of swine. G.M. Stoller*1, H.N. Zerby1, S.J. Moeller1, T.J. Baas2, C.D. Johnson2, and L.E. Watkins3, 1The Ohio State University, Columbus, OH, 2Iowa State University, Ames, 3Elanco Animal Health, Greenfield, IN.</td>
</tr>
<tr>
<td>8:45</td>
<td>80</td>
<td>Fresh pork loin quality associated with domestic or export storage. D. M. McNamara*1, T. W. Holthaus2, R. C. Johnson3, C. R. Calkins3, and E. P. Berg1, 1University of Missouri, 2University of Nebraska, 3Triumph Pork Group, LLC.</td>
</tr>
<tr>
<td>9:00</td>
<td>81</td>
<td>Antemortem use of infrared thermography to predict pork quality. T. E. Lawrence*, M. F. Spire, M. E. Dikeman, M. C. Hunt, S. B. Hogge, and B. W. James, Kansas State University.</td>
</tr>
<tr>
<td>9:15</td>
<td>82</td>
<td>Influence of harvest processes on pork loin and ham quality. M.A. Gardner*1, S.M. Lonergan1, E. Huff-Lonergan1, L.J. Rowe1, and C.M. Schultz-Kaster2, 1Iowa State University, 2Premium Standard Farms.</td>
</tr>
</tbody>
</table>


10:00 85 Improving foodservice consumer satisfaction of beef. T. B. Schmidt*, C. L. Lorenzen, and M. P. Keene, University of Missouri - Columbia.

10:15 86 Cooking Rate Effects on Beef Tenderness, Cooking Losses, Sarcomere Length, and Collagen Solubility. D. A. King*, M. E. Dikeman, M. C. Hunt, and C. L. Kastner, Kansas State University, Manhattan, KS.

10:30 87 Effects of cooking beef muscles from frozen or thawed on cooking traits and palatability. E. Obuz*, M. E. Dikeman, T. E. Lawrence, and E. J. Yancey, Kansas State University.

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**Growth, Development, Muscle Biology, and Meat Science II**

**Posters**

Tuesday, 8:00 a.m. - 5:00 p.m.

Authors present, 10:00 a.m. - Noon

Room: Exhibit Hall, Room 206

<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>Performance of growing-finishing pigs in pens with low or high variation in body weight. B. F. Wolter*¹, M. Ellis¹, S. E. Curtis¹, B. P. Corrigan¹, J. M. DeDecker¹, E. N. Parr², and D. M. Webel², ¹University of Illinois, Urbana, ²United Feeds, Sheridan, IN.</td>
</tr>
<tr>
<td>95</td>
<td>Effect of excess dietary leucine on growth and carcass characteristics, intramuscular fat level, and pork quality in finishing pigs. Y. Hyun*, M. Ellis, and F. McKeith, University of Illinois at Urbana-Champaign.</td>
</tr>
<tr>
<td>96</td>
<td>Effect of a step-up or step-down ractopamine sequence on carcass primal cut weights. A. P. Schinckel*, C. T. Herr, D. C. Kendall, K. A. Bowers, S. L. Hankins, T. E. Weber, and B. T. Richert, Purdue University; West Lafayette, IN.</td>
</tr>
<tr>
<td>97</td>
<td>Effect of ractopamine and dietary crude protein on carcass cut and tissue weights. A. P. Schinckel*, C. T. Herr, D. C. Kendall, and B. T. Richert, Purdue University; West Lafayette,IN.</td>
</tr>
<tr>
<td>98</td>
<td>A three year summary of finishing pig performance in hoop structures and confinement during winter and summer in Iowa. M. S. Honeyman, J. D. Harmon, and A. D. Penner*, Iowa State University.</td>
</tr>
<tr>
<td>99</td>
<td>The muscle cell intermediate filament protein synemin interacts with the universal cytolinker plectin. D. Walker* and R. Robson, Iowa State University.</td>
</tr>
</tbody>
</table>


Nonruminant Nutrition II

Weanling Pig Nutrition

Chair: Betsy Newton, Akey, Lewisburg, OH

Tuesday, 8:00 a.m. - 11:30 a.m.
Room: 204FG

Time | Abstract Number | Paper
--- | --- | ---
8:00 | 140 | Influence of crystalline or protein-bound lysine on lysine utilization for growth in nursery pigs. J. J. Colina*, P. S. Miller, A. J. Lewis, and R. L. Fischer, University of Nebraska, Lincoln.
8:15 | 141 | Evaluation of the lysine requirement for 11 to 25 kg barrows. D. C. Kendall*¹, G. Yi¹, A. M. Gaines¹, G. L. Allee¹, J. L. Usry², M. Steidinger, and W. Cast, ¹University of Missouri-Columbia, ²Ajinimoto Heartland Inc.
8:30 | 142 | Effects of plasma grade, irradiation or paraaldehyde treatment of plasma, or whole diet irradiation on growth performance of weaned pigs. D. R. Cook*, M. M. Ward, and N. D. Paton, Akey Inc. Lewisburg, OH.
9:30 | 146 | A comparison of roller-dried whey and spray-dried whey in swine starter diets. G. F. Yi¹, G. L. Allee¹, A. M. Gaines¹, D. C. Kendall¹, K. M. Halpin², and M. Trotter², ¹University of Missouri-Columbia, ²International Ingredient Corporation, Inc.
9:45 | 147 | Non-pasturized, spray-dried egg treated with Termin-8 as a protein source for phase 1 nursery diets. M.E. Davis*¹, C.V. Maxwell¹, Z.B. Johnson¹, D.C. Brown¹, S. Singh¹, K.J. Tocchette³, and J.A. Coalson³, ¹University of Arkansas, Fayetteville, ²Merrick’s Inc., Union Center, WI.
10:00 | | BREAK
10:15 148 Effects of mannanoligosaccharides in diets for nursery pigs. J. D. Hancock*, C. L. Jones, and C. W. Starkey, Kansas State University.

10:30 149 Effect of dietary mannanoligosaccharide (MOS) and sodium chlorate (CHL) on growth performance of weaned pigs challenged with *Salmonella enterica* serotype typhimurium (ST). T. E. Burkey*, S. S. Dritz, J. C. Nietfeld, B. J. Johnson, and J. E. Minton, Kansas State University.


11:00 151 Response of weanling pigs to niacin and vitamin $\text{B}_{12}$ supplementation. S.S. Blodgett*, P.S. Miller, A.J. Lewis, and R.L. Fischer, University of Nebraska, Lincoln.

11:15 152 Evaluating the antioxidant status of the weaned pig from supplemental vitamin C and vitamin E. S. Ching and D.C. Mahan*, The Ohio State University.

**Nonruminant Nutrition III**

**Growing-finishing Nutrition**

Chair: Hans Stein, South Dakota State University, Brookings

Tuesday, 8:00 a.m. - Noon
Room: 204AB

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>153</td>
<td>Evaluating the influence of B vitamin supplementation on growth and carcass composition of growing and finishing swine. B.V. Lawrence*1, J.D. Hedges1, J.D. Hahn1, M.B. Coelho2, B.W. Cousins2, and S. Haye2, 1Hubbard Feeds, Inc., 2BASF Corporation.</td>
</tr>
<tr>
<td>8:15</td>
<td>154</td>
<td>Feeding high levels of natural or synthetic vitamin E to grower-finisher pigs. N. D. Fastinger*, T. G. Wiseman, and D. C. Mahan, The Ohio State University.</td>
</tr>
<tr>
<td>8:30</td>
<td>155</td>
<td>Effects of removing vitamin and trace mineral premixes on growth and carcass measurements in finishing pigs housed in a moderately stressful environment. C. W. Starkey*, J. D. Hancock, J. S. Park, C. L. Jones, and J. D. Hancock, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>8:45</td>
<td>156</td>
<td>Acidulated soapstock and restaurant grease in diets for finishing pigs. C. W. Starkey*, J. D. Hancock, D. H. Kropf, C. L. Jones, K. H. Hachmeister, and J. D. Dunn, Kansas State University, Manhattan.</td>
</tr>
</tbody>
</table>


10:30 163 Effect of dietary particle size and nutrient supply on nitrogen excretion of grower pigs. M. A. Oryschak1,2 and R. T. Zijlstra*1, 1Prairie Swine Centre Inc., 2University of Saskatchewan, Saskatoon, Canada.


