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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.adsa.asas.org/midwest/2008> 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.

REGISTRATION

Convention Center, Lobby

Monday, March 17, 9:30 a.m. – 7:30 p.m.

Tuesday, March 18, 7:00 a.m. – 4:00 p.m.

Wednesday, March 19, 9:00 a.m. – 11:00 a.m.

	Before February 29	After February 29
ADSA/ASAS Members	\$110	\$160
Undergraduate Students	\$10	\$10
Graduate Student Members	\$20	\$30
Post Doctoral Fellow Members	\$20	\$30
ASAS-ADSA Fellows	\$0	\$0
Nonmembers	***\$220	\$260
Graduate Student Nonmembers	***\$40	\$50
Post Doctoral Fellow Nonmembers	***\$75	\$85

***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 **February 29, 2008**. No refunds will be issued on ticketed events.

IMPORTANT PHONE NUMBERS

Meeting Registration Desk:	515/242-2570
Renaissance Savery Hotel:.....	515/244-2151
Holiday Inn Downtown:	515/283-0151
Hotel Fort Des Moines:.....	515/243-1161
Embassy Suites:	515/244-1700
Marriott:	515/245-5500

REMINDER

All Food Functions in Room 206

Monday Night Reception 6:00 PM

Tuesday Night Reception 6:00 PM

Wednesday Morning Awards Breakfast 6:45 AM

Registration and housing forms can be
found on the web.

www.adsa.asas.org/midwest/2008

Looking for a new job? Is your company hiring?

The 2008 Placement Center could be the answer!

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 descriptions and résumés to the Placement Center at the 2008 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 of companies, universities, and governmental agencies are represented each year at the Midwest 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 19, 2007.

**The Placement Center —
New opportunities are waiting!**

SCHEDULE OF EVENTS

Monday, March 17

- 8:00 AM ASAS/ADSA Midwest Board of Directors, Renaissance Savery Hotel
- 12:00 PM Graduate Student Competitive Research Papers, M.S. Oral Division, 146
- 12:30 PM Undergraduate Student Competitive Research Papers, Oral Division, 138-140
- 1:00 PM David H. Baker Amino Acid Symposium, 204FG
- 1:30 PM Graduate Student Competitive Research Papers, Ph.D. Oral Division, 134
- 2:00 PM ARPAS Exams, Convention Center, Board Room
- 4:30 PM Poster Presentations, Convention Center Complex, Exhibit Hall, Room 206
- 6:00 PM Reception, Convention Center Complex, Exhibit Hall, Room 206
- 7:30 PM AQ - Quiz Bowl Finals, Room 204FG

Tuesday, March 18, AM

- 6:30 AM Program Committee Meeting, Renaissance Savery Hotel
- 8:00 AM Animal Behavior, Housing, & Well Being Symposium: Swine Well-Being Issues: How are they being addressed? 142-144
- 8:00 AM Billy N. Day Symposium: Delivering Semen to the Swine Industry, 138-140
- 8:00 AM Breeding and Genetics I, 148
- 8:00 AM Nonruminant Nutrition I: Distillers Grains, 204FG
- 8:00 AM Ruminant Nutrition I: Byproducts, 204AB
- 8:30 AM Beef/Small Ruminant Extension I: Sulfur in Ruminant Diets Symposium, 134
- 9:00 AM Ruminant Nutrition II: Dairy, 205IJ
- 9:00 AM ARPAS Exams, Convention Center, Board Room
- 10:00 AM Swine Extension I, 146
- 11:30 AM Box Lunch, Convention Center Complex, Exhibit Hall
- 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 with badge). 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 for sale will be on a first-come basis.

Tuesday, March 18, PM

- 1:00 PM Dairy Extension Symposium: Focus on Forages — Facts and Fantasies, 204AB
- 1:00 PM Nonruminant Nutrition II: Alternative Ingredients, 142-144

- 1:00 PM Physiology I, Nutritional Physiology: The role of nutrition in reproduction symposium, 138-140
- 1:30 PM Nonruminant Nutrition III: Amino Acids and Additives, 204FG
- 2:00 PM Joint Swine Extension II and Growth, Development, Muscle Biology, and Meat Science I: Changing the dietary fatty acid profile and its influence on carcass composition, muscle biology, and meat characteristics symposium, 205IJ
- 2:00 p.m. ARPAS Exams, Convention Center, Board Room
- 3:30 PM Physiology II: Nutritional Physiology, 138-140
- 4:30 PM Poster Presentations, Exhibit Hall, 206
- 6:00 PM Reception, Convention Complex, Exhibit Hall

