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## **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

	<b>Before March 1</b>	<b>After March 1</b>
ADSA/ASAS Members	\$100	\$150
Undergraduate Students	\$10	\$10
Graduate Student Members	\$20	\$30
Post Doctoral Fellows	\$20	\$30
ASAS-ADSA Fellows	\$0	\$0
Nonmembers	***\$210	\$235
Graduate Student Nonmembers	***40	\$50

\*\*\*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 Quadrathlon 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**

Danbred USA

PIC

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# 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

Time	Abstract Number	Paper
1:30	109	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.
1:45	110	Effect of added soybean oil or full-fat canola meal on sow and litter performance. B.S. Zimprich*, T.E. Socha, and R.L. Harrold, North Dakota State University.
2:00	111	Effects of dietary L-carnitine and chromium picolinate on sow reproductive performance. D. E. Real* <sup>1</sup> , J. L. Nelssen <sup>1</sup> , M. D. Tokach <sup>1</sup> , R. D. Goodband <sup>1</sup> , S. S. Dritz <sup>1</sup> , and K. Q. Owen <sup>2</sup> , <sup>1</sup> Kansas State University, Manhattan, <sup>2</sup> Lonza Inc., Fairlawn, NJ.
2:15	112	A regional evaluation of chromium tripicolinate supplementation in sows. M. D. Lindemann*, S. D. Carter, L. I. Chiba, C. R. Dove, and L. L. Southern, S-288 Regional Research Committee on Nutrition and Management of Swine for Increased Reproduction.
2:30		BREAK
2:45	113	Comparison of International Protein Corporation 740 and Super Select™ Menhaden fish meals in nursery pig diets. M. G. Young*, M. D. Tokach, R. D. Goodband, J. L. Nelssen, S. S. Dritz, and M. Cici <sup>1</sup> , Kansas State University, Manhattan, <sup>1</sup> International Protein Corporation, St. Paul, MN.
3:00	114	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 <sup>1</sup> , Kansas State University, Manhattan Kansas, <sup>1</sup> Exseed Genetics L.L.C. Owensboro, Kentucky.
3:15	115	Effect of pellet hardness on growth performance of weaned pigs. I. Mavromichalis* <sup>1</sup> , D. R. Cook <sup>2</sup> , M. M. Ward <sup>2</sup> , and N. D. Paton <sup>2</sup> , <sup>1</sup> SCA Nutrition USA, Marion IA, <sup>2</sup> Akey, Inc., Lewisburg OH.

- 3:30 116 Effects of soybean meal particle size on growth performance of nursery pigs. K. R. Lawrence, C. W. Hastad, R. D. Goodband, M. D. Tokach, J. L. Nelssen, S. S. Dritz, and M. J. Webster, Kansas State University, Manhattan, KS.
- 3:45 117 Impact of stocking density/group size on the response to changes in dietary energy content by weanling pigs from 25 to 53 days of age. C.L. Levesque<sup>1,2</sup>, J.F. Patience\*<sup>1</sup>, E. Beltranena<sup>1</sup>, and R.T. Zijlstra<sup>1</sup>, <sup>1</sup>Prairie Swine Centre Inc., <sup>2</sup>University of Saskatchewan, Saskatoon, SK, Canada.
- 4:00 118 Effects of sorting and penning pigs by BW vs. mixing pigs of different BW on post weaning growth performance. D. R. Cook, M. M. Ward, and N. D. Paton\*, Akey Inc. Lewisburg, OH.
- 4:15 119 Response of weaned pigs to increasing lysine:digestible energy ratio. T. F. Oresanya\*<sup>1,2</sup>, J. F. Patience<sup>1</sup>, and A. D. Beaulieu<sup>1</sup>, <sup>1</sup>Prairie Swine Centre, Inc., Saskatoon, Canada, <sup>2</sup>University of Saskatchewan, Saskatoon, Canada.
- 4:30 120 Defining the tolerable level of ergot in weanling pig diets. T. F. Oresanya<sup>1,2</sup>, J. F. Patience<sup>1</sup>, R. T. Zijlstra<sup>1</sup>, D. M. Middleton<sup>2</sup>, B. R. Blakley<sup>2</sup>, A. D. Beaulieu\*<sup>1</sup>, and D. A. Gillis<sup>1</sup>, <sup>1</sup>Prairie Swine Centre, Inc., Saskatoon, Canada, <sup>2</sup>University of Saskatchewan, Saskatoon, Canada.

## **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](http://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

Time	Abstract Number	Paper
2:30	293	Development of a multiplex microsatellite marker panel for whole genome scans in sheep. B. Mote* <sup>1</sup> and B. Freking <sup>2</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2</sup> USDA, ARS, U.S. Meat Animal Research Center.
2:45	294	Flocculation of swine manure: influence of flocculant, rate of addition, and diet. L. Flatow*. <sup>1</sup> and W. Powers, Iowa State University.
3:00	295	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.
3:15	296	Selected fractionate digestibility coefficients of an extruded mixture containing whole soybeans and separated slurry solids. P Walker, D Finnigan*, J Dust, and R Knight, Illinois State University, Normal.
3:30	297	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.
3:45	298	Mapping of the <i>HMG-I</i> gene family in the pig. N. Nguyen*, K. Kim, Y. Zhang, and M. F. Rothschild, Iowa State University, Ames Iowa.
4:00		BREAK
4:15	299	Fish oil, conjugated linoleic acid, and body fat deposition. B. J. Meyer*, K. M. Hargrave, and J. L. Miner, University of Nebraska.
4:30	300	Identification of genes regulated by zinc supplementation of weaned pigs. M.A. Closs*, C.P. Wilkinson, N.E. Raney, G.M. Hill, J.E. Link, M.M. Martínez, K.M. Hargrave, and C.W. Ernst, Michigan State Univeristy, East Lansing.
4:45	301	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.
5:00	302	Reed-sedge peat as a feed additive for dairy cows. P. W. Clark and G. L. Golombeski*, U. W.- River Falls.
5:15	303	A comparison of different particle size analysis techniques. A.L. Baldrige*, T.L. Stainbrook, J.C. Woodworth, M.D. Tokach, J.L. Nelsens, R.D. Goodband, and S.S. Dritz, Kansas State University, Manhattan.
5:30	304	Effect of ruminal protein degradability and supplementation frequency on intake, diet digestibility, and nitrogen balance in forage-fed lambs. D. E. Carter*, P. A. Ludden, V. Nayigihugu, and B. W. Hess, University of Wyoming.
5:45	305	Effects of harvest date and late-summer fertilization rate on dry matter yield and chemical composition of stockpiled bermudagrass forage. A.A. Gelvin* <sup>1</sup> , D.L. Lalman <sup>1</sup> , C.F. Taliaferro <sup>1</sup> , and J. Ball <sup>2</sup> , <sup>1</sup> Oklahoma Agricultural Experiment Station, <sup>2</sup> Noble Foundation, Ardmore, OK.

# Animal Behavior, Housing, and Well-Being I

## Swine Management

Chair: Don Spiers, University of Missouri, Columbia

Tuesday, 10:15 a.m. – Noon

Room: 205D

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
10:15	1	The effects of exogenous ACTH on the growth performance, fat distribution and organ weights of growing pigs. R. Morrison* <sup>1</sup> , P. Hemsworth <sup>2</sup> , G. Cronin <sup>2</sup> , and R. Campbell <sup>3</sup> , <sup>1</sup> University of Minnesota, MN, <sup>2</sup> Victorian Institute of Animal Science, Werribee, Australia, <sup>3</sup> United Feeds, Sheridan, IN.
10:30	2	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.
10:45	3	Boar Teasing Methods: Time to Mount and Semen Characteristics. K.A. Fischer* <sup>1</sup> , T.J. Safranski <sup>1</sup> , and S.L. Terlouw <sup>2</sup> , <sup>1</sup> University of Missouri, Columbia, <sup>2</sup> Premium Standard Farms, Princeton, MO.
11:00		BREAK

## Environmental and Nutritional Influences

11:15	4	Accounting for wind speed and solar radiation in the temperature-humidity index. M.S. Davis* and T.L. Mader, University of Nebraska.
11:30	5	Behavioral responses of foals subjected to short term maternal separations. J. Bohm*, M. Leavitt, and A. Zanella, Michigan State University, East Lansing.
11:45	6	Immunomodulation by oral supplementation of ascorbic acid and beta-glucan to transported dairy calves. S.D. Eicher* <sup>1</sup> and T.R. Johnson <sup>2</sup> , <sup>1</sup> USDA-ARS, West Lafayette, IN., <sup>2</sup> Purdue University, West Lafayette, IN.

# 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

Time	Abstract Number	Paper
8:00	11	INVITED Development of EST sequence data and map locations for genes expressed in major female reproductive tissues. C.K. Tuggle* <sup>1</sup> , J.A. Green <sup>2</sup> , C. Fitzsimmons <sup>1</sup> , R. Woods <sup>2</sup> , R.S. Prather <sup>2</sup> , S. Malchenko <sup>3</sup> , M.B. Soares <sup>3</sup> , C.A. Roberts <sup>3</sup> , K. Pedretti <sup>3</sup> , T. Casavant <sup>3</sup> , D. Pomp <sup>4</sup> , A. R. Caetano <sup>4</sup> , J. B. Edeal <sup>4</sup> , S. Olberging <sup>4</sup> , Y. D. Zhang <sup>1</sup> , M. F. Rothschild <sup>1</sup> , K. Garwood <sup>5</sup> , and W. Beavis <sup>5</sup> , <sup>1</sup> Iowa State University, Ames, <sup>2</sup> University of Missouri, Columbia, <sup>3</sup> University of Iowa, Iowa City, <sup>4</sup> University of Nebraska, Lincoln and <sup>5</sup> National Center for Genomic Resources, Sante Fe, NM.
8:30	12	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.
8:45	13	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* <sup>1</sup> , M.E. Davis <sup>2</sup> , K. Kizilkaya <sup>1</sup> , R.J. Tempelman <sup>1</sup> , and C.W. Ernst <sup>1</sup> , <sup>1</sup> Michigan State University, East Lansing, <sup>2</sup> The Ohio State University, Columbus.
9:00	14	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.
9:15	15	Comparison of statistical methods to study microarray data. S. Rodriguez-Zas*, University of Illinois at Urbana-Champaign.
9:30		BREAK
10:00	16	INVITED Measurement error in detecting quantitative trait loci with genetic markers. G. J. M. Rosa* <sup>1</sup> , B. S. Yandell <sup>2</sup> , and D. Gianola <sup>2</sup> , <sup>1</sup> Michigan State University, East Lansing, <sup>2</sup> University of Wisconsin, Madison.
10:30	17	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.
10:45	18	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.
11:00	19	Tests of candidate genes in QTL mapping populations. H. H. Zhao*, J. C. M. Dekkers, and M. F. Rothschild, Iowa State University, Ames.
11:15	20	Effect of using approximate gametic variance covariance matrices on marker assisted selection by BLUP. L.R. Totir*, R.L. Fernando, and J.C.M. Dekkers, Iowa State University, Ames.