11:00 165 Plasma urea nitrogen as an indicator of the isoleucine requirement of grower pigs. T.M. Parr*1, B.J. Kerr2, and D.H. Baker1, 1University of Illinois, Urbana, 2Nutriquest, Inc., Chesterfield, MO.

11:15 166 Crystalline amino acid supplementation of grain sorghum-based, low protein diets for growing and finishing swine. R. O. Myer* and D. W. Gorbet, University of Florida.

11:30 167 Differences in apparent and standardized crude protein and amino acid digestibility coefficients among low phytate corn, normal corn, and soybean meal in growing pigs. R. A. Bohlke*, H. H. Stein, A. R. Wirt, and R. C. Thaler, South Dakota State University.

11:45 168 Determining an optimum lysine:calorie ratio for 35 to 60 kg gilts in a commercial finishing facility. R.G. Main*, S.S. Dritz, M.D. Tokach, R.D. Goodband, and J.L. Nelssen, Kansas State University, Manhattan.
**Odor and Nutrient Management**

**Symposium: Nutrient Excretion and Odor Control**

Chair: Steven J. Moeller, The Ohio State University, Columbus

Tuesday, 10:15 a.m. – 12:00 p.m.
Room: 138

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:15</td>
<td>198</td>
<td>Intrinsic phytase reduces excretion of volatile organic compounds in pigs. A. Woldeghebriel*¹, A Koenigsfeld¹, and A. Mathew², ¹Lincoln University, Jefferson City MO, ²University of Tennessee, Knoxville TN.</td>
</tr>
<tr>
<td>10:30</td>
<td>199</td>
<td>Effects of phytase on nutrient digestibility and amount of odorous compounds in slurries of weaned pigs. Q.M. Yang* and S.K. Baidoo, Southern Research and Outreach Center, University of Minnesota.</td>
</tr>
<tr>
<td>10:45</td>
<td>200</td>
<td>Effect of high available phosphorus (HAP) corn and phytase on phosphorus (P) excretion in finishing beef cattle. S. L. Hankins*, J. D. Arseneau, S. A. DeCamp, R. P. Lemenager, and A. L. Sutton, Purdue University, West Lafayette, IN.</td>
</tr>
<tr>
<td>11:00</td>
<td>201</td>
<td>Effects of dietary crude protein reduction on pig performance, manure composition, aerial ammonia, hydrogen sulfide, and odor levels in swine buildings. B.E. Hill*¹, D.C. Kendall², S.L. Hankins³, S.A. Trapp¹, B.T. Richert¹, D.T. Kelly¹, A.L. Sutton¹, G.L. Allee², T.A. van Kempen³, and W.J. Powers⁴, ¹Purdue University, W. Lafayette, IN, ²University of Missouri, Columbia, ³North Carolina State University, Raliegh, ⁴Iowa State University, Ames.</td>
</tr>
<tr>
<td>11:30</td>
<td>203</td>
<td>Infrared spectroscopy as an optical nose for predicting odor sensation. T.A.T.G. van Kempen*¹, W.J. Powers², and A. Sutton³, ¹North Carolina State University, ²Iowa State University, ³Purdue University.</td>
</tr>
<tr>
<td>11:45</td>
<td>204</td>
<td>Odor solutions initiative manure pit additive testing results. C. L. Tengman*¹, R. N. Goodwin¹, A. K. Gralapp-Gonzalez¹, A. J. Heber², J. Q. Ni², K. J. Fakhoury², and A. L. Sutton², ¹National Pork Board, Des Moines, IA, ²Purdue University, West Lafayette, IN.</td>
</tr>
</tbody>
</table>
Physiology I

Chair: Jeff Vallet, Roman L. Hruska US Meat Research Center, Clay Center, NE

Tuesday, 8:30 a.m. – 9:30 a.m.
Room: 136

<table>
<thead>
<tr>
<th>Time</th>
<th>Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>205</td>
<td>Effects of estradiol (E) and pregnant mare serum gonadotropin (PMSG) on follicular growth in neonatal pigs. P. E. Davis* and M. C. Lucy, University of Missouri-Columbia.</td>
</tr>
<tr>
<td>8:45</td>
<td>206</td>
<td>Effect of PG600 given at d 7 post-weaning on follicular development, estrus, and ovulation in sows classified as anestrus in a commercial swine herd. C.J. Bracken*, J.S. Seaman, T.J. Safranski, and M.C. Lucy, University of Missouri.</td>
</tr>
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</table>

Physiology II

Symposium: Sperm Storage, Sorting and Sexual Dimorphism

Sponsored by: ABS Global

Chair: David Miller, University of Illinois, Urbana

Tuesday, 10:00 a.m. - Noon
Room: 136

<table>
<thead>
<tr>
<th>Time</th>
<th>Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>209</td>
<td>INVITED Altering sperm membranes to improve cryosurvival. J.K. Graham* and P.H. Purdy, Colorado State University.</td>
</tr>
</tbody>
</table>

11:30 212 INVITED Sexual dimorphism among blastocysts may provide for sex ratio adjustment in the bovine. R. M. Roberts*, K. Kimura, and M. Larson, University of Missouri-Columbia.

**Physiology III**

**Posters**

Tuesday, 8:00 a.m. – 5:00 p.m.
Authors present 8:00 a.m. – 10:00 a.m.
Room: Exhibit Hall, Room 206

<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>222</td>
<td>Effet of handling intensity on blood acid-base balance in slaughter weight pigs. T. M. Bertol*¹, M. Ellis¹, D. N. Hamilton¹, and F. McKeith¹, ¹University of Illinois at Urbana-Champaign, ²CNPq, Brazil.</td>
</tr>
<tr>
<td>224</td>
<td>Effects of zeranol upon luteal maintenance and fetal development in peripubertal gilts. W.E. Trout¹, C.T. Herr², B.T. Richert², W.L. Singleton², and M.A. Diekman*², ¹Trout Technologies, ²Purdue University.</td>
</tr>
<tr>
<td>225</td>
<td>Feeding melengestrol acetate (MGA) to resynchronize repeat estrus in beef heifers previously synchronized using a MGA/Prostaglandin F₂α protocol. C. R. Dahlen* and G. C. Lamb, University of Minnesota.</td>
</tr>
</tbody>
</table>
# Ruminant Nutrition and Forages I

## Posters

Tuesday, 8:00 a.m. – 5:00 p.m.
Authors present, odd abstract numbers 8:00 a.m. – 10:00 a.m.; even abstract numbers 10:00 a.m. – Noon
Room: Exhibit Hall, Room 206

<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>228</td>
<td>Effect of legume persistence in endophyte-infected tall fescue pastures on forage production and steer performance. L.W. Lomas*, J.L. Moyer, and G.L. Kilgore, Kansas State University, Parsons.</td>
</tr>
<tr>
<td>229</td>
<td>Performance of lambs grazing three different forages during the summer months in Missouri. D.O. Kiesling*, A.N.V. Stewart, A. Woldeghebriel, S. Meredith, G. Dudenhoffer, and R. Savage, Lincoln University, Jefferson City, MO.</td>
</tr>
<tr>
<td>235</td>
<td>Effect of field pea level on intake, digestion, and ruminal fermentation in beef steers fed growing diets. J.J. Reed*, G.P. Lardy, T.C. Gilbery, M.L. Bauer, and J.S. Caton, North Dakota State University.</td>
</tr>
<tr>
<td>237</td>
<td>Influence of advancing season on intake, site of digestion, and microbial efficiency in beef steers grazing native range in western North Dakota. H. J. Pitcher*¹, J. S. Caton¹, D. A. Cline¹, M. L. Bauer¹, L. L. Manske², and G. P. Lardy¹, ¹North Dakota State University, Fargo, ²North Dakota State University, Dickinson.</td>
</tr>
<tr>
<td>239</td>
<td>Performance of heifers fed a corn silage based diet and supplemented with soybean meal versus distillers dried grains plus solubles. J. B. Corners* and J. E. Williams, University of Missouri-Columbia.</td>
</tr>
</tbody>
</table>

Effects of high linoleic safflower seed supplement to gestating ewes on survivability of lambs. H. B. Encinas*, T. C. Faller, M. L. Bauer, and G. P. Lardy, North Dakota State University, Fargo.