Wednesday, March 19, AM

- 6:45 AM Breakfast, Business Meeting, Awards Program, Convention Center Complex, Exhibit Hall
- 9:00 AM Beef/Small Ruminant Extension II: Feedlot Management, 136
- 9:00 AM Breeding and Genetics II: Genetic Control of Feed Utilization Symposium, 142-144
- 9:00 AM Growth, Development, Muscle Biology, and Meat Science II, 134
- 9:00 AM Nonruminant Nutrition IV: Sow and Mineral Nutrition, 204FG
- 9:00 AM Odor and Nutrient Management, 146
- 9:00 AM Physiology III: Reproductive Physiology, 138-140
- 9:00 AM Ruminant Nutrition III: Metabolism & Rumen Function, 204AB
- 12:30 PM ASAS/ADSA Midwest Board of Directors, Renaissance Savery Hotel

<p>NOTE: All recording devices (audio, video, and still) are prohibited from oral and poster sessions unless approved in advance by MW ASAS Secretary.</p>

Poster Schedule

All posters will be in the Exhibit Hall (Room 206) and will be in place from Monday at 1:00 PM until Noon on Wednesday. Authors are to be present on their assigned day from 4:30 PM to 6:00 PM. Posters entered in Graduate and Undergraduate Research Paper Competitions have been incorporated into their appropriate disciplinary sections. Judging of competition posters will take place during the Monday poster session from 4:30 PM to 6:00 PM.

Monday, March 17

All authors present from 4:30 PM – 6:00 PM

**Graduate Student Competitive Research Papers, M.S.
Graduate Student Competitive Research Papers, Ph.D.
Undergraduate Student Competitive Research Papers
Animal Behavior, Housing and Well Being
Nonruminant Nutrition - Session I
Physiology
Ruminant Nutrition – Session I**

Tuesday, March 18

All authors present from 4:30 PM – 6:00 PM

**Beef Extension
Breeding and Genetics
Growth, Development, Muscle Biology, and Meat Science
Nonruminant Nutrition - Session II
Odor and Nutrient Management
Ruminant Nutrition – Session II
Swine Extension**

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 2008 meeting to the following companies:

Outstanding Young Scientist Awards

Extension - Land O'Lakes, Purina Feed, LLC

Research - DSM Nutritional Products, Inc.

Teaching - Archer Daniels Midland Company

National Pork Board Swine Innovation (Abstract) Awards

Research - National Pork Board

Research - National Pork Board

Education - National Pork Board

Innovation in Dairy Research Award

Land O'Lakes, Purina Feed, LLC

Agribusiness Award

ExSeed Genetics

Student Competition Paper Awards

Graduate M.S., Oral - DeKalb Feeds, Inc.

Graduate Ph.D., Oral - Akey

Graduate M.S., Poster - Cargill Animal Nutrition

Graduate Ph.D., Poster - Cargill Animal Nutrition

Undergraduate, Oral - Murphy-Brown LLC, Western Operations

Undergraduate, Poster - ADSA ASAS MW Board

Academic Quadrathlon

Intervet, Inc.

Iowa State University

Breakfast (Wednesday)

APC, Inc.

Fort Dodge Animal Health

Land O'Lakes, Purina Feed, LLC

VetLife

Cyber Café & Placement Center

Feedstuffs Newspaper

Abstract Book

Fort Dodge Animal Health

Program Book Sponsor

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Poster Sponsor

Zinpro

Refreshment Break

Kemin Agri Foods North America, Inc.

David H. Baker Amino Acid Symposium

David H. Baker Appreciation Club

Billy N. Day Symposium

Billy N. Day Appreciation Club

Animal Behavior, Housing, & Well Being Symposium

American Society of Animal Science

Program Sponsors

Breeding and Genetics I

Pig Improvement Company

Nonruminant Nutrition I

JBS United, Inc.

Nonruminant Nutrition II

Kent Feeds, Inc.

Nonruminant Nutrition III

Kent Feeds, Inc.

Nonruminant Nutrition IV

Alltech, Inc.

General Meeting

Ajinomoto Heartland LLC

American Angus Association

Babcock Genetics, Inc.