# 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. Sutter <sup>1</sup> and R. D. Shaver* <sup>2</sup> , <sup>1</sup> Brown County Extension, UW Extension, <sup>2</sup> Department 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* <sup>1</sup> , J. Keuning <sup>2</sup> , and R. D. Shaver <sup>3</sup> , <sup>1</sup> Fond du Lac County Extension, UW Extension, <sup>2</sup> Kewaunee County Extension, UW Extension, <sup>3</sup> Department of Dairy Science, UW Madison, UW Extension.
47	The effect of antibiotic residues in raw milk on yogurt manufacture. P.N. Dias* <sup>1</sup> , D.W. Kellogg <sup>1</sup> , K.F.S.T. Silva <sup>2</sup> , and S. Dureiratnam <sup>3</sup> , <sup>1</sup> University of Arkansas, Fayetteville, <sup>2</sup> University of Peradeniya, Sri Lanka, <sup>3</sup> Milk Industries of Lanka Co., Ltd., Sri Lanka.
48	Comparison of Bermudagrass and Caucasian Bluestem in a Dairy Grazing System. C.W. Davis, S.A. Hamilton*, T.R. Rickard, G.J. Bishop-Hurley, B.J. Steevens, and R.J. Crawford, Jr., University of Missouri Outreach and Extension.
49	Changing photoperiod improves persistency in high producing Holstein cows. P. A. Porter* and C. M. Luhman, Land O'Lakes, Webster City, Iowa.
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.
51	A survey of replacement heifer mineral feeding practices on Wisconsin dairy operations. D.L. Zygarlicke* and P.C. Hoffman, University of Wisconsin-Madison.
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* <sup>1</sup> , D. Kuehnel <sup>2</sup> , S. Hayes <sup>2</sup> , and P. Hoffman <sup>3</sup> , <sup>1</sup> Animix, Juneau, WI, <sup>2</sup> Milk Products, Chilton, WI, <sup>3</sup> University 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

- 54 NDSU BeefSim: A Decision Support System for Cow/Calf Production Management. Pabitra Dash\* and Thomas Socha, North Dakota State University.
- 55 Factors affecting purchase prices of centrally-tested, yearling bulls from 1997 to 2000. T.T. Marston\*<sup>1</sup>, D.W. Moser<sup>1</sup>, J.F. Gleghorn<sup>2</sup>, and L.E. Wankel<sup>1</sup>, <sup>1</sup>Kansas State University, Manhattan, <sup>2</sup>Texas 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. Bandyk<sup>1</sup>, D.A. Blasi\*<sup>2</sup>, and M.H. Hogan<sup>3</sup>, <sup>1</sup>Trails End Farm Consulting & Software, Mineral Point, WI, <sup>2</sup>Kansas State University, Manhattan, KS, <sup>3</sup>SDK 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.
8:15	59	Effect of folic acid in calf milk replacer on performance and scouring of calves. T. E. Johnson*, H. B. Perry, D. C. Hammell, M. A. Fowler, and B. L. Miller, Land O'Lakes, Webster City, Iowa.
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

Replacer. H. B. Perry\*<sup>1</sup>, T. E. Johnson<sup>1</sup>, D. C. Hammell<sup>1</sup>, M. A. Fowler<sup>1</sup>, and B. L. Miller<sup>1</sup>, <sup>1</sup>Land O'Lakes, Webster City, Iowa, Pharmacia & Upjohn, Kalamazoo, Michigan.

9:00	62	Evaluation of Sea-Questra-Min Zinc fed in an All Milk Calf Milk Replacer. D. C. Hammell*, T. E. Johnson, H. B. Perry, M. A. Fowler, and B. L. Miller, Land O'Lakes, Webster City, Iowa.
9:15	63	The importance of the level of fat in an accelerated feeding program. M. L. O'Brien*, K. J. Touchette, and J.A. Coalson, Merrick's Inc. Union Center, WI.
9:30	64	Effects of feeding supplemental fats in calf milk replacers during periods of cold stress on intake, growth and health of dairy calves. K.J. Touchette*, M.L. O'Brien, and J. A. Coalson, Merrick's Inc. Union Center, WI.
9:45	65	Effects of increased energy and protein intake on growth rates, skeletal growth and body composition of Holstein heifer calves less than four months of age. E.G. Brown*, M.J. VandeHaar, K.M. Daniels, and M.S. Weber Nielsen, Michigan State University, East Lansing, MI.
10:00	66	Transport of colostral macromolecules into the cerebrospinal fluid via plasma in newborn calves. M.J.R. Talukder, T. Takeuchi, and E. Harada, Yamaguchi University.

## **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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
8:00	70	Wet corn gluten feed and CP for steam flaked corn-based finishing diets. H. C. Block* <sup>1</sup> , C. N. Macken <sup>1</sup> , T. J. Klopfenstein <sup>1</sup> , R. J. Cooper <sup>2</sup> , and R. A. Stock <sup>2</sup> , <sup>1</sup> University of Nebraska - Lincoln, <sup>2</sup> Cargill.
8:15	71	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.
8:30	72	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.
8:45	73	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

K.Q. Owen<sup>1</sup>, Kansas State University, Manhattan, <sup>1</sup>Lonza, Inc., Fair Lawn, NJ.

9:00		BREAK
9:15	74	<b>National Pork Board Innovation Award – Research</b> Pre- and postweaning performance of pigs injected with dexamethasone at birth. A.M. Gaines* <sup>1</sup> , J.A. Carroll <sup>2</sup> , G.L. Allee <sup>1</sup> , G.F. Yi <sup>1</sup> , J.D. Spencer <sup>1</sup> , J.W. Frank <sup>1</sup> , and D.C. Kendall <sup>1</sup> , <sup>1</sup> University of Missouri-Columbia, <sup>2</sup> Animal Physiology Research Unit, ARS-USDA, Columbia, Missouri.
9:30	75	Effect of formulating grow-finish swine diets using standardized ileal amino acid digestibility values on nutrient excretion and odor emissions from slurry. J. S. Knott* and G. C. Shurson, University of Minnesota, St. Paul.
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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
8:00	77	Effect of feather meal on live animal performance and carcass quality and composition of growing-finishing swine. C. B. Boger*, J. K. Apple, C. V. Maxwell, W. J. Roberts, and K. G. Friesen, University of Arkansas.
8:15	78	Effects of dietary manganese on quality characteristics of pork longissimus muscle (LM) chops during retail display. W. J. Roberts* <sup>1</sup> , J. K. Apple <sup>1</sup> , C. B. Boger <sup>1</sup> , C. V. Maxwell <sup>1</sup> , K. G. Friesen <sup>1</sup> , and T. M. Fakler <sup>2</sup> , <sup>1</sup> University of Arkansas, <sup>2</sup> Zinpro Corporation.
8:30	79	The effect of feeding Ractopamine (Paylean <sup>TM</sup> ) on loin quality and sensory characteristics in three genetic lines of swine. G.M. Stoller* <sup>1</sup> , H.N. Zerby <sup>1</sup> , S.J. Moeller <sup>1</sup> , T.J. Baas <sup>2</sup> , C.D. Johnson <sup>2</sup> , and L.E. Watkins <sup>3</sup> , <sup>1</sup> The Ohio State University, Columbus, OH, <sup>2</sup> Iowa State University, Ames, <sup>3</sup> Elanco Animal Health, Greenfield, IN.
8:45	80	Fresh pork loin quality associated with domestic or export storage. D. M. McNamara* <sup>1</sup> , T. W. Holthaus <sup>2</sup> , R. C. Johnson <sup>3</sup> , C. R. Calkins <sup>2</sup> , and E. P. Berg <sup>1</sup> , <sup>1</sup> University of Missouri, <sup>2</sup> University of Nebraska, <sup>3</sup> Triumph Pork Group, LLC.
9:00	81	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.
9:15	82	Influence of harvest processes on pork loin and ham quality. M.A. Gardner* <sup>1</sup> , S.M. Lonergan <sup>1</sup> , E. Huff-Lonergan <sup>1</sup> , L.J. Rowe <sup>1</sup> , and C.M. Schultz-Kaster <sup>2</sup> , <sup>1</sup> Iowa State University, <sup>2</sup> Premium Standard Farms.

9:30	83	$\mu$ -Calpain autolysis and calpastatin activity influences drip loss and tenderness of three porcine muscles. J.L. Dodge*, E. Huff-Lonergan, S.M. Lonergan, and L.J. Rowe, Iowa State University Ames, Iowa.
9:45	84	Descriptive analysis and consumer acceptance of irradiated beef patties. J. L. Norman*, C. L. Lorenzen, and H. Heymann, University of Missouri-Columbia.
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.