Using orchardgrass and endophyte-free fescue versus infected fescue overseeded on bermudagrass for cow herds: year 2. D. A. Scarbrough1, W. K. Coblenetz*, K. P. Coffey1, T. F. Smith2, J. B. Humphry1, D. S. Hubbell, III2, J. K. Martin2, J. E. Turner1, K. F. Harrison2, and D. H. Hellwig1, 1University of Arkansas, Fayetteville, 2Livestock and Forestry Branch Station, BATESVILLE.


Pasture and weaning management systems to reduce the incidence of tall fescue toxicosis in cow-calf pairs. D. A. Scarbrough1, K. P. Coffey*, W. K. Coblenetz1, J. K. Martin2, J. B. Humphry1, and D. H. Hellwig1, 1University of Arkansas, Fayetteville, 2Livestock and Forestry Branch Station, Batesville.


Self-fed wheat middlings in backgrounding diets for beef heifers. T.C. Gilbery*, G.P. Lardy1, B. Kreft2, J. Dhuyvetter3, and M.L. Bauer1, 1North Dakota State University, Fargo, 2Streeter, 3Minot.

Year round grazing systems for fall- and spring-calving beef cows: winter grazing management. N. A. Janovick* and J. R. Russell, Iowa State University.

Effect Of Creep Feeding Pressed Block or Salt-Limited Pellets To Beef Calves. T.C. Gilbery1, M.H Knight1, G.P. Lardy1, B. Kreft2, J.S. Caton1, and R. Hall3, 1North Dakota State University, Fargo, 2Central Grasslands Research Center, Streeter, 3Cooperative Research Farms.

Year round grazing systems for fall- and spring-calving beef cows: summer grazing management. N. A. Janovick* and J. R. Russell, Iowa State University, Ames.

Grazing potential of barley or oat forage for yearling beef heifers in the Northern Great Plains. W. W. Poland*, P. M. Carr, and L. J. Tisor, North Dakota State University, Dickinson.


Methods to estimate DIP content and nutritive value of grazed Old World Bluestem and Tall Grass prairie across the calendar the calendar year. R. Basurto*, H. Purvis II, T. Bodine, and G. W. Horn, Oklahoma State University.

Ruminant Nutrition and Forages II

Cow-Calf and Stocker Nutrition

Chair: Marc Bauer, North Dakota State University, Fargo

Tuesday, 8:00 a.m. – 11:45 a.m.
Room: 205IJ

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>256</td>
<td>Effects of harvest date and late-summer nitrogen fertilization rate on mineral concentrations of stockpiled bermudagrass forage. D.L. Lalman*1, A.A. Gelvin1, C.M. Taliaferro1, and J. Ball2, 1Oklahoma Agriculture Experiment Station, Stillwater, 2Noble Foundation, Ardmore, Oklahoma.</td>
</tr>
<tr>
<td>8:30</td>
<td>258</td>
<td>Effects of nitrogen fertilization rate and harvest date on bermudagrass quality and in situ DM and fiber degradation. N. W. Galdamez*1, K. P. Coffey1, W. K. Coblentz1, J. E. Turner1, D. A. Scarbrough1, J. B. Humphry1, J. L. Gunzulis2, and M. B. Daniels2, 1University of Arkansas, Fayetteville, AR, 2Cooperative Extension Service.</td>
</tr>
<tr>
<td>8:45</td>
<td>259</td>
<td>Relative Forage Quality: an alternative to Relative Feed Value. J. E. Moore*1 and D. J. Undersander2, 1University of Florida, Gainesville, FL, 2University of Wisconsin, Madison, WI.</td>
</tr>
<tr>
<td>9:00</td>
<td>260</td>
<td>Effect of grazing corn stalks in the spring on subsequent crop yields. C. B. Wilson*, G. E. Erickson, T. J. Klopfenstein, and W. Luedtke, University of Nebraska, Lincoln.</td>
</tr>
<tr>
<td>9:15</td>
<td>261</td>
<td>Comparison of Dry and Liquid Protein Supplements Fed to Stocker Cattle consuming Low-Quality Native Grass: performance and digestibility. J. S. Weyers*1, H. T. Purvis II1, C. R. Krehbiel1, D. L. Lalman1, D. A. Cox1, J. E. Moore2, and J. Harris3, 1Oklahoma State University, Stillwater OK, 2University of Florida, Gainsville FL, 3Westway Ag, Tomball, TX.</td>
</tr>
<tr>
<td>9:30</td>
<td>262</td>
<td>Effect of the frequency of cracked corn supplementation on alfalfa hay utilization by growing cattle. A.F. La Manna1, H.P. Purvis II*1, T.N. Bodine1, G.W. Horn1, and F.N. Owens2, 1Oklahoma State University, 2Dupont Specialty Grains.</td>
</tr>
<tr>
<td>9:40</td>
<td>263</td>
<td>Effects of weaning date and protein supplementation on cow/calf productivity. L. A. Ciminski*, D. C. Adams2, T. J. Klopfenstein1, and R. T. Clark3, 1University of Nebraska-Lincoln, Animal Science, 2University of Nebraska-Lincoln, West Central Research and Extension Center, Animal Science, 3University of Nebraska-Lincoln, West Central Research and Extension Center, Agricultural Economics.</td>
</tr>
<tr>
<td>10:00</td>
<td></td>
<td>BREAK</td>
</tr>
</tbody>
</table>
Effect of field pea supplementation on intake, digestion, and ruminal fermentation in beef steers fed forage based diets. J.J. Reed*, G.P. Lardy, T.C. Gilbery, M.L. Bauer, and J.S. Caton, North Dakota State University.

Drought Stressed Soybean Supplementation for Gestating Beef Cows. J.D. Steele*, D.L. Lalman, R.P. Wettemann, and C.K. Krehbiel, Oklahoma Agriculture Experiment Station, Stillwater.

Influence of energy supplementation on intake, digestion, ruminal fermentation and microbial efficiency in nursing beef calves. M.H. Knight*, J.S. Caton, V. Burke, M.L. Bauer, and G.P. Lardy, North Dakota State University, Fargo.

Influence of cow parity and genetic potential for milk production on forage intake of Brangus females during late gestation. C.R. Johnson*¹, D.L. Lalman¹, M.A. Brown², and L. Appeddu², ¹Oklahoma Agricultural Experiment Station, ²USDA-ARS Grazinglands Research Laboratory.

Influence of cow parity and genetic potential for milk production on forage intake of Brangus females during early lactation. C.R. Johnson*¹, D.L. Lalman¹, M.A. Brown², and L. Appeddu², ¹Oklahoma Agricultural Experiment Station, ²USDA-ARS Grazinglands Research Laboratory.

Influence of cow parity and genetic potential for milk production on forage intake of Brangus females during late lactation. C.R. Johnson*¹, D.L. Lalman¹, M.A. Brown², and L. Appeddu², ¹Oklahoma Agricultural Experiment Station, ²USDA-ARS Grazinglands Research Laboratory.

Teaching I

Posters

Tuesday, 8:00 a.m. – 5:00 p.m.
Authors present, 8:00 a.m. - 10:00 a.m.
Room: Exhibit Hall, Room 206

Abstract Number Paper
Animal Behavior, Housing, and Well-Being II
Posters

Tuesday, 8:00 a.m. – 5:00 p.m.
Authors present, 1:00 p.m. – 3:00 p.m.
Room: Exhibit Hall, Room 206

Abstract Number Paper
7 Florfenicol concentration in serum and lung lavage fluid of beef cattle fed various concentrations of dietary fat in a 70% concentrate diet. G. C. Duff*, B. D. Hunsaker, A. C. Anderson, J. D. Roder, and D. A. Walker, The University of Arizona, Tucson, Texas Tech Health Science Center, Amarillo, Clayton Livestock Research Center, New Mexico State University, Clayton.