BASF Corporation Animal Nutrition

DSM Nutritional Products, Inc.

Elanco Animal Health

GeneSeek Inc.

Hormel Foods Corporation

ILC Resources

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APC, Inc.
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DeKalb Feeds, Inc.
ExSeed Genetics
GeneSeek Inc.
Hormel Foods Corporation
ILC Resources
International Ingredient Corporation
Luca USA Inc.
Pig Improvement Company, Inc.

PREPARATION GUIDELINES FOR ORAL PRESENTATIONS — LCD

Collection of PowerPoint Files Prior to Meeting

Each room will be equipped with a computer and an LCD projector. Again for 2008, in an effort to maximize efficiency onsite and to avoid possible technical issues, we will be collecting PowerPoint files for oral presentations only prior to the meeting. After all presentations have been collected, they will be distributed to the appropriate program chair on site prior to the start of the session. To ensure a smooth presentation, it is critical that you read and follow the instructions provided. Click the link provided below for detailed instructions for creating and submitting your presentations. <http://www.adsa.asas.org/midwest/2008/insppt.htm>

Upload Process

Presentations must be submitted electronically through our upload site at:

<http://www.fass-abstracts.org/meetinginfo.asp?meetingcode=130>

This is the same application used to submit the meeting abstracts. Select the “Login and Manage Abstracts” Link and be sure to use the same account login information that was created at the time of submission. If you do not recall this information, use the “forgot password” link on the login page. Once you are logged in, click the “add/manage documents” link for your abstract in the table to go to the upload page.

If you are an invited speaker **AND** you did not upload an abstract, please upload your presentation here:

http://www.fass-abstracts.org/invited_papers/?meetingcode=130

Upload Deadlines

The deadline for final presentations to be submitted is: Monday, March 10, 2008 11:59 PM, Central Standard Time

By using the upload site, PPT files will be linked to the already submitted abstract. Editing will not be allowed on existing abstracts.

There is not a file size limit for uploading presentations, but please be aware that uploading large files will be hindered by connection speeds.

All presentations must be uploaded in PowerPoint format on or before Monday, March 10, 2007 11:59 PM Central Standard Time.

POSTER SESSIONS

All posters will be in the Convention Complex, Exhibit Hall, Room 206 from **Monday 1:00 PM until Wednesday, Noon**. See each session to find out when authors are to be present.

POSTERS PRESENTED

Monday, March 17 – 4:30–6:00 PM

Tuesday, March 18 – 4:30–6:00 PM

SCIENTIFIC SESSIONS

Monday, March 17

SYMPOSIA AND ORAL SESSIONS

Graduate Student Competitive Research Papers, M.S. Oral Division

Chair: Marc L. Bauer, North Dakota State University, Fargo

146

Sponsored by: DeKalb Feeds, Inc.