## **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

<b>Abstract Number</b>	<b>Paper</b>
92	Characterization of muscle glycogen storage and utilization: Influence on pork quality. S. M. Lonergan*, E. Huff-Lonergan, and M. F. Rothschild, Iowa State University.
93	Performance of growing-finishing pigs in pens with low or high variation in body weight. B. F. Wolter* <sup>1</sup> , M. Ellis <sup>1</sup> , S. E. Curtis <sup>1</sup> , B. P. Corrigan <sup>1</sup> , J. M. DeDecker <sup>1</sup> , E. N. Parr <sup>2</sup> , and D. M. Weibel <sup>2</sup> , <sup>1</sup> University of Illinois, Urbana, <sup>2</sup> United Feeds, Sheridan, IN.
94	Effects of feed form and placement immediately postweaning on the growth performance of piglets. B. P. Corrigan*, M. Ellis, B. F. Wolter, J. M. DeDecker, and S. E. Curtis, University of Illinois, Urbana.
95	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.
96	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.
97	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.
98	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.
99	The muscle cell intermediate filament protein synemin interacts with the universal cytolinker plectin. D. Walker* and R. Robson, Iowa State University.
100	The effect of initial stocking rate on pig performance in a wean-to-finish system. J. M. DeDecker*, M. Ellis, B. F. Wolter, B. P. Corrigan, S. E. Curtis, and G. R. Hollis, University of Illinois, Urbana.

- 101 The effect of group size/floor space allowance on pig performance in a wean-to-finish production system. J. M. DeDecker\*, M. Ellis, B. F. Wolter, B. P. Corrigan, S. E. Curtis, and G. R. Hollis, University of Illinois, Urbana.
- 102 Effects of Sex and Market Weight on Growth Performance, Carcass Characteristics and Pork Quality. B. G. Kim\*, J. R. Piao, Y. Y. Kim, and In K. Han, Seoul National University.

## 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* <sup>1</sup> , G. Yi <sup>1</sup> , A. M. Gaines <sup>1</sup> , G. L. Allee <sup>1</sup> , J. L. Usry <sup>2</sup> , M. Steidinger, and W. Cast, <sup>1</sup> University of Missouri-Columbia, <sup>2</sup> Ajinimoto Heartland Inc.
8:30	142	Effects of plasma grade, irradiation or paraldehide 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.
8:45	143	Effects of ingredient and whole diet irradiation on nursery pig performance. J.M. DeRouchey*, M.D. Tokach, J.L. Nelssen, R.D. Goodband, S.S. Dritz, J.C. Woodworth, M.J. Webster, and B.W. James, Kansas State University, Manhattan.
9:00	144	Comparison of Irradiated Feed and Food Grade Spray-dried Animal Plasma on Nursery Pig Performance. J.M. DeRouchey*, M.D. Tokach, J.L. Nelssen, R.D. Goodband, S.S. Dritz, J.C. Woodworth, and C.W. Hastad, Kansas State University, Manhattan.
9:15	145	The effect of varying levels of spray-dried animal plasma in nursery pig diets. C. S. Stovall*, G. A. Apgar, and K. E. Griswold, <sup>1</sup> Southern Illinois University, Carbondale.
9:30	146	A comparison of roller-dried whey and spray-dried whey in swine starter diets. G. F. Yi* <sup>1</sup> , G. L. Allee <sup>1</sup> , A. M. Gaines <sup>1</sup> , D. C. Kendall <sup>1</sup> , K. M. Halpin <sup>2</sup> , and M. Trotter <sup>2</sup> , <sup>1</sup> University of Missouri-Columbia, <sup>2</sup> International Ingredient Corporation, Inc.
9:45	147	Non-pasturized, spray-dried egg treated with Termin-8 as a protein source for phase I nursery diets. M.E. Davis* <sup>1</sup> , C.V. Maxwell <sup>1</sup> , Z.B. Johnson <sup>1</sup> , D.C. Brown <sup>1</sup> , S. Singh <sup>1</sup> , K.J. Touchette <sup>2</sup> , and J.A. Coalson <sup>2</sup> , <sup>1</sup> University of Arkansas, Fayetteville, <sup>2</sup> Merrick'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 <i>Salmonella enterica</i> serotype typhimurium (ST). T. E. Burkey*, S. S. Dritz, J. C. Nietfeld, B. J. Johnson, and J. E. Minton, Kansas State University.
10:45	150	Supplemental B-vitamins in pig nursery diets. T. Cline*, S. Carter, G. Hill, S. Kim, A. Lewis, D. Mahan, H. Stein, and T. Veum, NCR-42 Swine Nutrition Committee.
11:00	151	Response of weanling pigs to niacin and vitamin B <sub>12</sub> 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

Time	Abstract Number	Paper
8:00	153	Evaluating the influence of B vitamin supplementation on growth and carcass composition of growing and finishing swine. B.V. Lawrence* <sup>1</sup> , J.D. Hedges <sup>1</sup> , J.D. Hahn <sup>1</sup> , M.B. Coelho <sup>2</sup> , B.W. Cousins <sup>2</sup> , and S. Haye <sup>2</sup> , <sup>1</sup> Hubbard Feeds, Inc., <sup>2</sup> BASF Corporation.
8:15	154	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.
8:30	155	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.
8:45	156	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.
9:00	157	The influence of tylosin or rotational antibiotic use on apparent ileal and total tract digestion by growing pigs. M. R. Smiricky*, D. M. Albin, J. E. Wubben, V. M. Gabert, C. T. Collier, and H. R. Gaskins, University of Illinois.
9:15	158	Efficacy of betaine in diets for uncrowded and crowded finishing pigs. L. A. Pettey*, G. L. Cromwell, M. D. Lindemann, H. J. Monegue, R. D. Coffey, G. R. Parker, and K. M. Laurent, University of Kentucky, Lexington.

9:30	159	Effect of oral glycerol administration with and without dietary betaine on carcass composition and meat quality of late-finishing barrows. J.C. Airhart*, T.D. Bidner, and L.L. Southern, LSU Agricultural Center, Baton Rouge.
9:45	160	Effect of dietary manipulation of the starter feeding program on subsequent performance and carcass characteristics of finishing pigs. A.M. Gaines*, G.L. Allee, J.W. Frank, D.C. Kendall, J.D. Spencer, and G.F. Yi, University of Missouri-Columbia.
10:00	161	Evaluating phase feeding of gilts and barrows during the grower-finisher period. D.C. Mahan*, S.D. Carter, T.R. Cline, G.L. Cromwell, G.M. Hill, and G.R. Hollis, NCR-42 Committee.
10:15	162	Effect of wheat middlings, enzyme supplement, and dietary lysine level on growing-finishing pig performance, carcass measurements, and amino acid digestibility. J.C. Peters*, D.C. Mahan, N.D. Fastinger, and T.G. Wiseman, The Ohio State University.
10:30	163	Effect of dietary particle size and nutrient supply on nitrogen excretion of grower pigs. M. A. Oryschak <sup>1,2</sup> and R. T. Zijlstra* <sup>1</sup> , <sup>1</sup> Prairie Swine Centre Inc., <sup>2</sup> University of Saskatchewan, Saskatoon, Canada.
10:45	164	Development of an Isoleucine Deficient Diet in Growing and Finishing Pigs. Brian Kerr* <sup>1</sup> , T. M. Parr <sup>2</sup> , B. S. Borg <sup>3</sup> , J. M. Campbell <sup>3</sup> , K. L. Bryant <sup>4</sup> , and M. T. Kidd <sup>5</sup> , <sup>1</sup> USDA-ARS-SOMMRU, <sup>2</sup> University of Illinois, <sup>3</sup> American Protein Corporation, <sup>4</sup> Akey Incorporated, <sup>5</sup> Mississippi State University.
11:00	165	Plasma urea nitrogen as an indicator of the isoleucine requirement of grower pigs. T.M. Parr* <sup>1</sup> , B.J. Kerr <sup>2</sup> , and D.H. Baker <sup>1</sup> , <sup>1</sup> University of Illinois, Urbana, <sup>2</sup> Nutriquest, 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

Time	Abstract Number	Paper
10:15	198	Intrinsic phytase reduces excretion of volatile organic compounds in pigs. A. Woldeghiebril* <sup>1</sup> , A Koenigsfeld <sup>1</sup> , and A. Mathew <sup>2</sup> , <sup>1</sup> Lincoln University, Jefferson City MO, <sup>2</sup> University of Tennessee, Knoxville TN.
10:30	199	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.
10:45	200	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.
11:00	201	Effects of dietary crude protein reduction on pig performance, manure composition, aerial ammonia, hydrogen sulfide, and odor levels in swine buildings. B.E. Hill* <sup>1</sup> , D.C. Kendall <sup>2</sup> , S.L. Hankins <sup>1</sup> , S.A. Trapp <sup>1</sup> , B.T. Richert <sup>1</sup> , D.T. Kelly <sup>1</sup> , A.L. Sutton <sup>1</sup> , G.L. Allee <sup>2</sup> , T.A. van Kempen <sup>3</sup> , and W.J. Powers <sup>4</sup> , <sup>1</sup> Purdue University, W. Lafayette, In, <sup>2</sup> University of Missouri, Columbia, <sup>3</sup> North Carolina State University, Raliegh, <sup>4</sup> Iowa State University, Ames.
11:15	202	Nutrient Composition of Swine Lagoons and Hoop Barn Manure. J.M. DeRouchey*, R.D. Goodband, J.L. Nelssen, M.D. Tokach, S.S. Dritz, and J.P. Murphy, Kansas State University, Manhattan.
11:30	203	Infrared spectroscopy as an optical nose for predicting odor sensation. T.A.T.G. van Kempen* <sup>1</sup> , W.J. Powers <sup>2</sup> , and A. Sutton <sup>3</sup> , <sup>1</sup> North Carolina State University, <sup>2</sup> Iowa State University, <sup>3</sup> Purdue University.
11:45	204	Odor solutions initiative manure pit additive testing results. C. L. Tengman* <sup>1</sup> , R. N. Goodwin <sup>1</sup> , A. K. Gralapp-Gonzalez <sup>1</sup> , A. J. Heber <sup>2</sup> , J. Q. Ni <sup>2</sup> , K. J. Fakhoury <sup>2</sup> , and A. L. Sutton <sup>2</sup> , <sup>1</sup> National Pork Board, Des Moines, IA, <sup>2</sup> Purdue University, West Lafayette, IN.