Breeding and Genetics II

Genetic Parameter Estimation

Co-Chairs: Jack Dekkers, Iowa State University, Ames and Catherine Ernst, Michigan State University, East Lansing

Tuesday, 1:00 p.m. – 4:45 p.m.
Room: 205E

Time Abstract Number Paper
1:00 21 Trends in heritability of serially measured ultrasound ribeye area measures in Angus cattle. A. Hassen*, D. E. Wilson, and G. H. Rouse, Iowa State University, Ames.
1:15 22 Genetic parameters for sex-specific traits in beef cattle: mature weight of cows and carcass traits of steers. K. A. Nephae*, L. V. Cundiff, and L. D. Van Vleck, University of Nebraska, Lincoln, USDA, ARS, USMARC, Clay Center, NE, Lincoln, NE.
1:30  23  Effect of sire misidentification on estimates of genetic parameters for weaning weight. S. Senneke*1, M. D. MacNeil2, and L. D. Van Vleck3, 1University of Nebraska, Lincoln, 2USDA, ARS, LARRL, Miles City, MT, 3USDA, ARS, USMARC, Lincoln, NE.

1:45  24  Genetic estimates of parameters for hip height at different ages for four lines of Hereford cows. J. M. Rumph*1, R. M. Koch1, K. E. Gregory2, L. V. Cundiff2, and L. D. Van Vleck2,3, 1University of Nebraska, Lincoln, NE, 2,3USDA, ARS, USMARC, 2Clay Center, NE, 3Lincoln, NE.

2:00  25  Genetic trends for mature weight for four lines of Hereford cows. J. M. Rumph*1, R. M. Koch1, K. E. Gregory2, L. V. Cundiff2, and L. D. Van Vleck2,3, 1University of Nebraska, Lincoln, 2,3USDA, ARS, USMARC, 2Clay Center, NE, 3Lincoln, NE.

2:15  26  Genetic parameters for lifetime production of Hereford cows. G. E. Martinez*1, R. M. Koch1, L. V. Cundiff2, K. E. Gregory2, and L. D. Van Vleck2,3, 1University of Nebraska, Lincoln, 2,3USDA, ARS, USMARC, 2Clay Center, NE, 3Lincoln, NE.

2:30  27  Genetic parameters for longevity and lifetime production of Hereford cows. G. E. Martinez*1, R. M. Koch1, L. V. Cundiff2, K. E. Gregory2, and L. D. Van Vleck2,3, 1University of Nebraska, Lincoln, 2,3USDA, ARS, USMARC, 2Clay Center, NE, 3Lincoln, NE.

2:45  BREAK


3:30  29  Comparison of models for traits of Rambouillet sheep. L. D. Van Vleck*1, K. J. Hanford2, and G. S. Snowder3, 1University of Nebraska, Lincoln, 2USDA, ARS, USMARC, 2Clay Center, NE, 3Lincoln, NE.

3:45  30  Genetic parameters for subjective milk score and litter weight for Targhee, Columbia, Rambouillet, and Polypay Sheep. R. Sawalha*1, J. F. Keown1, G. D. Snowder2, and L. D. Van Vleck3, 1University of Nebraska, Lincoln, 2USDA-ARS, U.S. Sheep Experiment Station, Dubois, ID, 3USDA, ARS, U.S. Meat Animal Research Center, Lincoln, NE.

4:00  31  Genetic parameters for growth, feed intake, and feeding behavior in a composite population of sheep. K. M. Cammack*1, M. K. Nielsen1, K. A. Leymaster2, and T. G. Jenkins2, 1University of Nebraska, Lincoln, 2USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

4:15  32  Genetic parameters and responses to nine generations of selection to increase litter size in swine. J. W. Holl* and O. W. Robison, North Carolina State University, Raleigh.

4:30  33  Genetic parameters for primal cut weights in pigs. D. W. Newcom*1, T. J. Baas1, and R. N. Goodwin2, 1Iowa State University, Ames, 2National Pork Board, Des Moines, IA.
# Teaching II and Career and Placement Committee

**Internships and Career Development**

Chair: David Fischer, University of Illinois, Edwardsville

Tuesday, 10:00 a.m. – 12:00 Noon
Room: 140

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>Welcome and introduction. David Fischer, University of Illinois (Moderator) Chair, Student Career and Placement Committee</td>
<td></td>
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<tr>
<td>10:05</td>
<td>An Industry Perspective on Student Preparation for Internships and Career Development. Danielle Walker, Elanco Animal Health, A Division of Eli Lilly and Company, IN.</td>
<td></td>
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<tr>
<td>10:30</td>
<td>A Student Perspective on Preparation for Internship Experiences. Dan Adams, University of Nebraska, Lincoln.</td>
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<tr>
<td>11:00</td>
<td>An Undergraduate Internship Program: Management to Maximize the Educational Experience. Karol Fike, The Ohio State University, Columbus.</td>
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<tr>
<td>11:30</td>
<td>Question and answer/discussion session</td>
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<tr>
<td>11:50</td>
<td>Summary and Conclusions. David Fischer, University of Illinois, Edwardsville.</td>
<td></td>
</tr>
</tbody>
</table>
### Breeding and Genetics III

**Posters**

Tuesday, 8:00 a.m. – 5:00 p.m.
Authors present, 2:00 p.m. – 4:00 p.m.
Room: Exhibit Hall, Room 206

<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Two Pit-1 RFLPs and their association with growth traits in beef cattle. Q. Zhao*, M.E. Davis, and H.C. Hines, The Ohio State University, Columbus.</td>
</tr>
<tr>
<td>35</td>
<td>Comparison of the glycolytic potential and DNA-based test for predicting Rendement Napole genotype. D. N. Hamilton*, M. Ellis¹, K. D. Miller², F. K. McKeith¹, A. D. Higgerson¹, and J. E. Beever¹, ¹University of Illinois at Urbana-Champaign, ²Elanco Animal Health, Greenfield, Indiana.</td>
</tr>
<tr>
<td>36</td>
<td>Study of factors influencing sow longevity in swine breeding herds. S. L. Rodriguez-Zas*, B. R. Southey¹, R. V. Knox¹, and J. F. Connor², ¹University of Illinois at Urbana-Champaign, ²Carthage Veterinary Service, Ltd.</td>
</tr>
<tr>
<td>37</td>
<td>Introggression of multiple QTL with limited population size in livestock. N. Chaiwong* and J. Dekkers, Iowa State University, Ames.</td>
</tr>
<tr>
<td>38</td>
<td>Confirmation of quantitative trait loci (QTL) affecting body weight and fatness in a congenic line of mice. N. Jerez-Timaure*, D. Pomp¹, and E. J. Eisen², ¹University of Nebraska, Lincoln, ²North Carolina State University, Raleigh.</td>
</tr>
</tbody>
</table>

### Growth, Development, Muscle Biology, and Meat Science III

**Symposium: Current Topics in Satellite Cells Research**

Chair: Steven J. Jones, University of Nebraska, Lincoln

Tuesday 1:00 p.m. - 4:00 p.m.
Room: 204C

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
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<tbody>
<tr>
<td>1:00</td>
<td>88</td>
<td>INVITED Muscle satellite cell research in meat animals. A. L. Grant* and D. E. Gerrard, Purdue University, West Lafayette, IN.</td>
</tr>
<tr>
<td>1:45</td>
<td>89</td>
<td>INVITED Recent advances in our understanding of skeletal muscle satellite cells. J. Reecy*, Iowa State University, Ames.</td>
</tr>
<tr>
<td>2:30</td>
<td>90</td>
<td>INVITED How do satellite cells respond to mechanical changes in muscle? Ronald Allen*¹ and R. Tatsumi², ¹Univeristy of Arizona, ²Kyushu University.</td>
</tr>
<tr>
<td>3:15</td>
<td>91</td>
<td>INVITED Repression of skeletal myogenesis by intracellular signaling modules that</td>
</tr>
</tbody>
</table>

**Nonruminant Nutrition IV**

**Posters**

Tuesday, 8:00 a.m. - 5:00 p.m.
Authors present, 1:00 p.m. – 3:00 p.m.
Room: Exhibit Hall, Room 206