- 12:00 PM 80 **Copper supplementation promotes growth of piglets in the presence of dietary ZnO and antibiotic (carbadox).** V. Perez-Mendoza*¹, M. Steidinger², T. Ward³, and J. Pettigrew¹, ¹University of Illinois, Urbana, IL, ²Swine Nutrition Services Inc., Anchor, IL, ³Zinpro Corporation, Eden Prairie, MN.
- 12:15 PM 81 **Effects of maternal selenium (Se) and dietary restriction on glucose concentrations and placental endothelial nitric oxide synthase (eNOS) expression in the pregnant ewe.** L.A. Lekatz*¹, J.J. Reed¹, R.M. Weigl¹, T.L. Neville¹, J.S. Caton¹, J.B. Taylor², D.A. Redmer¹, L.P. Reynolds¹, and K.A. Vonnahme¹, ¹North Dakota State University, Fargo, ND, USA, ²USDA-ARS, Sheep Experiment Station, Dubois, ID, USA.
- 12:30 PM 82 **Effect of the grains to solubles ratio in diets containing wet distillers grains fed to feedlot steers.** C. M. Godsey*, M. K. Luebbe, G. E. Erickson, and T. J. Klopfenstein, University of Nebraska, Lincoln, Nebraska.
- 12:45 PM 83 **Effects of temperature stress on growth performance and bacon quality of grow-finish pigs housed at two housing densities.** H. M. White*, M. A. Latour, and S. S. Donkin, Purdue University, West Lafayette, IN, USA.
- 1:00 PM 84 **Nutritional value of flaxseed meal and its effects on pig growth and carcass composition.** L. Eastwood*, P. Kish, J.F. Patience, and P. Leterme, Prairie Swine Centre Inc., 2105 - 8th Street East, Saskatoon, SK, S7H 5N9, Canada.
- 1:15 PM **Break.**
- 1:30 PM 85 **Candidate gene association studies for hernia and cryptorchidism in commercial lines of pigs.** X. Zhao*¹, Z.-Q. Du¹, N.V. Vukasinovic², F. Rodriguez², A.C. Clutter², and M.F. Rothschild¹, ¹Iowa State University, Ames, IA, USA, ²Monsanto Company, Saint Louis, MO, USA.
- 1:45 PM 86 **Site and extent of nutrient digestion in lambs fed high-linoleate safflower fat as whole seeds, cracked seeds, or oil extracted from seeds.** P.L. Price*, V. Nayigihugu, D.C. Rule, and B.W. Hess, University of Wyoming, Laramie, Wyoming, United States.
- 2:00 PM 87 **Effect of standing estrus on LH pulses and subsequent progesterone following a fixed-time AI protocol.** S. D. Fields*, B. L. Perry, and G. A. Perry, South Dakota State University, Brookings, South Dakota, USA.
- 2:15 PM 88 **Use of 20% dried distillers grains with solubles (DDGS) and high amounts of synthetic amino acids to replace soybean meal in grower-finisher swine diets.** A.J. Drescher*¹, L.J. Johnston¹, G.C. Shurson¹, and J. Goihl², ¹University of Minnesota, St. Paul, MN, USA, ²Agri-Nutrition Services, Inc., Shakopee, MN, USA.

- 2:30 PM 89 **Effect of diet and sire on the rates of back fat and marbling deposition in feedlot cattle.** C.O. Trejo*, L.L. Berger, and T.G. Nash, *University of Illinois, Urbana, Illinois, USA.*
- 2:45 PM **Break.**
- 3:00 PM 90 **Phosphorylation of Perilipin is associated with lipolytic activity in dairy cow.** D. Elkins*, H. Park, and D. Spurlock, *Iowa State University, Ames, IA, USA.*
- 3:15 PM 91 **Determining the optimum ratio of dietary tryptophan to lysine in growing pigs fed non-U.S.-type ingredients.** A. D. Quant*¹, M. D. Lindemann¹, G. L. Cromwell¹, B. J. Kerr², and R. L. Payne³, ¹*University of Kentucky, Lexington, KY*, ²*USDA, Ames, IA*, ³*Degussa Corporation, Kennesaw, GA.*
- 3:30 PM 92 **Exercise can improve bone quality in confined gilts.** J.M. Mapes*, C.I. O'Connor-Robison, G.M. Hill, J.E. Link, D.S. Rosenstein, and M.W. Orth, *Michigan State University, East Lansing, MI, USA.*
- 3:45 PM 93 **Performance of lactating dairy cows to increasing concentrations of dried distillers grains with solubles on milk production and composition.** K. A. Christen*, K. F. Kalscheur, B. W. Pamp, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University, Brookings, South Dakota, USA.*
- 4:00 PM 94 **Comparison of dried whey permeate (DWP) and a carbohydrate product (CHO) in diets for nursery pigs.** V. D. Naranjo*, T. D. Bidner, and L. L. Southern, *LSU Agricultural Center, Baton Rouge, LA, USA.*

Undergraduate Student Competitive Research Papers, Oral Division
Chair: Gretchen M. Hill, Michigan State University, East Lansing
138-140