# 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

Time	Abstract Number	Paper
8:30	205	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.
8:45	206	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.
9:00	207	Failure of endogenous follicle-stimulating hormone (FSH) to stimulate early ovarian growth in prepubertal gilts. J. J. Ford*, T. H. Wise, and R. K. Christenson, USDA, ARS, RLH US Meat Animal Research Center.
9:15	208	The effect of progesterone treatment on day 2 and 3 of pregnancy on gestation length, litter size, birth weight, and piglet growth rate in intact white crossbred pigs. J. L. Vallet*, USDA, ARS, RLH US Meat Animal Research Center.

# 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

Time	Abstract Number	Paper
10:00	209	INVITED Altering sperm membranes to improve cryosurvival. J.K. Graham* and P.H. Purdy, Colorado State University.
10:30	210	INVITED Interaction of bovine sperm with oviduct cells modifies intracellular pH regulation of sperm. J.J. Parrish* <sup>1</sup> and C.M.O. Medeiros <sup>2</sup> , <sup>1</sup> University of Wisconsin-Madison, <sup>2</sup> Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil.

- 11:00 211 INVITED Commercial application of mammalian sperm sexing. D.L. Garner\* and G.E. Seidel, Colorado State University.
- 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

- | <b>Abstract<br/>Number</b> | <b>Paper</b>   |
|----------------------------|--|
| 222                        | Effect of handling intensity on blood acid-base balance in slaughter weight pigs. T. M. Bertol* <sup>1,2</sup> , M. Ellis <sup>1</sup> , D. N. Hamilton <sup>1</sup> , and F. McKeith <sup>1</sup> , <sup>1</sup> University of Illinois at Urbana-Champaign, <sup>2</sup> CNPq, Brazil.               |
| 223                        | Survival of ram sperm stored at 39° C in ram semen diluter, caprogen or synthetic oviduct fluid. S. Meredith*, G. Dudenhoefter, D.O. Kiesling, A. Woldeghebriel, A.N.V. Stewart, and R. Savage, Lincoln University.  |
| 224                        | Effects of zeranol upon luteal maintenance and fetal development in peripubertal gilts. W.E. Trout <sup>1</sup> , C.T. Herr <sup>2</sup> , B.T. Richert <sup>2</sup> , W.L. Singleton <sup>2</sup> , and M.A. Diekman* <sup>2</sup> , <sup>1</sup> Trout Technologies, <sup>2</sup> Purdue University. |
| 225                        | Feeding melengestrol acetate (MGA) to resynchronize repeat estrus in beef heifers previously synchronized using a MGA/Prostaglandin F <sub>2a</sub> protocol. C. R. Dahlen* and G. C. Lamb, University of Minnesota.   |
| 226                        | Response of the small intestine to pregnancy in Romanov and Columbia ewes. A.N. Scheaffer, J.S. Luther*, D.R. Arnold, M.L. Bauer, D.A. Redmer, J.S. Caton, and L.P. Reynolds, North Dakota State University.   |

# 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

### Abstract Number

### Paper

- 227 Changes in nutritive value of tall fescue hay as affected by natural rainfall and initial moisture concentration at baling. J. E. Turner, W. K. Coblenz, D. A. Scarbrough, R. T. Rhein\*, K. P. Coffey, D. W. Kellogg, C. F. Rosenkrans, Jr., and J. V. Skinner, Jr., University of Arkansas.
- 228 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.
- 229 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.
- 230 Improving utilization of soybean hulls by cattle with digestive enzymes and dietary buffers. C. A. Loest\*, E. C. Titgemeyer, J. S. Drouillard, B. J. Johnson, A. M. Trater, and B. D. Lambert, Kansas State University, Manhattan.
- 231 Effect of processing sprouted grains on performance and carcass characteristics of beef steers. J.J. Reed\*, E.R. Loe, M.L. Bauer, and G.P. Lardy, North Dakota State University.
- 232 Characterizing the ensiling properties of wet beet pulp. I. Addition of dry feedstuffs. A.M. Encinias\*, T.C. Gilbery, G.P. Lardy, M.L. Bauer, and J.S. Caton, North Dakota State University.
- 233 Inclusion of sprouted grain in steer grower diets and effect on performance. J.J. Reed\*, E.R. Loe, M.L. Bauer, G.P. Lardy, and J.S. Caton, North Dakota State University.
- 234 Characterizing the ensiling properties of wet beet pulp. II. Addition of liquid feedstuffs. A.M. Encinias\*, T.C. Gilbery, G.P. Lardy, M.L. Bauer, and J.S. Caton, North Dakota State University.
- 235 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.
- 236 Characterizing the ensiling properties of wet beet pulp. III. Addition of urea. A.M. Encinias\*, T.C. Gilbery, G.P. Lardy, M.L. Bauer, and J.S. Caton, North Dakota State University.
- 237 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\*<sup>1</sup>, J. S. Caton<sup>1</sup>, D. A. Cline<sup>1</sup>, M. L. Bauer<sup>1</sup>, L. L. Manske<sup>2</sup>, and G. P. Lardy<sup>1</sup>, <sup>1</sup>North Dakota State University, Fargo, <sup>2</sup>North Dakota State University, Dickinson.
- 238 Effects of degradable intake protein on forage utilization and performance of periparturient beef cows fed native prairie hay. W. W. Dvorak\*, M. L. Bauer, J. S. Caton, and G. P. Lardy, North Dakota State University, Fargo.
- 239 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.

- 240 Effect of restricted forage intake on ruminal disappearance of a blood meal, feather meal and fish meal supplement. E. J. Scholljegerdes\*, B. W. Hess, and P. A. Ludden, University of Wyoming, Laramie, Wyoming.
- 241 Effects of high linoleic safflower seed supplement to gestating ewes on survivability of lambs. H. B. Encinias\*, T. C. Faller, M. L. Bauer, and G. P. Lardy, North Dakota State University, Fargo.
- 242 Urinary allantoin as an estimate of microbial protein synthesis. M. Lamothe\*, T. Klopfenstein, D. Adams, J. Musgrave, and G. Erickson, University of Nebraska-Lincoln.
- 243 Effect of pasture fertilization with urea or ammonium sulfate on feed selection and feed intake in sheep. M. Abdullah\*, S.C. Loerch, D.D. Clevenger, G.D. Lowe, and B.R. Stinner, OARDC, The Ohio State University, Wooster.
- 244 Using orchardgrass and endophyte-free fescue versus infected fescue overseeded on bermudagrass for cow herds: year 2. D. A. Scarbrough<sup>1</sup>, W. K. Coblenz\*<sup>1</sup>, K. P. Coffey<sup>1</sup>, T. F. Smith<sup>2</sup>, J. B. Humphry<sup>1</sup>, D. S. Hubbell, III<sup>2</sup>, J. K. Martin<sup>2</sup>, J. E. Turner<sup>1</sup>, K. F. Harrison<sup>2</sup>, and D. H. Hellwig<sup>1</sup>, <sup>1</sup>University of Arkansas, Fayetteville, <sup>2</sup>Livestock and Forestry Branch Station, Batesville.
- 245 Storage structure and density affects the VFA profile of corn silage and hay crop silage. P. A. Porter\*<sup>1</sup>, R. J. Marfilius<sup>2</sup>, M. A. Klemme<sup>2</sup>, D. F. Schueller<sup>2</sup>, and S. L. Gunderson<sup>3</sup>, <sup>1</sup>Land O'Lakes, Webster City, Iowa, <sup>2</sup>CP Feeds, LLC, Valders, Wisconsin, <sup>3</sup>University of Wisconsin Extension, Manitowoc, Wisconsin.
- 246 Pasture and weaning management systems to reduce the incidence of tall fescue toxicosis in cow-calf pairs. D. A. Scarbrough<sup>1</sup>, K. P. Coffey\*<sup>1</sup>, W. K. Coblenz<sup>1</sup>, J. K. Martin<sup>2</sup>, J. B. Humphry<sup>1</sup>, and D. H. Hellwig<sup>1</sup>, <sup>1</sup>University of Arkansas, Fayetteville, <sup>2</sup>Livestock and Forestry Branch Station, Batesville.
- 247 Effect of carbohydrate types and supplemental degradable intake protein sources on low-quality forage utilization by beef steers. J. I. Arroquy\*, R.C. Cochran, T.A. Wickersham, and D.A. Llewellyn, Kansas State University.
- 248 Self-fed wheat middlings in backgrounding diets for beef heifers. T.C. Gilbery\*<sup>1</sup>, G.P. Lardy<sup>1</sup>, B. Kreft<sup>2</sup>, J. Dhuyvetter<sup>3</sup>, and M.L. Bauer<sup>1</sup>, <sup>1</sup>North Dakota State University, Fargo, <sup>2</sup>Streeter, <sup>3</sup>Minot.
- 249 Year round grazing systems for fall- and spring-calving beef cows: winter grazing management. N. A. Janovick\* and J. R. Russell, Iowa State University.
- 250 Effect Of Creep Feeding Pressed Block or Salt-Limited Pellets To Beef Calves. T.C. Gilbery\*<sup>1</sup>, M.H. Knight<sup>1</sup>, G.P. Lardy<sup>1</sup>, B. Kreft<sup>2</sup>, J.S. Caton<sup>1</sup>, and R. Hall<sup>3</sup>, <sup>1</sup>North Dakota State University, Fargo, <sup>2</sup>Central Grasslands Research Center, Streeter, <sup>3</sup>Cooperative Research Farms.
- 251 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.
- 252 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.
- 253 Influence of forage type on digestion, nutrient flow and microbial efficiency in beef steers. T. D. Maddock\*, J. E. Leonard, M. L. Bauer, G. P. Lardy, V. I. Burke, T. C. Gilbery, and J. S. Caton, North Dakota State University.
- 254 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.
- 255 Influence of potato-processing waste in beef finishing diets on intake, ruminal fermentation, site of digestion and microbial efficiency. A. E. Radunz\*, M. L. Bauer, G. P. Lardy, and E. R. Loe, North Dakota State University, Fargo.