<table>
<thead>
<tr>
<th>Abstract Number</th>
<th>Paper</th>
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</thead>
<tbody>
<tr>
<td>122</td>
<td>Low phytate barley cultivars for growing pigs: Growth performance and bone strength. T. L. Veum*, D. W. Bollinger1, D. R. Ledoux1, M. S. Carlson1, and V. Raboy2, 1University of Missouri, Columbia, 2USDA-ARS National Small Grain Germplasm Research Facility Aberdeen, ID.</td>
</tr>
<tr>
<td>123</td>
<td>Low phytate barley cultivars for growing pigs: Ca, P, and N utilization. T. L. Veum*, D. W. Bollinger1, D. R. Ledoux1, M. S. Carlson1, and V. Raboy2, 1University of Missouri, Columbia, 2USDA-ARS National Small Grain Germplasm Research Facility, Aberdeen, ID.</td>
</tr>
<tr>
<td>126</td>
<td>Iron sources and amounts fed to sows during the last trimester of gestation do not enhance the ability of piglets to sequester iron. N. J. Benevenga1, D. K. Schneider1, M. E. Glenn1, T. M. Fakler2, X. G. Luo3, and T. D. Crenshaw*, 1University of Wisconsin, Madison, 2Zinpro Corporation, Eden Prairie, MN, 3Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing China.</td>
</tr>
<tr>
<td>128</td>
<td>A comparison of swine performance when fed diets containing Roundup Ready® (event NK603) or conventional corn lines. G. Bressner1, Y. Hyun*, E. Stanisiewski2, G. Hartnell2, and M. Ellis1, 1University of Illinois at Urbana-Champaign, 2Monsanto Company, St. Louis.</td>
</tr>
<tr>
<td>130</td>
<td>Evaluation of ground corn germ as an energy source in nursery pig diets. C.W. Hastad*, M.D. Tokach, J.L. Nelssen, R.D. Goodband, and S.S. Dritz, Kansas State University, Manhattan.</td>
</tr>
<tr>
<td>131</td>
<td>Growth performance and carcass characteristics of pigs fed diets containing a corn germ-corn bran product. S. J. Kitt*, P. S. Miller, and R. L. Fischer, University of Nebraska, Lincoln.</td>
</tr>
</tbody>
</table>
Use of poultry byproduct meal as an alternate protein source in swine starter rations. C. Zier*, M. Froetschel, R. Jones, and M. Azain, University of Georgia, Athens, GA.

Evaluation of pet food by-product as an alternative feedstuff in nursery pig diets. E.A. Jablonski*, R.D. Jones, and M.J. Azain, University of Georgia, Athens, GA.

Efficacy of Luctaplus® in improving performance of conventionally and segregated early-weaned pigs fed simple or complex diets. M.E. Davis*, C.V. Maxwell1, Z.B. Johnson1, B.Z. de Rodas2, D.C. Brown1, M.L. Gibson3, and E. Roura3, 1University of Arkansas, Fayetteville, 2Land O’Lakes, Fort Dodge, IA, 3Lucta USA, Northbrook, IL.


Influence of dietary supplementation with β-mannanase on performance of finishing pigs in a commercial system. P. R. O’Quinn*, D. W. Funderburke1, C. L. Funderburke1, and R. L. James2, 1Cape Fear Consulting, LLC, Warsaw, NC, 2ChemGen Corp., Gaithersburg, MD.

Bone integrity in response to changes in dietary energy intake. B.C. Robbins*, T.D. Crenshaw1, J.F. Patience2, and R.D. Boyd3, 1University of Wisconsin, Madison, 2Prairie Swine Center, Inc. Saskatoon, SK, 3PIC, Inc. Franklin, KY.

Effectiveness of Tylan or a direct fed microbial to reduce pig variation. C.A. Elmore*, G.A. Apgar, and K.E. Griswold, Southern Illinois University, Carbondale.

Nonruminant Nutrition V

Phytase and Mineral Nutrition

Chair: Donnie Campbell, Roche Vitamins Inc., Kansas City, MO

Tuesday, 1:00 p.m. - 4:30 p.m.
Room: 204AB

<table>
<thead>
<tr>
<th>Time</th>
<th>Number</th>
<th>Paper</th>
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<tbody>
<tr>
<td>1:00</td>
<td>169</td>
<td>Effects of pharmacological concentrations of zinc oxide and phytase on zinc excretion and performance in the nursery pig. M.M. Martínez*, G.M. Hill, J.E. Link, J.G. Greene, and D.D. Driksna, Michigan State University, East Lansing, MI.</td>
</tr>
<tr>
<td>1:30</td>
<td>171</td>
<td>Effect of phytase dosage and source on growth performance of nursery pigs. B. W. James*, M. D. Tokach1, R. D. Goodband1, J. L. Nelssen1, S. S. Dritz1, and G. L. Lynch2, 1Kansas State University, Manhattan, 2BASF Corporation, Mount Olive, NJ.</td>
</tr>
</tbody>
</table>
1:45 172 Response of barrows to phytase in pelleted diets. M. C. Brumm*, University of Nebraska.

2:00 173 Phytase additions to conventional and low-phytate corn for pigs. E. G. Xavier*, G. L. Cromwell, and M. D. Lindemann, University of Kentucky.


2:30 BREAK

2:45 175 Efficacy of different phytase products for young chicks and pigs. N.R. Augspurger*, D.M. Webel, X.G. Lei, and D.H. Baker, 1University of Illinois at Urbana-Champaign, 2United Feeds, Inc. Sheridan, IN, 3Cornell University, Ithaca, NY.


3:15 177 Available phosphorus requirement for 33 to 55 kg pigs reared in commercial facilities. C. W. Hastad*, S. S. Dritz, J. L. Nelssen, M. D. Tokach, and R. D. Goodband, Kansas State University, Manhattan Kansas.

3:30 178 Effect of zinc oxide and copper sulfate interactions with sodium chloride in nursery pig diets. T.G. Wiseman* and D.C. Mahan, The Ohio State University.


Nonruminant Nutrition VI

Ractopamine

Chair: Bill Weldon, Elanco Animal Health, Greenfield, IN

Tuesday, 1:45 p.m.- 4:45 p.m.

Room: 204FG

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
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<tbody>
<tr>
<td>1:45</td>
<td>182</td>
<td>Effects of ractopamine dose and feeding duration on pig performance in a commercial finishing facility. R.G. Main*, S.S. Dritz, M.D. Tokach, R.D. Goodband, and J.L. Nelssen, Kansas State University, Manhattan.</td>
</tr>
</tbody>
</table>
2:00 183 Effect of ractopamine (Paylean®) feeding program on growth performance and carcass value. M. T. See*, T. A. Armstrong², and W. C. Weldon², ¹North Carolina State University, ²Elanco Animal Health.


2:30 185 Effects of ractopamine and carnitine in diets containing 5% fat for finishing pigs. S. A. Trapp*, B. T. Richert¹, A. P. Schinckel¹, and K. Q. Owen², ¹Purdue University, West Lafayette, IN, ²Lonza, Inc., Fair Lawn, NJ.


3:15 BREAK

3:30 188 Effects of lysine and energy density of performance and carcass traits of finishing pigs fed ractopamine. D.C. Brown*, J.K. Apple¹, C.V. Maxwell¹, K.G. Friesen¹, M.E. Davis¹, R.E. Musser², Z.B. Johnson¹, and T.A. Armstrong³, ¹University of Arkansas, ²The Pork Group, Rogers, AR, ³Elanco Animal Health, Greenfield, IN.

3:45 189 The efficacy of Paylean® (ractopamine hydrochloride) addition to late-finishing swine diets in a controlled cycling hot environment. J.D. Spencer*, C.A. Stahl¹, A.M. Gaines¹, D.C. Kendall¹, G.F Yi¹, J.W. Frank¹, E.P. Berg¹, D.J. Jones², and G.L. Allee¹, ¹University of Missouri, Columbia, ²Elanco Animal Health, Greenfield, IN.

4:00 190 Effect of ractopamine on optimum dietary phosphorus regimen for pigs. T.R. Lutz* and T.S. Stahly, Iowa State University, Ames.