Sponsored by: Murphy-Brown LLC, Western Operations

- 12:30 PM 288 **Forage quality and grazing performance of beef cattle grazing brown mid-rib grain sorghum residue.** A.K. Schwarz*¹, C.M. Godsey¹, M.K. Luebbe¹, G.E. Erickson¹, T.J. Klopfenstein¹, R.B. Mitchell², and J.F. Pedersen², ¹*University of Nebraska, Lincoln, NE USA*, ²*USDA, ARS, Lincoln, NE USA.*
- 12:45 PM 289 **Survey of mortality in multi-source nurseries.** J. Graham*¹, J. Waddell², and K. Bruns¹, ¹*South Dakota State University, Brookings, SD, USA*, ²*Sutton Veterinary Clinic, Sutton, NE.*
- 1:00 PM 290 **Feed value of dry distillers grains plus solubles for feedlot lambs.** Y. Diaz*, A. Islas, D. Hallford, and S. A. Soto-Navarro, *Department of Animal and Range Sciences; New Mexico State University, Las Cruces, NM USA.*
- 1:15 PM 291 **Influence of maternal nutrition on cellular proliferation rates of placental tissues in singleton ovine adolescent pregnancies at Day 50 and 75 of gestation.** L. Rensink*¹, R. Aitken³, J. Milne³, P. Borowicz², A. Scheaffer¹, D. Carlson², L. Reynolds², J. Wallace³, and D. Redmer², ¹*Northwestern College, Orange City, IA, USA*, ²*North Dakota State University, Fargo, ND, USA*, ³*Rowett Research Institute, Brucksburn, Aberdeen, UK.*
- 1:30 PM 292 **Nitrogen utilization in horses fed grass and alfalfa hay.** A. L. Minella*, J. Liesman, and N. L. Trotter, *Michigan State University, East Lansing, MI, USA.*
- 1:45 PM **Break.**
- 2:00 PM 293 **Effects of ergotamine-D tartrate on bovine oocyte maturation: a proposed study.** J.M. Douglas* and K.L. Jones, *Southern Illinois University Carbondale - Animal Science, Food and Nutrition, Cabondale, IL USA.*

- 2:15 PM 294 **Ewe nutrition during pregnancy influences offspring wool production and wool follicle development.** W.V. Haux*, K.A. Vonnahme, K.C. Kraft, T.L. Neville, J.J. Reed, D.A. Redmer, C.J. Hammer, L.P. Reynolds, J.S. Caton, and J.S. Luther, *Center for Nutrition and Pregnancy, Department of Animal Sciences, North Dakota State University, Fargo, ND, USA.*
- 2:30 PM 295 **Coat shedding among Angus cows and its correlation among progeny.** H.D. Sigal*, K.A. Gray, and J.P. Cassidy, *North Carolina State University, Raleigh, NC, US.*
- 2:45 PM 296 **The effect of condensed corn solubles on in vitro dry matter disappearance of low-quality forages.** T.M. Krafft*, T.T. Marston, and K.W. Harborth, *Kansas State University, Manhattan, Kansas, USA.*
- 3:00 PM **Break.**
- 3:15 PM 297 **Expression of basic fibroblast growth factor (FGF2) and receptor (R) IIIc in uterine tissues during early pregnancy in sheep.** M. A. Minten*, L. P. Reynolds, M. L. Johnson, P. P. Borowicz, D. A. Redmer, A. T. Grazul-Bilska, and J. J. Bilski, *Dept. of Anim. Sci. and Center for Nutrition and Pregnancy, Fargo, ND, USA.*
- 3:30 PM 298 **Effects of administration of bovine colostrum extract (First Pulse® D) on growth, livability and acute phase proteins of disadvantaged pigs in a commercial swine production facility.** J.M. Pomeranke*¹, J.S. Knott², R.W. Fent², and G.C. Shurson¹, ¹*University of Minnesota, St. Paul, MN, USA,* ²*Ralco Nutrition Inc., Marshall, MN, USA.*
- 3:45 PM 299 **Changes in myoblast activity during pig development are not explained by inherent differences in phenotype or global gene expression patterns.** B.L. Varnes*, E.E. Helman, C.W. Ernst, J.W. Reum, R.J. Tempelman, A.M. Ramos, and M.E. Doumit, *Michigan State University, East Lansing, MI USA.*
- 4:00 PM 300 **Effects of maternal nutrition and selenium status on offspring muscle growth and quality.** E. Harris*, J. Caton, W. Keller, P. Berg, K. Vonnahme, D. Redmer, L. Reynolds, and K. Maddock Carlin, *North Dakota State University, Fargo, ND, USA.*

David H. Baker Amino Acid Symposium
Chair: Kevin M. Halpin, International Ingredient Corp.,
Fenton (St. Louis), MO
204FG