# 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

Time	Abstract Number	Paper
8:00	256	Effects of harvest date and late-summer nitrogen fertilization rate on mineral concentrations of stockpiled bermudagrass forage. D.L. Lalman <sup>*1</sup> , A.A. Gelvin <sup>1</sup> , C.M. Taliaferro <sup>1</sup> , and J. Ball <sup>2</sup> , <sup>1</sup> Oklahoma Agriculture Experiment Station, Stillwater, <sup>2</sup> Noble Foundation, Ardmore, Oklahoma.
8:15	257	Nitrogen timing and rate effects on yield and quality of drought-stressed stockpiled fescue. J. A. Jennings <sup>*</sup> , W. K. Coblenz, and L. J. Sandage, University of Arkansas Cooperative Extension Service.
8:30	258	Effects of nitrogen fertilization rate and harvest date on bermudagrass quality and in situ DM and fiber degradation. N. W. Galdamez <sup>*1</sup> , K. P. Coffey <sup>1</sup> , W. K. Coblenz <sup>1</sup> , J. E. Turner <sup>1</sup> , D. A. Scarbrough <sup>1</sup> , J. B. Humphry <sup>1</sup> , J. L. Gunzaulis <sup>2</sup> , and M. B. Daniels <sup>2</sup> , <sup>1</sup> University of Arkansas, Fayetteville, AR, <sup>2</sup> Cooperative Extension Service.
8:45	259	Relative Forage Quality: an alternative to Relative Feed Value. J. E. Moore <sup>*1</sup> and D. J. Undersander <sup>2</sup> , <sup>1</sup> University of Florida, Gainesville, FL, <sup>2</sup> University of Wisconsin, Madison, WI.
9:00	260	Effect of grazing corn stalks in the spring on subsequent crop yields. C. B. Wilson <sup>*</sup> , G. E. Erickson, T. J. Klopfenstein, and W. Luedtke, University of Nebraska, Lincoln.
9:15	261	Comparison of Dry and Liquid Protein Supplements Fed to Stocker Cattle consuming Low-Quality Native Grass: performance and digestibility. J. S. Weyers <sup>*1</sup> , H. T. Purvis II <sup>1</sup> , C. R. Krehbiel <sup>1</sup> , D. L. Lalman <sup>1</sup> , D. A. Cox <sup>1</sup> , J. E. Moore <sup>2</sup> , and J. Harris <sup>3</sup> , <sup>1</sup> Oklahoma State University, Stillwater OK, <sup>2</sup> University of Florida, Gainesville FL, <sup>3</sup> Westway Ag, Tomball, TX.
9:30	262	Effect of the frequency of cracked corn supplementation on alfalfa hay utilization by growing cattle. A.F. La Manna <sup>1</sup> , H.P. Purvis II <sup>*1</sup> , T.N. Bodine <sup>1</sup> , G.W. Horn <sup>1</sup> , and F.N. Owens <sup>2</sup> , <sup>1</sup> Oklahoma State University, <sup>2</sup> Dupont Specialty Grains.
9:40	263	Effects of weaning date and protein supplementation on cow/calf productivity. L. A. Ciminski <sup>*1</sup> , D. C. Adams <sup>2</sup> , T. J. Klopfenstein <sup>1</sup> , and R. T. Clark <sup>3</sup> , <sup>1</sup> University of Nebraska-Lincoln, Animal Science, <sup>2</sup> University of Nebraska-Lincoln, West Central Research and Extension Center, Animal Science, <sup>3</sup> University of Nebraska-Lincoln, West Central Research and Extension Center, Agricultural Economics.
10:00		BREAK

10:15	264	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.
10:30	265	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.
10:45	266	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.
11:00	267	Influence of cow parity and genetic potential for milk production on forage intake of Brangus females during late gestation. C.R. Johnson* <sup>1</sup> , D.L. Lalman <sup>1</sup> , M.A. Brown <sup>2</sup> , and L. Appeddu <sup>2</sup> , <sup>1</sup> Oklahoma Agricultural Experiment Station, <sup>2</sup> USDA-ARS Grazinglands Research Laboratory.
11:15	268	Influence of cow parity and genetic potential for milk production on forage intake of Brangus females during early lactation. C.R. Johnson* <sup>1</sup> , D.L. Lalman <sup>1</sup> , M.A. Brown <sup>2</sup> , and L. Appeddu <sup>2</sup> , <sup>1</sup> Oklahoma Agricultural Experiment Station, <sup>2</sup> USDA-ARS Grazinglands Research Laboratory.
11:30	269	Influence of cow parity and genetic potential for milk production on forage intake of Brangus females during late lactation. C.R. Johnson* <sup>1</sup> , D.L. Lalman <sup>1</sup> , M.A. Brown <sup>2</sup> , and L. Appeddu <sup>2</sup> , <sup>1</sup> Oklahoma Agricultural Experiment Station, <sup>2</sup> USDA-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**

292 Teaching an applied swine nutrition and feeding management course using WebCT. G.C. Shurson\*, J.S. Knott, M.J. Spiehs, B.J. Rae, and J.A. Renteria, University of Minnesota, St. Paul, MN.

# 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\*<sup>1</sup>, B. D. Hunsaker, A. C. Anderson<sup>2</sup>, J. D. Roder<sup>2</sup>, and D. A. Walker<sup>3</sup>, <sup>1</sup>The University of Arizona, Tucson, <sup>2</sup>Texas Tech Health Science Center, Amarillo, <sup>3</sup>Clayton Livestock Research Center, New Mexico State University, Clayton.
- 8 Dynamic model for behavior of outdoor gestating sows with seasonal ambient temperatures. H. A. Rachuonyo, S. W. Kim\*, and J. J. McGlone, Texas Tech University, Lubbock.
- 9 Effect of dietary cation-anion difference (DCAD) on stress responses in finisher swine exposed to a stress model system. D. J. Ivers\*, R. K. McGuffey, T. A. Armstrong, D. J. Jones, D. H. Mowrey, L. F. Richardson, R. Seneriz, J. R. Wagner, K. L. Watkins, and D. B. Anderson, Elanco Animal Health, Greenfield, Indiana.
- 10 Physiological comparison of downer and non-downer pigs following transportation and unloading at a packing plant. D. J. Ivers, L. F. Richardson, D. J. Jones, L. E. Watkins, K. D. Miller, J. R. Wagner, R. Seneriz, A. G. Zimmermann, K. A. Bowers, and D. B. Anderson\*, Elanco Animal Health, Greenfield, Indiana.

## 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. Nephawe* <sup>1</sup> , L. V. Cundiff <sup>2</sup> , and L. D. Van Vleck <sup>3</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2,3</sup> USDA, ARS, USMARC, <sup>2</sup> Clay Center, NE, <sup>3</sup> Lincoln, NE.

1:30	23	Effect of sire misidentification on estimates of genetic parameters for weaning weight. S. Senneke* <sup>1</sup> , M. D. MacNeil <sup>2</sup> , and L. D. Van Vleck <sup>3</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2</sup> USDA, ARS, LARRL, Miles City, MT, <sup>3</sup> USDA, 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* <sup>1</sup> , R. M. Koch <sup>1</sup> , K. E. Gregory <sup>2</sup> , L. V. Cundiff <sup>2</sup> , and L. D. Van Vleck <sup>2,3</sup> , <sup>1</sup> University of Nebraska, Lincoln, NE, <sup>2,3</sup> USDA, ARS, USMARC, <sup>2</sup> Clay Center, NE, <sup>3</sup> Lincoln, NE.
2:00	25	Genetic trends for mature weight for four lines of Hereford cows. J. M. Rumph* <sup>1</sup> , R. M. Koch <sup>1</sup> , K. E. Gregory <sup>2</sup> , L. V. Cundiff <sup>2</sup> , and L. D. Van Vleck <sup>2,3</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2,3</sup> USDA, ARS, USMARC, <sup>2</sup> Clay Center, NE, <sup>3</sup> Lincoln, NE.
2:15	26	Genetic parameters for lifetime production of Hereford cows. G. E. Martinez* <sup>1</sup> , R. M. Koch <sup>1</sup> , L. V. Cundiff <sup>2</sup> , K. E. Gregory <sup>2</sup> , and L. D. Van Vleck <sup>2,3</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2,3</sup> USDA, ARS, USMARC, <sup>2</sup> Clay Center, NE, <sup>3</sup> Lincoln, NE.
2:30	27	Genetic parameters for longevity and lifetime production of Hereford cows. G. E. Martinez* <sup>1</sup> , R. M. Koch <sup>1</sup> , L. V. Cundiff <sup>2</sup> , K. E. Gregory <sup>2</sup> , and L. D. Van Vleck <sup>2,3</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2,3</sup> USDA, ARS, USMARC, <sup>2</sup> Clay Center, NE, <sup>3</sup> Lincoln, NE.
2:45		BREAK
3:15	28	Estimation of genetic parameters of lamb mortality using discrete survival analysis. B. R. Southey* <sup>1</sup> , S. L. Rodriguez-Zas <sup>1</sup> , and K. A. Leymaster <sup>2</sup> , <sup>1</sup> University of Illinois, Urbana, <sup>2</sup> USDA-ARS, U. S. Meat Animal Research Center, Clay Center, NE.
3:30	29	Comparison of models for traits of Rambouillet sheep. L. D. Van Vleck* <sup>1</sup> , K. J. Hanford <sup>2</sup> , and G. S. Snowden <sup>3</sup> , <sup>1</sup> USDA, ARS, USMARC, Lincoln, NE, <sup>2</sup> University of Nebraska, Lincoln, <sup>3</sup> USDA, ARS, USSES, Dubois, ID.
3:45	30	Genetic parameters for subjective milk score and litter weight for Targhee, Columbia, Rambouillet, and Polypay Sheep. R. Sawalha* <sup>1</sup> , J. F. Keown <sup>1</sup> , G. D. Snowden <sup>2</sup> , and L. D. Van Vleck <sup>3</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2</sup> USDA, ARS, U.S. Sheep Experiment Station, Dubois, ID, <sup>3</sup> USDA, 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* <sup>1</sup> , M. K. Nielsen <sup>1</sup> , K. A. Leymaster <sup>2</sup> , and T. G. Jenkins <sup>2</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2</sup> 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* <sup>1</sup> , T. J. Baas <sup>1</sup> , and R. N. Goodwin <sup>2</sup> , <sup>1</sup> Iowa State University, Ames, <sup>2</sup> National 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

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

## 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

Abstract Number	Paper
34	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.
35	Comparison of the glycolytic potential and DNA-based test for predicting Rendement Napole genotype. D. N. Hamilton* <sup>1</sup> , M. Ellis <sup>1</sup> , K. D. Miller <sup>2</sup> , F. K. McKeith <sup>1</sup> , A. D. Higgerson <sup>1</sup> , and J. E. Beever <sup>1</sup> , <sup>1</sup> University of Illinois at Urbana-Champaign, <sup>2</sup> Elanco Animal Health, Greenfield, Indiana.
36	Study of factors influencing sow longevity in swine breeding herds. S. L. Rodriguez-Zas* <sup>1</sup> , B. R. Southey <sup>1</sup> , R. V. Knox <sup>1</sup> , and J. F. Connor <sup>2</sup> , <sup>1</sup> University of Illinois at Urbana-Champaign, <sup>2</sup> Carthage Veterinary Service, Ltd.
37	Introgression of multiple QTL with limited population size in livestock. N. Chaiwong* and J. Dekkers, Iowa State University, Ames.
38	Confirmation of quantitative trait loci (QTL) affecting body weight and fatness in a congenic line of mice. N. Jerez-Timaure* <sup>1</sup> , D. Pomp <sup>1</sup> , and E. J. Eisen <sup>2</sup> , <sup>1</sup> University of Nebraska, Lincoln, <sup>2</sup> North Carolina State University, Raleigh.