4:15 191 Effect of nutritional levels while feeding ractopamine on carcass composition and growth. A. P. Schinckel*, C. T. Herr, D. C. Kendall, J. C. Forrest, and B. T. Richert, Purdue University, West Lafayette, IN.

4:30 192 Development of a swine growth model to describe the compositional growth of pigs fed ractopamine. A. P. Schinckel*, N. Li, P. V. Preckel, B. T. Richert, and M. E. Einstein, Purdue University; West Lafayette, IN.
Physiology IV

Symposium: Joint Physiology & Extension, Managing Reproduction in Beef Cattle

Chair: Twig T. Marston, Kansas State University, Manhattan

Tuesday, 1:00 p.m. – 5:00 p.m.
Room: 136

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
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<tbody>
<tr>
<td>1:00</td>
<td>213</td>
<td>INVITED A review of the estrous cycle in beef cattle: Physiology, endocrinology, and follicular waves. F. N. Kojima*, University of Missouri, Columbia.</td>
</tr>
<tr>
<td>1:30</td>
<td>214</td>
<td>INVITED Synchronization of estrus in beef heifers with mga and PGF. D.J. Kesler*, N.R. Wherley, and D.B. Faulkner, University of Illinois.</td>
</tr>
<tr>
<td>2:00</td>
<td>215</td>
<td>INVITED A review of methods to synchronize estrous cycles of postpartum suckled beef cows with the oral progestin, melengestrol acetate. D. J. Patterson*, University of Missouri, Columbia.</td>
</tr>
<tr>
<td>3:00</td>
<td>217</td>
<td>INVITED Incidence of postpartum anestrus in suckled beef cattle: Treatments to induce estrus, ovulation and conception. J.S. Stevenson* and S.K. Johnson, Kansas State University.</td>
</tr>
<tr>
<td>4:00</td>
<td>219</td>
<td>INVITED Factors affecting fertilization in estrus-synchronized cattle. R. G. Saacke*, Virginia Polytechnic Institute and State University.</td>
</tr>
<tr>
<td>4:45</td>
<td>221</td>
<td>Synchronization of Ovulation in Suckled Beef Cows with GnRH-CIDR-PGF and Timed Insemination at 48 or 60 h after PGF&lt;sub&gt;2α&lt;/sub&gt;. S.K. Johnson*, K.R. Harmany, and J.S. Stevenson, Kansas State University.</td>
</tr>
</tbody>
</table>
Ruminant Nutrition and Forages III

Symposium: Current and Future Hybrid Selection for Optimal Feeding Value of Corn Silage

Chair: Arnold Hippen, South Dakota State University, Brookings

Tuesday, 1:00 p.m. – 2:45 p.m.
Room: 205IJ

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
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<tbody>
<tr>
<td>1:00</td>
<td>270</td>
<td>INVITED Corn silage use in beef cattle growing and finishing diets: hybrid selection and economics. S.R. Rust*, J.R. Black, and D.D. Buskirk, Michigan State University.</td>
</tr>
<tr>
<td>2:20</td>
<td></td>
<td>DISCUSSION</td>
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</tbody>
</table>

Ruminant Nutrition and Forages IV

Dairy Cattle

Chair: Arnold Hippen, South Dakota State University, Brookings

Tuesday, 3:00 p.m. – 4:30 p.m.
Room: 205IJ

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
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<tbody>
<tr>
<td>3:00</td>
<td>272</td>
<td>Lactation performance by dairy cows fed wet brewers grains (WBG) or whole linted cottonseed (WCS) to replace forage. J. L. Firkins*, D. I. Harvatine, J. T. Sylvester, and M. L. Eastridge, Ohio State University, Columbus.</td>
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<tr>
<td>Time</td>
<td>Abstract Number</td>
<td>Paper</td>
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<tr>
<td>3:00</td>
<td>278</td>
<td>Effect of feeding time and sprinkling on performance and body temperature of steers. M.S. Davis* and T.L. Mader, University of Nebraska.</td>
</tr>
<tr>
<td>3:15</td>
<td>279</td>
<td>Type of corn bran and corn processing method in beef finishing diets. C. N. Macken*¹, T. J. Klopfenstein¹, G. E. Erickson¹, and R. A. Stock², ¹University of Nebraska-Lincoln, ²Cargill Inc., Blair, NE.</td>
</tr>
<tr>
<td>3:30</td>
<td>280</td>
<td>Effects of growth promotants on feedlot heifers fed in winter vs. summer. W.M. Kreikemeier* and T.L. Mader, University of Nebraska-Lincoln.</td>
</tr>
<tr>
<td>3:45</td>
<td>281</td>
<td>Effects of supplemental energy source on utilization of corn silage by beef steers. C. M. Howlett*, E. S. Vanzant, B. G. Fieser, and K. B. Combs, University of Kentucky.</td>
</tr>
<tr>
<td>4:00</td>
<td>282</td>
<td>Influence of fish oil addition to finishing diets on carcass characteristics, immune function, and growth performance of cattle. T. J. Wistuba*, E. B. Kegley, and J. K. Apple, University of Arkansas, Fayetteville.</td>
</tr>
<tr>
<td>4:15</td>
<td>283</td>
<td>Ruminal fermentation characteristics and duodenal amino acid flows in beef cattle fed varying levels of bloodmeal. J.W. Lehmkuhler*¹, E.E.D. Felton², C.J. Fu², and M.S. Kerley², ¹University of Wisconsin, ²University of Missouri.</td>
</tr>
<tr>
<td>4:30</td>
<td>284</td>
<td>Effect of an inoculant extender on the pH decline of liquid applied silage inoculant and terminal silage pH. J. S. White*¹, K. Katzung², and N. Prescher³, ¹Silage Solutions, Sioux Center, IA, ²Northland Farm Systems, Owatonna, MN, ³AgScience, Sioux Falls, SD.</td>
</tr>
<tr>
<td>4:45</td>
<td>285</td>
<td>Effect of cutting height and genetics on intake and digestibility of corn silage. L. R. Kennington*¹, C. W. Hunt¹, J. I. Szasz¹, A. V. Grove¹, and W. Kezar², ¹University of Idaho, Moscow, ²Pioneer Hi-Bred International, Johnston, Iowa.</td>
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</table>
Breeding and Genetics IV

Applied Animal Breeding

Chair: Jack Dekkers, Iowa State University, Ames

Wednesday, 9:00 a.m. – 10:30 a.m.
Room: 205E

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>39</td>
<td>Birth weight, calving ease, and other factors affecting perinatal mortality in Holstein cattle. J. M. Johanson* and P. J. Berger, Iowa State University, Ames.</td>
</tr>
<tr>
<td>9:15</td>
<td>40</td>
<td>Differences in performance between growing pigs fed using electronic versus commercial feeders. D.S. Casey* and J.C.M. Dekkers, Iowa State University, Ames.</td>
</tr>
<tr>
<td>9:45</td>
<td>42</td>
<td>Fertility of intra-uterine vs. intra-cervical insemination of semen in swine. T Gall*, Pork Technologies, Danville, IA.</td>
</tr>
<tr>
<td>10:00</td>
<td>43</td>
<td>Growth and puberty traits of topcross heifer progeny of Hereford, Angus, Red Angus, Simmental, Gelbvieh, Limousin, and Charolais sires. L. V. Cundiff*1,2, L. D. Van Vleck1,3, and R. M. Thallman1,2, 1USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center, 2Clay Center, NE, 3Lincoln, NE.</td>
</tr>
<tr>
<td>10:15</td>
<td>44</td>
<td>Economic analysis of selection response in the NE Index line estimated in pure line and crossbred litters. D. Petry*, B. McAllister, and R. Johnson, University of Nebraska, Lincoln.</td>
</tr>
</tbody>
</table>
Extension IV

Non-Ruminant Nutrition and Management

Chair: Bob Thaler, South Dakota State University, Brookings

Wednesday, 9:00 a.m. – 9:45 a.m.
Room: 134

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract Number</th>
<th>Paper</th>
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<tr>
<td>9:00</td>
<td>67</td>
<td>Effects on growth and carcass traits of feeding PAYLEAN# at 18 g per ton to F1 and 3-way cross pigs of the NE Index Line. D. Petry*, R. Johnson, R. Fischer, and P. Miller, (^1)University of Nebraska, Lincoln.</td>
</tr>
<tr>
<td>9:15</td>
<td>68</td>
<td><strong>National Pork Board Innovation Award - Teaching</strong> Use of a hands-on workshop to teach swine reproductive management to farrowing barn workers. J. A. Sterle*(^1) and L. J. Johnston(^2), (^1)Texas A&amp;M University, College Station, (^2)University of Minnesota West Central Research and Outreach Center, Morris.</td>
</tr>
</tbody>
</table>

EXTENSION V

Do We Need to Feed Dairy Cows Ad Libitum?