Sponsored by: David H. Baker Appreciation Club

- 1:00 PM **Introduction.** Kevin M. Halpin.
- 1:05 PM 51 **(Invited) Recent developments in human amino acid nutrition.** P. Pencharz*¹, ¹*Hospital for Sick Children, Toronto, Ontario, Canada,* ²*University of Toronto, Toronto, Ontario, Canada.*
- 1:40 PM **Comments.** David H. Baker.
- 1:45 PM 52 **Cyst(e)ine imbalance and its effect on methionine precursor utilization in chicks.** R. N. Dilger* and D. H. Baker, *University of Illinois, Urbana, IL, USA.*
- 2:00 PM 53 **(Invited) Amino acid idiosyncrasies of the cat.** Q. Rogers*, *University of California, Davis, CA, USA.*
- 2:35 PM **Break.**

- 2:50 PM 54 **(Invited) The valine requirement of the young pig and its significance in practical feed formulation.** A.M. Gaines*¹ and D.C. Kendall², ¹*The Maschhoffs Inc., Carlyle, IL, USA*, ²*Murphy Brown LLC, Rose Hill, NC, USA*.
- 3:25 PM 55 **Determination of the lysine requirement and the order of limiting amino acids in diets for 20- to 40-kilogram pigs.** M. Roux¹, A. Donsbough*¹, A. Waguespack¹, T. Bidner¹, L. Southern¹, and R. Payne², ¹*LSU Agricultural Center, Baton Rouge, LA, USA*, ²*Degussa Corporation, Kennesaw, GA, USA*.
- 3:40 PM 56 **(Invited) Regulatory science and the use of amino acids, proteins and related compounds in animal feed.** G. Graber*, *AFSS Consulting, Gaithersburg, MD, USA*.
- 4:15 PM **Comments.** David H. Baker.
- 4:25 PM **Discussion.**

**Graduate Student Competitive Research Papers, Ph.D. Oral Division
Chair: Matthew Wilson, West Virginia University, Morgantown**

134

Sponsored by: Akey

- 1:30 PM 95 **Growth performance and the development of antibiotic resistant *E. coli* in pigs fed growth-promoting antimicrobials.** J. P. Holt*, E. van Heugten, A. K. Graves, M. T. See, and W. E. M. Morrow, *North Carolina State University, Raleigh, North Carolina, USA*.
- 1:45 PM 96 **Digestibility and fermentation parameters of barleys and oats differing in β -glucan content in the pig intestines.** R. Jha*¹, B. Rossnagel², R. Pieper³, A. Van Kessel², and P. Leterme¹, ¹*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, ²*University of Saskatchewan, Saskatoon, Canada*, ³*FBN-Ernährungsphysiologie, Dummerstorf, Germany*.
- 2:00 PM 97 **Effects of corn processing and wet distiller's grains on metabolism in steers.** M. E. Corrigan*, G. E. Erickson, T. J. Klopfenstein, N. F. Meyer, C. D. Buckner, and S. J. Vanness, *University of Nebraska, Lincoln*.
- 2:15 PM 98 **Assessment of the influence of proximate fractions in meat and bone meals on their apparent nitrogen-corrected metabolizable energy content.** O. A. Olukosi* and O. Adeola, *Purdue University, West Lafayette, IN, USA*.
- 2:30 PM **Break.**
- 2:45 PM 99 **The effect of eicosapentaenoic acid on markers of cartilage degradation in porcine articular cartilage in vitro.** C.I. O'Connor-Robison*, J.M. Mapes, and M.W. Orth, *Michigan State University, East Lansing, MI, USA*.
- 3:00 PM 100 **Effect of dietary vitamin a on finishing beef cattle.** C. L. Pickworth*, S. C. Loerch, and F. L. Fluharty, *The Ohio State University, Wooster, OH USA*.
- 3:15 PM 101 **Effect of wintering system, nutrition around breeding, and prostaglandin on gain and reproduction in beef heifers.** D.M. Larson*¹, R.D. Richardson², and R.N. Funston³, ¹*University of Nebraska, Lincoln, NE USA*, ²*Rex Ranch, Ashby, NE USA*, ³*West Central Research and Extension Center, North Platte, NE USA*.
- 3:30 PM 102 **Acute phase responses in piglets fed diets containing non-starch polysaccharide (NSP) hydrolysis products and egg yolk antibodies upon *Escherichia coli* K88 oral challenge.** E. Kiarie*, B.A Slominski, D.O Krause, and C. M. Nyachoti, *University of Manitoba, Winnipeg, MB, Canada*.