## 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

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

activate members of the MAPK family. S.E. Johnson\*, S.R. Thomson, J.L. Page, S.A. Bolanowski, X. Wang, and C.M. Dorman, The Pennsylvania State University.

## 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

#### Abstract Number

#### Paper

- 121 Tissue, sub-cellular and sub-mitochondrial location of lysine  $\alpha$ -ketoglutarate reductase in piglets. N. J. Benevenga\*, L. G. Haas, and T.D. Crenshaw, University of Wisconsin-Madison.
- 122 Low phytate barley cultivars for growing pigs: Growth performance and bone strength. T. L. Veum\*<sup>1</sup>, D. W. Bollinger<sup>1</sup>, D. R. Ledoux<sup>1</sup>, M. S. Carlson<sup>1</sup>, and V. Raboy<sup>2</sup>, <sup>1</sup>University of Missouri, Columbia, <sup>2</sup>USDA-ARS National Small Grain Germplasm Research Facility Aberdeen, ID.
- 123 Low phytate barley cultivars for growing pigs: Ca, P, and N utilization. T. L. Veum\*<sup>1</sup>, D. W. Bollinger<sup>1</sup>, D. R. Ledoux<sup>1</sup>, M. S. Carlson<sup>1</sup>, and V. Raboy<sup>2</sup>, <sup>1</sup>University of Missouri, Columbia, <sup>2</sup>USDA-ARS National Small Grain Germplasm Research Facility, Aberdeen, ID.
- 124 Effects of Fibrozyme and phytase enzymes on growing-finishing pig performance in field pea-canola meal supplemented diets. D.G. Landblom\*<sup>1</sup>, R.L. Harrold<sup>2</sup>, W.W. Poland<sup>1</sup>, and K.A. Dawson<sup>3</sup>, <sup>1</sup>NDSU - Dickinson Research Extension Center, Dickinson, ND, <sup>2</sup>NDSU - Animal and Range Science Dept., Fargo, ND, <sup>3</sup>Alltech Biotechnology, Inc., Nicholasville, KY.
- 125 Efficacy of dietary phosphorus (P) sources for growth based on available P equivalency. T.S. Stahly\*, T.R. Lutz, and R.D. Clayton, Iowa State University, Ames.
- 126 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. Benevenga<sup>1</sup>, D. K. Schneider<sup>1</sup>, M. E. Glenn<sup>1</sup>, T. M. Fakler<sup>2</sup>, X. G. Luo<sup>3</sup>, and T. D. Crenshaw\*<sup>1</sup>, <sup>1</sup>University of Wisconsin, Madison, <sup>2</sup>Zinpro Corporation, Eden Prairie, MN, <sup>3</sup>Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing China.
- 127 Assessment of the feeding value of South Dakota grown field peas for growing pigs. H. H. Stein\*, R. A. Bohlke, V. Rayadurg, D. Peters, and R. C. Thaler, South Dakota State University.
- 128 A comparison of swine performance when fed diets containing Roundup Ready® (event NK603) or conventional corn lines. G. Bressner<sup>1</sup>, Y. Hyun\*<sup>1</sup>, E. Stanisiewski<sup>2</sup>, G. Hartnell<sup>2</sup>, and M. Ellis<sup>1</sup>, <sup>1</sup>University of Illinois at Urbana-Champaign, <sup>2</sup>Monsanto Company, St. Louis.
- 129 Evaluation of copper chloride and copper sulfate as growth promoters in swine finishing diets. C.W. Hastad\*, S.S. Dritz, J.L. Nelssen, M.D. Tokach, and R.D. Goodband, Kansas State University, Manhattan Kansas.
- 130 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.
- 131 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.

- 132 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.
- 133 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.
- 134 Efficacy of Luctaplus® in improving performance of conventionally and segregated early-weaned pigs fed simple or complex diets. M.E. Davis\*<sup>1</sup>, C.V. Maxwell<sup>1</sup>, Z.B. Johnson<sup>1</sup>, B.Z. de Rodas<sup>2</sup>, D.C. Brown<sup>1</sup>, M.L. Gibson<sup>3</sup>, and E. Roura<sup>3</sup>, <sup>1</sup>University of Arkansas, Fayetteville, <sup>2</sup>Land O'Lakes, Fort Dodge, IA, <sup>3</sup>Lucta USA, Northbrook, IL.
- 135 The effect of floor-feeding on post-weaning piglet weight gain. N.R. Augspurger\*, T.M. Parr, and D.H. Baker, University of Illinois at Urbana-Champaign.
- 136 The influence of dietary energy on the response to betaine in finishing pigs. M. G. Young\*, S. S. Dritz, M. D. Tokach, R. D. Goodband, and J. L. Nelssen, Kansas State University, Manhattan.
- 137 Influence of dietary supplementation with  $\beta$ -mannanase on performance of finishing pigs in a commercial system. P. R. O'Quinn\*<sup>1</sup>, D. W. Funderburke<sup>1</sup>, C. L. Funderburke<sup>1</sup>, and R. L. James<sup>2</sup>, <sup>1</sup>Cape Fear Consulting, LLC, Warsaw, NC, <sup>2</sup>ChemGen Corp., Gaithersburg, MD.
- 138 Bone integrity in response to changes in dietary energy intake. B.C. Robbins\*<sup>1</sup>, T.D. Crenshaw<sup>1</sup>, J.F. Patience<sup>2</sup>, and R.D. Boyd<sup>3</sup>, <sup>1</sup>University of Wisconsin, Madison, <sup>2</sup>Prairie Swine Center, Inc. Saskatoon, SK, <sup>3</sup>PIC, Inc. Franklin, KY.
- 139 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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
1:00	169	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.
1:15	170	Effects of the addition of phytase and pharmacological concentrations of zinc oxide on phosphorus excretion 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.
1:30	171	Effect of phytase dosage and source on growth performance of nursery pigs. B. W. James* <sup>1</sup> , M. D. Tokach <sup>1</sup> , R. D. Goodband <sup>1</sup> , J. L. Nelssen <sup>1</sup> , S. S. Dritz <sup>1</sup> , and G. L. Lynch <sup>2</sup> , <sup>1</sup> Kansas State University, Manhattan, <sup>2</sup> BASF Corporation, Mount Olive, NJ.

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.
2:15	174	Effect of low phytate corn and dietary phytase addition on pig growth and fecal phosphorus excretion in a commercial environment. G. Gourley* <sup>1</sup> , T.E. Sauber <sup>2</sup> , D.B. Jones <sup>2</sup> , D. Kendall <sup>3</sup> , and G. Allee <sup>3</sup> , <sup>1</sup> Swine Graphics Enterprises, <sup>2</sup> Pioneer-A DuPont Company, <sup>3</sup> University of Missouri-Columbia.
2:30		BREAK
2:45	175	Efficacy of different phytase products for young chicks and pigs. N.R. Augspurger* <sup>1</sup> , D.M. Weibel <sup>2</sup> , X.G. Lei <sup>3</sup> , and D.H. Baker <sup>1</sup> , <sup>1</sup> University of Illinois at Urbana-Champaign, <sup>2</sup> United Feeds, Inc. Sheridan, IN, <sup>3</sup> Cornell University, Ithaca, NY.
3:00	176	Release of phosphorus from two phytase products. G. L. Lynch*, W. F. McKnight, and B. W. Cousins, BASF Corporation.
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.
3:45	179	Evaluating growth performance, plasma and feces of nursery pigs fed organic zinc polysaccharide complex. C. A. Boren*, M. S. Carlson, C. E. Huntington, D. W. Bollinger, and T. L. Veum, University of Missouri, Columbia.
4:00	180	Iron bioavailability of humate in young pigs. S. W. Kim*, L. E. Hulbert, H. A. Rachuonyo, and J. J. McGlone, Texas Tech University.
4:15	181	Timing of magnesium supplementation through drinking water to improve fresh pork quality. B. R. Frederick*, E. van Heugten, and M. T. See, North Carolina 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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
1:45	182	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.