Chair: Sharon Franklin, University of Kentucky, Lexington

Wednesday, 9:00 a.m. - 10:30 a.m.
Room: 136

9:00 INVITED Controlling Feed Intake by Dairy Cattle: Potential Benefits Based on Research With Beef Cattle. S. C. Loerch, The Ohio State University, Columbus.


10:00 DISCUSSION
Growth, Development, Muscle Biology, and Meat Science IV

Growth and Development

Chair: Steven Lonergan, Iowa State University, Ames

Wednesday, 9:00 a.m. – 10:30 a.m.
Room: 204C

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>9:00</td>
<td>103</td>
<td>The effect of feeding ractopamine on growth and carcass traits in three genetic lines of pigs. T. J. Baas*¹, S. J. Moeller², C. D. Johnson¹, H. Zerby², G. M. Stoller², and L. E. Watkins³, ¹Iowa State University, ²The Ohio State University, ³Elanco Animal Health.</td>
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<tr>
<td>9:30</td>
<td>105</td>
<td><strong>National Pork Board Innovation Award – Research</strong> Protein accretion in pigs infected with Mycoplasma hyopneumoniae and Porcine Reproductive and Respiratory Syndrome Virus. J. Escobar*¹, T.L. Toepfer¹, W.G. Van Alstine², D.H. Baker¹, and R.W. Johnson¹, ¹University of Illinois, Urbana, ²Purdue University, W. Lafayette, IN.</td>
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<tr>
<td>9:45</td>
<td>106</td>
<td>The use of nonlinear mixed models for swine growth. A. P. Schinckel* and B. A. Craig, Purdue University, West Lafayette, IN.</td>
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<tr>
<td>10:00</td>
<td>107</td>
<td>Evaluation of biases in predicting fat-free lean mass of pigs fed ractopamine. A. P. Schinckel*, C. T. Herr, J. C. Forrest, B. T. Richert, and M. E. Einstein, Purdue University; West Lafayette, IN.</td>
</tr>
<tr>
<td>10:15</td>
<td>108</td>
<td>Effect of post-weaning growth rate, as affected by diet and floor space, on pig growth to slaughter in a wean-to-finish system. B. F. Wolter*¹, M. Ellis¹, S. E. Curtis³, B. P. Corrigan¹, J. M. DeDecker¹, E. N. Parr², and D. M. Webel³, ¹University of Illinois, Urbana, ²United Feeds, Sheridan, IN.</td>
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## Nonruminant Nutrition VII

**Symposium: Breeding Herd Nutrition and Management**

Sponsored by: Zinpro Corporation

Chair: Terry Ward, Zinpro Corp., Eden Prairie, MN

Wednesday, 9:00 a.m. - Noon
Room: 204FG

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>9:00</td>
<td></td>
<td>INTRODUCTION</td>
</tr>
<tr>
<td>9:05</td>
<td>193</td>
<td>INVITED Managing the gilt for maximum lifetime production. G. R. Foxcroft*, J. Patterson, H. Willis, and F. Aherne, Swine Research and Technology Centre, Edmonton, Alberta, Canada.</td>
</tr>
<tr>
<td>9:35</td>
<td>194</td>
<td>INVITED Relationship of protein and amino acid nutrition to reproduction in sows. R.D. Boyd*, M.E. Johnston, and R.A. Cabrera, PIC USA, Inc. Franklin, KY.</td>
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<tr>
<td>10:00</td>
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<td>BREAK</td>
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<tr>
<td>10:15</td>
<td>195</td>
<td>INVITED Relationship of carbohydrate and lipid nutrition to reproduction in sows. Bas Kemp*¹ and Henry Van den Brand¹, ¹Wageningen University, Wageningen, The Netherlands.</td>
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<tr>
<td>10:40</td>
<td>196</td>
<td>INVITED Feeding and managing the boar for optimal reproductive capacity. M. E. Wilson*, Minitube of America, Inc.</td>
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<tr>
<td>11:05</td>
<td>197</td>
<td>INVITED Feeding management of the breeding herd: A systems approach. D. S. Pollmann*, Murphy Farms, LLC, Ames, IA.</td>
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<tr>
<td>11:35</td>
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<td>DISCUSSION</td>
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# Ruminant Nutrition and Forages VI

## Digestion/Metabolism

Chair: Jeff Firkins, The Ohio State University, Columbus

Wednesday, 9:00 a.m. – 10:30 a.m.
Room: 205IJ

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>9:00</td>
<td>286</td>
<td>Degradability of crude protein and nonstructural carbohydrate in selected feeds and grain mixes. D.P. Casper*1,2, M.J. Brouk3, and D.J. Schingoethe3, 1Agri-King, Inc., Fulton, IL, 2USDA-ARS, Beltsville, MD, 3South Dakota State University, Brookings.</td>
</tr>
<tr>
<td>9:15</td>
<td>287</td>
<td>The effects of volatile fatty acid on acid-resistance of cattle fecal E. coli and E. coli O157:H7. C. J. Fu*1, J. H. Porter1, E. E. D. Felton1, J. W. Lehmkuhler2, and M. S. Kerley1, 1University of Missouri-Columbia, 2University of Wisconsin-Madison.</td>
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Committee Assignments
2001-2002

Program Committees

Animal Behavior, Housing, & Well-Being
Jeff Carroll, Chair
Mike Ellis
Susan Eicher

Breeding & Genetics
Cathy Ernst, Chair
Jack Dekkers

Extension
John Smith, Chair
Dan Faulkner
Bob Thaler

Growth, Development, Muscle Biology, and Meat Science
Steven Jones, Chair
Steven Lonergan
Jeff Carter

Nonruminant Nutrition
Phil Miller, Chair
Terry Ward
Merlin Lindemann

Odor and Nutrient Management
Wendy Powers, Chair
Steve Moeller
Bob Kraeling

Physiology
Dave Miller, Chair
Jeff Vallet
Andrea Cupp
Ruminant Nutrition & Forages
Todd Milton, Chair
Jeff Firkins
Arnold Hippen

Teaching
Robert Harrold, Chair
Don Marshall
Karol Fike

Award Committees

Extension Award
Alan Sutton, Chair
Normand St. Pierre
Jim Barmore
John Smith
Tim Johnson
Mike Tokach

Research Award
Sharon Franklin, Chair
Rodney Johnson
Mike White
David Weakley
Matthew Lucy
Chris Tuggle

Teaching
Maurice Eastridge, Chair
Jim Spain
Keith Irvin
Matthew Doumit
Steve Lonergan
Dennis Brink

Agribusiness Award
Aubrey Schroeder, Chair
Ed Lanka
Deanna Hancock
Dale Rozeboom
Janet Lynch
Mike Day

**National Pork Board Swine Innovation Award**
Mike Day, Chair
Brian Richert
Jack Dekkers
Joe Ford
Gary Allee
Don Levis

**Innovation in Dairy Research Award**
Maurice Eastridge, Chair
Louis Sheffield
Jim Drackley
Leo Timms
Jim Linn
Cindy Luhman

**Special Committees**

**ASAS Nominations**
Michael Day, Chair
James Males
Stephen Ford

**ADSA Nominations**
Maurice Eastridge, Chair
Rick Grant
Randy Shaver

**Student Career & Placement**
David Fischer, Chair
Alan Sutton
Aubrey Schroeder
Alan Grant

**Academic Quadrathlon**
Brad Johnson, Chair
Miriam Weber
Howard Tyler
Steven Kelm
Leo Timms
Elizabeth Huff-Lonergan
Jess Miner
Eric Berg