POSTER PRESENTATIONS

All posters will be in the Exhibit Hall (Room 206) and will be in place from Monday at 1:00 PM until Noon on Wednesday. Authors are to be present on their assigned day from 4:30 PM to 6:00 PM. Posters entered in Graduate and Undergraduate Research Paper Competitions have been incorporated into their appropriate disciplinary sections (Beef Extension, BE; Breeding and Genetics, BG; Growth, Development, Muscle Biology, and Meat Science, GDM; Nonruminant Nutrition, NN; Physiology, P; Ruminant Nutrition, RN). **Judging of competition posters will take place during the Monday poster session from 4:30 PM to 6:00 PM.**

Graduate Student Competitive Research Papers, M.S. Poster Division Chair: Ellen Davis, Agtech Products, Waukesha, WI Exhibit Hall

- 103 BG Competition effects in a Large White/Landrace composite population of pigs. W. L. Hsu*¹, R. K. Johnson¹, and L. D. Van Vleck^{1,2}, ¹Department of Animal Science, University of Nebraska, Lincoln, NE, U.S.A 68583, ²USMARC, ARS, USDA, Lincoln, NE, U.S.A 68583.
- 104 BE The effect of the Kentucky Beef Cattle Genetics Improvement Program on real-time ultrasound carcass traits, performance and pelvic measurement of heifers enrolled in the Eastern Kentucky Heifer Development Program. B. Galbreath*, H. Nauman, P. Prater, K. Peterson, J. Willard, J.M. Phillips, and T. Wistuba, Morehead State University, Morehead, KY.
- 106 RN Evaluation of milk components, fatty acid profile, and production of cows fed rolled flaxseed on two commercial dairies. N.R. Bork*¹, G.P. Lardy¹, J.W. Schroeder¹, K.A. Vonnahme¹, P.M. Fricke³, K.B. Koch¹, K.G. Odde², R.D. Shaver³, and S.J. Bertics³, ¹North Dakota State University, Fargo, ND, USA, ²Kansas State University, Manhattan, KS, USA, ³University of Wisconsin-Madison, Madison, WI, USA.
- 107 RN Effects of high dietary nitrate on feed intake, weight, and plasma parameters in sheep. R. Cockrum*, K. Austin, P. Ludden, and K. Cammack, University of Wyoming, Laramie, WY, USA.
- 108 RN Effects of glycerol on cow and calf performance in creep rations. C. Fleenor*, S. Lake, M. Claeys, P. Gunn, and R. Lemenager, Purdue University, West Lafayette, IN.
- 109 RN Comparison of two grain adaptation systems, one with forage and another using wet corn gluten feed, on ruminal pH, feed intake, and digestibility of feedlot cattle. T.J. Huls*, N.F. Meyer, G.E. Erickson, and T.J. Klopfenstein, University of Nebraska, Lincoln, NE.
- 110 RN Canola meal replacing dried distillers grains with solubles in lactating dairy cow diets. C.N. Mulrooney*, D.J. Schingoethe, K.F. Kalscheur, and A.R. Hippen, South Dakota State University, Brookings, SD, USA.

Graduate Student Competitive Research Papers, Ph.D. Poster Division
Chair: Ellen Davis, Agtech Products, Waukesha, WI
Exhibit Hall

- 111 GDM Finishing diets containing wet distillers grains plus solubles affect shelf life of beef. A.S. de Mello Junior*, C.R. Calkins, B.E. Jenschke, L.S. Senaratne, and G.E. Erickson, *University of Nebraska-Lincoln, Lincoln, NE, USA.*
- 112 GDM Impact of birth weight on growth performance and carcass characteristics of pigs – a retrospective analysis. B. A. Peterson*¹, M. Ellis¹, R. Bowman², N. H. Williams³, and B. F. Wolter², ¹*University of Illinois, Urbana, IL, USA,* ²*The Maschhoffs, Inc., Carlyle, IL, USA,* ³*PIC USA, Franklin, KY, USA.*
- 113 P Use of transcriptional profiling to understand genetic mechanisms responding to fasting in pigs. Sender Lkhagvadorj*¹, Long Qu¹, Oliver Couture¹, Jack Dekkers¹, and Chris Tuggle¹, ¹*Iowa State University, Ames,* ²*United States Department of Agriculture Animal Research Service, Athens,* ³*University of Georgia, Athens.*
- 114 NN Effects of replacement of corn with rice in weaned pig diets under commercial conditions. M.T. Che*¹, M.U. Steidinger², and J.E. Pettigrew¹, ¹*Department of Animal Sciences, University of Illinois, Urbana, IL 61801,* ²*Swine Nutrition Services Inc., Anchor, IL.*
- 115 RN Autocrine signaling mechanism of vitamin D in the bovine innate immune response. C.D. Nelson*^{1,3}, D.C. Beitz^{1,2}, T.A. Reinhardt³, and J.L. Lippolis³, ¹*Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University,* ²*Department of Animal Science, Iowa State University, Ames, IA 50011, USA,* ³*Periparturient Diseases of Cattle Research Unit, National Animal Disease Center, Agriculture Research Service, United States Department of Agriculture, 2300 Dayton Ave, Ames, IA 50010, USA.*