2:00	183	Effect of ractopamine (Paylean®) feeding program on growth performance and carcass value. M. T. See* <sup>1</sup> , T. A. Armstrong <sup>2</sup> , and W. C. Weldon <sup>2</sup> , <sup>1</sup> North Carolina State University, <sup>2</sup> Elanco Animal Health.
2:15	184	Evaluation of the effects of dietary fat, conjugated linoleic acid, and ractopamine on growth performance and carcass quality in genetically lean gilts. T. E. Weber*, B. T. Richert, and A. P. Schinckel, Purdue University.
2:30	185	Effects of ractopamine and carnitine in diets containing 5% fat for finishing pigs. S. A. Trapp* <sup>1</sup> , B. T. Richert <sup>1</sup> , A. P. Schinckel <sup>1</sup> , and K. Q. Owen <sup>2</sup> , <sup>1</sup> Purdue University, West Lafayette, IN, <sup>2</sup> Lonza, Inc., Fair Lawn, NJ.
2:45	186	Interactive effects between Paylean® (Ractopamine HCl) and dietary lysine on pork quality and loin, belly, and ham composition. M. J. Webster*, R. D. Goodband, M. D. Tokach, J. A. Unruh, J. L. Nelssen, S. S. Dritz, D. E. Real, J. M. DeRouchey, J. C. Woodworth, and T. A. Marsteller <sup>1</sup> , Kansas State University, Manhattan, KS, <sup>1</sup> Elanco Animal Health, Indianapolis, IN.
3:00	187	Interactive effects between Paylean® (Ractopamine HCl) and dietary lysine on finishing pig growth performance, carcass characteristics and tissue accretion. M. J. Webster*, R. D. Goodband, M. D. Tokach, J. A. Unruh, J. L. Nelssen, S. S. Dritz, D. E. Real, J. M. DeRouchey, J. C. Woodworth, and T. A. Marsteller <sup>1</sup> , Kansas State University, Manhattan, KS, <sup>1</sup> Elanco Animal Health, Indianapolis, IN.
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* <sup>1</sup> , J.K. Apple <sup>1</sup> , C.V. Maxwell <sup>1</sup> , K.G. Friesen <sup>1</sup> , M.E. Davis <sup>1</sup> , R.E. Musser <sup>2</sup> , Z.B. Johnson <sup>1</sup> , and T.A. Armstrong <sup>3</sup> , <sup>1</sup> University of Arkansas, <sup>2</sup> The Pork Group, Rogers, AR, <sup>3</sup> Elanco 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* <sup>1</sup> , C.A. Stahl <sup>1</sup> , A.M. Gaines <sup>1</sup> , D.C. Kendall <sup>1</sup> , G.F Yi <sup>1</sup> , J.W. Frank <sup>1</sup> , E.P. Berg <sup>1</sup> , D.J. Jones <sup>2</sup> , and G.L. Allee <sup>1</sup> , <sup>1</sup> University of Missouri, Columbia, <sup>2</sup> Elanco 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

Time	Abstract Number	Paper
1:00	213	INVITED A review of the estrous cycle in beef cattle: Physiology, endocrinology, and follicular waves. F. N. Kojima*, University of Missouri, Columbia.
1:30	214	INVITED Synchronization of estrus in beef heifers with mga and PGF. D.J. Kesler*, N.R. Wherley, and D.B. Faulkner, University of Illinois.
2:00	215	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.
2:30	216	INVITED Synchronization of estrus in beef cows and beef and dairy heifers with EAZI-Breed Cattle CIDR Inserts (intravaginal progesterone inserts) and Lutalyse Sterile Solution. John R. Chenault*, Pharmacia Animal Health.
3:00	217	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.
3:30	218	INVITED Past, Present, and Future impact of ultrasound technology on beef cattle reproductive research and management strategies. G. C. Lamb* and C. R. Dahlen, University of Minnesota.
4:00	219	INVITED Factors affecting fertilization in estrus-synchronized cattle. R. G. Saacke*, Virginia Polytechnic Institute and State University.
4:30	220	Efficacy of ovsynch and ovsynch plus cidr treatments on effecting a cure in dairy cows with cystic ovarian disease. T.L. Steckler*, T.F. Lock, G.C. McCoy, and D.J. Kesler, University of Illinois.
4:45	221	Synchronization of Ovulation in Suckled Beef Cows with GnRH-CIDR-PGF and Timed Insemination at 48 or 60 h after PGF <sub>2a</sub> . S.K. Johnson*, K.R. Harmony, and J.S. Stevenson, Kansas State University.

# **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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
1:00	270	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.
1:40	271	INVITED Estimating silage energy content and milk yield to rank corn hybrids. R. D. Shaver*, J. G. Lauer, E. C. Schwab, and J. G. Coors, University of Wisconsin, Madison.
2:20		DISCUSSION

# **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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
3:00	272	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.
3:15	273	Effect of alfalfa silage, corn silage and levels of crude protein on ruminal pH and ammonia concentration over a 24 hour period in lactating dairy cows. K.L. Karg*, L. Perdereau, and M.A. Wattiaux, University of Wisconsin-Madison.
3:30	274	Evaluation of graded levels of fish oil and extruded soybeans in diets of lactating dairy cows. L. A. Whitlock*, D. J. Schingoethe, A. R. Hippen, K. F. Kalscheur, and A. A. Abu-Ghazaleh, South Dakota State University, Brookings.

3:45	275	Chronic glucagon administration and lipoprotein composition in periparturient dairy cows. B. N. Ametaj*, G. Bobe, J. W. Young, and D. C. Beitz, Iowa State University, Ames.
4:00	276	Effect of protein level in prepartum diets on metabolism and performance of dairy cows. A.F. Park*, J.E. Shirley, E.C. Titgemeyer, R.C. Cochran, T.A. Wickersham, J.M. DeFrain, E.E. Ferdinand, A.K. Hammond, and D.G. Schmidt, Kansas State University.
4:15	277	Amplification of 18S rDNA sequences from protozoal-enriched rumen samples to study ruminal protozoal ecology. S. K. R. Karnati*, J. T. Sylvester, Z. Yu, B. A. Dehority, and J. L. Firkins, The Ohio State University.

## **Ruminant Nutrition and Forages V**

### **Feedlot Nutrition**

Chair: Galen Erickson, University of Nebraska, Lincoln

Tuesday, 3:00 p.m. – 5:00 p.m.

Room: 205D

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
3:00	278	Effect of feeding time and sprinkling on performance and body temperature of steers. M.S. Davis* and T.L. Mader, University of Nebraska.
3:15	279	Type of corn bran and corn processing method in beef finishing diets. C. N. Macken* <sup>1</sup> , T. J. Klopfenstein <sup>1</sup> , G. E. Erickson <sup>1</sup> , and R. A. Stock <sup>2</sup> , <sup>1</sup> University of Nebraska-Lincoln, <sup>2</sup> Cargill Inc., Blair, NE.
3:30	280	Effects of growth promotants on feedlot heifers fed in winter vs. summer. W.M. Kreikemeier* and T.L. Mader, University of Nebraska-Lincoln.
3:45	281	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.
4:00	282	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.
4:15	283	Ruminal fermentation characteristics and duodenal amino acid flows in beef cattle fed varying levels of bloodmeal. J.W. Lehmkuhler* <sup>1</sup> , E.E.D. Felton <sup>2</sup> , C.J. Fu <sup>2</sup> , and M.S. Kerley <sup>2</sup> , <sup>1</sup> University of Wisconsin, <sup>2</sup> University of Missouri.
4:30	284	Effect of an inoculant extender on the pH decline of liquid applied silage inoculant and terminal silage pH. J. S. White* <sup>1</sup> , K. Katzung <sup>2</sup> , and N. Prescher <sup>3</sup> , <sup>1</sup> Silage Solutions, Sioux Center, IA, <sup>2</sup> Northland Farm Systems, Owatonna, MN, <sup>3</sup> AgScience, Sioux Falls, SD.
4:45	285	Effect of cutting height and genetics on intake and digestibility of corn silage. L. R. Kennington* <sup>1</sup> , C. W. Hunt <sup>1</sup> , J. I. Szasz <sup>1</sup> , A. V. Grove <sup>1</sup> , and W. Kezar <sup>2</sup> , <sup>1</sup> University of Idaho, Moscow, <sup>2</sup> Pioneer Hi-Bred International, Johnston, Iowa.

# 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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
9:00	39	Birth weight, calving ease, and other factors affecting perinatal mortality in Holstein cattle. J. M. Johanson* and P. J. Berger, Iowa State University, Ames.
9:15	40	Differences in performance between growing pigs fed using electronic versus commercial feeders. D.S. Casey* and J.C.M. Dekkers, Iowa State University, Ames.
9:30	41	Effects of Rendement Napole gene and HAL 1843 gene on fresh and cooked pork loin quality. R. N. Goodwin* <sup>1</sup> , T. J. Baas <sup>2</sup> , K. Prusa <sup>2</sup> , C. Fedler <sup>2</sup> , and D. Newcom <sup>2</sup> , <sup>1</sup> National Pork Board, Des Moines, IA, <sup>2</sup> Iowa State University, Ames.
9:45	42	Fertility of intra-uterine vs. intra-cervical insemination of semen in swine. T Gall*, Pork Technologies, Danville, IA.
10:00	43	Growth and puberty traits of topcross heifer progeny of Hereford, Angus, Red Angus, Simmental, Gelbvieh, Limousin, and Charolais sires. L. V. Cundiff* <sup>1,2</sup> , L. D. Van Vleck <sup>1,3</sup> , and R. M. Thallman <sup>1,2</sup> , <sup>1</sup> USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center, <sup>2</sup> Clay Center, NE, <sup>3</sup> Lincoln, NE.
10:15	44	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.

## **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

<b>Time</b>	<b>Abstract Number</b>	<b>Paper</b>
9:00	67	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, <sup>1</sup> University of Nebraska, Lincoln.
9:15	68	<b>National Pork Board Innovation Award - Teaching</b> Use of a hands-on workshop to teach swine reproductive management to farrowing barn workers. J. A. Sterle* <sup>1</sup> and L. J. Johnston <sup>2</sup> , <sup>1</sup> Texas A&M University, College Station, <sup>2</sup> University of Minnesota West Central Research and Outreach Center, Morris.
9:30	69	Effects of canine teeth clipping on pig performance. M.D. Hoge*, R.O. Bates, D.B. Edwards, and B.E. Straw <sup>1</sup> , Michigan State University, East Lansing.