Competitive Research Paper Committees

Graduate Student
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Tim Safranski
Jerry Spears
Steve Loerch
Wes Osburn
Ron Bates
Diane Moody

Undergraduate Student
Greg Lardy
Evan Titgemeyer
Julie Galvin
Marc Bauer
Thomas Socha
Mark Dickman
Kathy Anderson
PAST RECIPIENTS OF AWARDS FOR YOUNG ANIMAL SCIENCE LEADERS

OUTSTANDING EXTENSION SPECIALIST AWARD

1971  G. E. Ricketts, University of Illinois
1972  V. B. Mayrose, Purdue University
1974  M. R. Geasler, Iowa State University
1976  R. J. Vatthauer, University of Wisconsin
1977  R. J. Epley, University of Minnesota
1978  W. L. Singleton, Purdue University
1979  D. E. Schafer, Kansas State University
1980  L. R. Corah, Kansas State University
1981  M. G. Hogberg, Michigan State University
1982  C. W. Spaeth, Kansas State University
1983  L. H. Thompson, University of Illinois
1984  M. F. Hutjens, University of Illinois
1985  G. L. Kuhl, Kansas State University
1986  D. D. Simms, Kansas State University
1987  F. K. Brazle, Kansas State University
1988  S. B. Laudert, Kansas State University
1989  M. A. Russell, Purdue University
1990  D. F. Parrett, University of Illinois
1991  D. B. Faulkner, University of Illinois
1992  J. L. Nelssen, Kansas State University
1993  A. P. Schinckel, Purdue University
1994  D. A. Funk, University of Wisconsin, Madison
1995  G. C. Shurson, University of Minnesota
1996  R. D. Shaver, University of Wisconsin, Madison
1997  R. D. Goodband, Kansas State University
1998  Not given
1999  M. D. Tokach, Kansas State University
2000  J. F. Smith, Kansas State University
2001  W. O. Herring, University of Missouri

OUTSTANDING RESEARCHER AWARD

1971  D. H. Baker, University of Illinois
1972  C. E. Allen, University of Minnesota
1974    F. N. Owens, University of Illinois
1976    W. G. Bergen, Michigan State University
1977    D. E. Bauman, University of Illinois
1978    G. L. Allee, Kansas State University
1979    S. E. Curtis, University of Illinois
1980    T. L. Veum, University of Missouri
1982    B. D. Schanbacher, Roman L. Hruska U.S. Meat Animal Research Center
1983    H. A. Garverick, University of Missouri
1984    G. C. Fahey, Jr., University of Illinois
1985    J. J. Ford, Roman L. Hruska U.S. Meat Animal Research Center
1986    C. L. Ferrell, Roman L. Hruska U.S. Meat Animal Research Center
1987    D. Gianola, University of Illinois
1988    S. P. Ford, Iowa State University
1989    L. L. Berger, University of Illinois
1990    M. F. Rothschild, Iowa State University
1991    M. F. Smith, University of Missouri
1992    D. L. Harmon, Kansas State University
1993    M. Koohmaraie, Roman L. Hruska, U.S. Meat Animal Research Center
1994    L. G. Sheffield, University of Wisconsin, Madison
1995    J. Odle, University of Illinois
1996    J. L. Nelssen, Kansas State University
1997    R. S. Prather, University of Missouri
1998    D. Pomp, University of Nebraska
1999    R. W. Johnson, University of Illinois
2000    M. C. Lucy, University of Missouri
2001    C. K. Tuggle, Iowa State University

OUTSTANDING TEACHER AWARD

1971    B. G. Harmon, University of Illinois
1972    R. E. Hunsley, Purdue University
1974    D. H. Gee, South Dakota State University
1976    T. R. Cline, Purdue University
1977    P. J. Cunningham, University of Nebraska
1978    B. D. Moser, University of Nebraska
1979    C. L. Hausler, Southern Illinois University
1980    T. R. Carr, University of Illinois
1981    M. E. Dikeman, Kansas State University

57
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<tr>
<th>Year</th>
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<tr>
<td>1982</td>
<td>R. E. Morrow</td>
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**AGRIBUSINESS AWARD**

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<td>J. A. Barmore</td>
<td>Vita Plus Corp., Madison, Wisconsin</td>
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<td>D. E. Dill</td>
<td>Dairy Strategies, Mendota Heights, MN</td>
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<td>C. M. Luhman</td>
<td>Land O’lakes Research Farm, Webster City, IA</td>
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**PAST WINNERS OF INVITATIONAL COMPETITIVE RESEARCH PAPER AWARDS**

**UNDERGRADUATE STUDENTS**

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<td>M. E. Cunningham</td>
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<td>T. G. McDaneld</td>
<td>University of Nebraska</td>
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PAST WINNERS OF UNDERGRADUATE CONTEMPORARY ISSUES COMPETITION

1998  M. Bode, University of Missouri
      D. Hasekamp, University of Missouri
      J. Rumph, Michigan State University
      M. Schoenfield, University of Minnesota

1999  L. Becker, University of Minnesota

2000  R. Hawkins, North Dakota State University

2001  Discontinued

ASAS MIDWESTERN SECTION PRESIDENTS

1963  O. G. Bentley, Illinois

1964-65  R. H. Grummer, Wisconsin

1966-67  G. R. Johnson, Ohio State

1968  R. J. Meade, Minnesota

1969  J. A. Hoefer, Michigan State

1970-71  W. E. Dinusson, North Dakota State

1972  J. F. Lasley, Missouri


1974-75  V. C. Speer, Iowa State

1976  H. S. Teague, Ohio State

1977  R. M. Luther, South Dakota State

1978  B. N. Day, Missouri

1979-80  D. R. Zimmerman, Nebraska

1981  A. L. Pope, Wisconsin

1982  R. D. Goodrich, Minnesota

1983  E. R. Miller, Michigan State

1984  W. R. Woods, Purdue

1985  L. R. Corah, Kansas State

1986  B. D. Moser, Missouri

1987  S. E. Curtis, Illinois

1988  R. G. Zimbelman, Upjohn; D. J. Meisinger, Indiana

1989  T. J. Klopfenstein, Nebraska

1990  J. R. Romans, South Dakota State

1991  J. E. Pettigrew, Minnesota
1992  C. E. Sasse, Cenex/Land O’Lakes
1993  M. G. Hogberg, Michigan State
1994  G. L. Allee, Missouri
1995  S. K. Webel, Purina Mills, Bloomington, IL
1996  D. L. Meeker, National Pork Producers Council, Des Moines, IA
1997  T. S. Stahly, Iowa State
1998  R. P. Lemenager, Purdue
1999  S. P. Ford, Iowa State
2000  J. R. Males, Oregon State
2001  M. L. Day, The Ohio State University

**ADSA MIDWEST BRANCH PRESIDENTS**

1992  J. F. Keown, Nebraska
1993  J. G. Linn, Minnesota
1994  D. J. Schingoethe, South Dakota
1995  J. L. Morrill, Kansas
1996  M. F. Hutjens, Illinois
1997  M. A. Faust, Iowa State
1999  R. D. Shaver, Wisconsin
2000  R. J. Grant, Nebraska
2001  M. L. Eastridge, The Ohio State University

**FUTURE MEETINGS**

- 2003  March 17–19
- 2004  March 15–17
- 2005  March 21–23
# Room Assignments

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<tr>
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<td>204FG</td>
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  Biology, And Meat Science III  204C
Nonruminant Nutrition IV    Exhibit Hall, Room 206
Nonruminant Nutrition V 204AB
Nonruminant Nutrition VI 204FG
Physiology IV 136
Ruminant Nutrition and Forages III 205IJ
Ruminant Nutrition and Forages IV 205IJ
Ruminant Nutrition and Forages V 205D

Wednesday AM
ADSA/ASAS Breakfast/Awards/
  Business Meeting  Exhibit Hall, Room 206
Breeding and Genetics IV 205E
Extension IV 134
Extension V 136
Growth, Development, Muscle
  Biology, and Meat Science IV 204C
Nonruminant Nutrition VII 204FG
Ruminant Nutrition VI 205IJ