## **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.
9:30	INVITED Will the Feeding Management Practices With Beef Feedlots Work for Dairy Cattle? H. F. Bucholtz, Michigan State University, East Lansing.
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

Time	Abstract Number	Paper
9:00	103	The effect of feeding ractopamine on growth and carcass traits in three genetic lines of pigs. T. J. Baas* <sup>1</sup> , S. J. Moeller <sup>2</sup> , C. D. Johnson <sup>1</sup> , H. Zerby <sup>2</sup> , G. M. Stoller <sup>2</sup> , and L. E. Watkins <sup>3</sup> , <sup>1</sup> Iowa State University, <sup>2</sup> The Ohio State University, <sup>3</sup> Elanco Animal Health.
9:15	104	The relationship between serum leptin concentration and beef carcass composition and quality. E. L. McFadin*, D. H. Keisler, T. B. Schmidt, C. L. Lorenzen, and E. P. Berg, University of Missouri.
9:30	105	<b>National Pork Board Innovation Award – Research</b> Protein accretion in pigs infected with <i>Mycoplasma hyopneumoniae</i> and Porcine Reproductive and Respiratory Syndrome Virus. J. Escobar* <sup>1</sup> , T.L. Toepfer <sup>1</sup> , W.G. Van Alstine <sup>2</sup> , D.H. Baker <sup>1</sup> , and R.W. Johnson <sup>1</sup> , <sup>1</sup> University of Illinois, Urbana, <sup>2</sup> Purdue University, W. Lafayette, IN.
9:45	106	The use of nonlinear mixed models for swine growth. A. P. Schinckel* and B. A. Craig, Purdue University, West Lafayette, IN.
10:00	107	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.
10:15	108	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* <sup>1</sup> , M. Ellis <sup>1</sup> , S. E. Curtis <sup>1</sup> , B. P. Corrigan <sup>1</sup> , J. M. DeDecker <sup>1</sup> , E. N. Parr <sup>2</sup> , and D. M. Webel <sup>2</sup> , <sup>1</sup> University of Illinois, Urbana, <sup>2</sup> United Feeds, Sheridan, IN.

# 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

Time	Abstract Number	Paper
9:00		INTRODUCTION
9:05	193	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.
9:35	194	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.
10:00		BREAK
10:15	195	INVITED Relationship of carbohydrate and lipid nutrition to reproduction in sows. Bas Kemp* <sup>1</sup> and Henry Van den Brand <sup>1</sup> , <sup>1</sup> Wageningen University, Wageningen, The Netherlands.
10:40	196	INVITED Feeding and managing the boar for optimal reproductive capacity. M. E. Wilson*, Minitube of America, Inc.
11:05	197	INVITED Feeding management of the breeding herd: A systems approach. D. S. Pollmann*, Murphy Farms, LLC, Ames, IA.
11:35		DISCUSSION

# 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

Time	Abstract Number	Paper
9:00	286	Degradability of crude protein and nonstructural carbohydrate in selected feeds and grain mixes. D.P. Casper <sup>*1,2</sup> , M.J. Brouk <sup>3</sup> , and D.J. Schingoethe <sup>3</sup> , <sup>1</sup> Agri-King, Inc., Fulton, IL, <sup>2</sup> USDA-ARS, Beltsville, MD, <sup>3</sup> South Dakota State University, Brookings.
9:15	287	The effects of volatile fatty acid on acid-resistance of cattle fecal <i>E. coli</i> and <i>E.coli O157:H7</i> . C. J. Fu <sup>*1</sup> , J. H. Porter <sup>1</sup> , E. E. D. Felton <sup>1</sup> , J. W. Lehmkuhler <sup>2</sup> , and M. S. Kerley <sup>1</sup> , <sup>1</sup> University of Missouri-Columbia, <sup>2</sup> University of Wisconsin-Madsion.
9:30	288	Inhibition of methanogenesis in ruminal cultures by p-aminobenzoate (pABA) analogs. B. A. DeMontigny <sup>*</sup> , R. Dumitru, S. Schroeder, H. Palencia, S. W. Ragsdale, J. M. Takacs, and J. L. Miner, University of Nebraska-Lincoln.
9:45	289	Response of breed and gender of beef cattle to copper sulfate supplementation. M. J. Rincker <sup>*</sup> , J. B. Barber, P. H. Coe, D. R. Hawkins, G. M. Hill, J. E. Link, and J. E. Rowntree, Michigan State University, East Lansing, MI.
10:00	290	Effect of age on glutathione peroxidase activity in Angus females. J.E. Rowntree <sup>*</sup> , D.R. Hawkins, G.M. Hill, and J.E. Link, Michigan State University.
10:15	291	Influence of supplemental sunflower oil and dexamethasone therapy on performance and adipose tissue development of early eaned beef steers. M. P. McCurdy <sup>*</sup> , D. D. Buskirk, A. C. Grant, and J. D. Cowley, <sup>1</sup> Michigan State University.

# **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**

Jim Reecy  
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 Diekman  
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. Vathauer, 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
- 1981 R. L. Prior, Roman L. Hruska U.S. Meat Animal  
Research Center
- 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. Koochmaraie, 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

1982	R. E. Morrow, University of Missouri
1983	D. J. Kesler, University of Illinois
1984	R. A. Easter, University of Illinois
1985	D. F. Parrett, University of Illinois
1986	J. G. Sebranek, Iowa State University
1987	D. R. Brink, University of Nebraska
1988	K. M. Irvin, The Ohio State University
1989	R. P. Lemenager, Purdue University
1990	B. R. Skaar, Iowa State University
1991	D. A. Nichols, Kansas State University
1992	M. A. Russell, Purdue University
1993	D. K. Combs, University of Wisconsin, Madison
1994	L. C. Martin, Kansas State University
1995	M. E. Benson, Michigan State University
1996	B. D. Banks, Michigan State University
1997	H. D. Tyler, Iowa State University
1998	C. R. Youngs, Iowa State University
1999	J. N. Spain, University of Missouri
2000	M. E. Doumit, Michigan State University
2001	S. M. Lonergan, Iowa State University

### **AGRIBUSINESS AWARD**

1995	P. L. Houghton, Heartland Cattle Co., McCook, Nebraska
1996	J. A. Barmore, Vita Plus Corp., Madison, Wisconsin
1997	D. E. Dill, Dairy Strategies, Mendota Heights, MN
1998	C. M. Luhman, Land O'lakes Research Farm, Webster City, IA
1999	Not Given
2000	D. L. Hancock, Elanco Animal Health, Greenfield, IN
2001	J. M. Lynch, Heartland Cattle Co., McCook, NE

## **PAST WINNERS OF INVITATIONAL COMPETITIVE RESEARCH PAPER AWARDS**

### **UNDERGRADUATE STUDENTS**

1987	R. E. Raw, University of Missouri
1988	J. A. Ragains, University of Missouri
1989	G. L. Ambrose, South Dakota State University
1990	C. N. Kemper, University of Missouri

1991 T. R. Eberle, North Dakota State University  
 1992 B. J. MacDonald, North Dakota State University  
 1993 B. L. Dunn, Kansas State University  
 1994 S. M. Nelson, University of Nebraska  
 1995 L. J. Trinity, Iowa State University  
 1996 M. E. Cunningham, Oklahoma State University  
 1997 C. E. Sorenson, South Dakota State University  
 1998 J. L. Strickland, University of Nebraska  
 1999 B. A. DeMontigny, North Dakota State University  
 2000 K. S. Freise, University of Illinois  
 2001 K. R. Nollette, University of Nebraska

### **GRADUATE STUDENTS**

1976 D. G. Haught, Iowa State University  
 1977 L. L. Berger, University of Nebraska  
 1978 G. F. Collings, Michigan State University  
 1979 R. D. Boyd, University of Nebraska  
 1980 D. G. Cieslak, University of Wisconsin  
 1981 W. F. Pope, University of Nebraska  
 1982 P. F. Saenger, Purdue University  
 1983 D. A. Redmer, University of Missouri  
 1984 W. F. Brown, University of Nebraska  
 1985 J. H. Brendemuhl, University of Nebraska  
 1986 P. L. Houghton, Purdue University  
 1987 M. H. Wilde, The Ohio State University  
 1988 T. R. Radke, University of Nebraska  
 1989 K. K. Kreikemeier, Kansas State University  
 1990 R. A. Nold, Kansas State University  
 1991 M. D. Tokach, University of Minnesota  
 1992 G. F. Louis, University of Nebraska  
 1993 B. T. Larson, University of Missouri  
 1994 L. H. Anderson, The Ohio State University  
 1995 M. L. Augenstein, University of Minnesota  
 1996 D. D. Koehler, University of Minnesota  
 1997 R. A. Nold, South Dakota State University  
 1998 K. J. Rozeboom, University of Minnesota  
 1999 L. A. Averette, North Carolina State University  
 2000 T. A. Armstrong, North Carolina State University  
 2001 M.S. Division  
 T. G. McDanel, University of Nebraska

Ph.D. Division  
J. H. Hampton, University of Missouri

## **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. Hofer, Michigan State  
1970-71 W. E. Dinusson, North Dakota State  
1972 J. F. Lasley, Missouri  
1973 U. S. Garrigus, Illinois  
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. Zimelman, 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
- 1998 J. K. Drackley, Illinois
- 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

<b>ACTIVITY</b>	<b>ROOM</b>
<b>Monday PM</b>	
Nonruminant Nutrition I	204FG
Congressional Insights	140
Undergraduate Student Competitive Research Papers	204C
<b>Tuesday AM</b>	
Animal Behavior, Housing, and Well-Being I	205D
Breeding and Genetics I	205E
Extension I	Exhibit Hall, Room 206
Extension II	Exhibit Hall, Room 206
Extension III	134
Graduate Student Competitive Research Papers	205D
Growth, Development, Muscle Biology, and Meat Science I	204C
Growth, Development, Muscle Biology, and Meat Science II	Exhibit Hall, Room 206
Nonruminant Nutrition II	204FG
Nonruminant Nutrition III	204AB
Odor and Nutrient Management	138
Physiology I	136
Physiology II	136
Physiology III	Exhibit Hall, Room 206
Ruminant Nutrition and Forages I	Exhibit Hall, Room 206
Ruminant Nutrition and Forages II	205IJ
Teaching I	Exhibit Hall, Room 206
Teaching II	140
<b>Tuesday PM</b>	
Animal Behavior, Housing, and Well-Being II	Exhibit Hall, Room 206
Breeding and Genetics II	205E
Breeding and Genetics III	Exhibit Hall, Room 206

Growth, Development, Muscle 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