Undergraduate Student Competitive Research Papers, Poster Division
Chair: Gretchen M. Hill, Michigan State University, East Lansing
Exhibit Hall

- 301 P Evidence for locally-produced prolactin in equine ovaries. T. Marlo*, K.L. Jones, D. Hastings, H. Heath, and S.S. King, *Southern Illinois University-Carbondale, Carbondale, IL, USA.*
- 302 NN Efficacy of oral electrolyte supplementation for growth enhancement of weanling piglets. Paula Matuszak* and Gary Onan, *University of Wisconsin-River Falls, River Falls, WI USA.*
- 303 RN The effects of extruding distillers grain on particle size and extruder emissions. J.D. Lee*¹, P.M. Walker¹, A.L. Shreck¹, and G.A. Apgar², ¹*Illinois State University, Normal, IL USA,* ²*Southern Illinois University, Carbondale, IL USA.*
- 304 RN Economic analysis of beef cattle finishing diets containing corn and soybean co-products. D.S. Stoner*¹, P.M. Walker¹, and L.A. Forster², ¹*Illinois State University, Normal, IL USA,* ²*Archer Daniels Midland Company, Decatur, IL USA.*

Animal Behavior, Housing and Well Being - Posters
Chair: Anna Johnson, Iowa State University, Ames
Exhibit Hall

- 1 Sensitivity and specificity of lameness assessment in sows. L. Anil*, S. S. Anil, and J. Deen, *University of Minnesota, St. Paul.*

- 2 **Evaluation of an analgesic intervention based decision-support system for sow removals for lameness on sow performance.** S. S. Anil*¹, L. Anil¹, J. Deen¹, S. L. Van Westen², and S. K. Baidoo², ¹*University of Minnesota, St. Paul*, ²*University of Minnesota, Waseca*.
- 3 **Endocrine response to acute stress in pigs with differing backtest scores.** J. P. Cassidy*, J. L. Cagle, B. J. Skelly, K. M. Youngs, and C. S. Whisnant, *North Carolina State University, Raleigh, NC, US*.
- 4 **Influence of crowding stress of pigs during the nursery period on growth and subsequent reproductive performance.** B. G. Kim*, M. D. Lindemann, H. J. Monegue, and G. L. Cromwell, *University of Kentucky, Lexington*.
- 5 **The effects of feeder space and feed form on pig growth performance and carcass yield in a commercial wean-to-finish facility.** B. A. Peterson*¹, M. Ellis¹, R. Bowman², O. Mendoza¹, A. Rojo¹, and B. F. Wolter², ¹*University of Illinois, Urbana*, ²*The Maschhoffs, Inc., Carlyle, IL*.
- 6 **Dietary inclusion of Colicin E: Effect on pig behavior.** A. K. Johnson*¹, T. Hoff¹, L. Sadler¹, and C. H. Stahl², ¹*Iowa State University, Ames*, ²*North Carolina State University, Raleigh*.
- 7 **Relationships between feeding behaviors in Boer bucks.** S. Chavez*, Q. Baptiste, and E. E. D. Felton, *West Virginia University, Morgantown*.
- 8 **Effect of trailer floor space allowance on environmental conditions inside a livestock trailer.** C. M. Murphy*¹, M. Ellis¹, R. Bowman², J. Brinkman², T. Funk¹, A. Lenkaitis¹, X. Wang¹, and B. F. Wolter², ¹*University of Illinois, Urbana*, ²*The Maschhoffs, Inc., Carlyle, IL*.
- 9 **Effects of swine transport trailer design and season on environmental conditions in the trailer during transport of market weight pigs.** C. M. Murphy*¹, M. Ellis¹, D. Orellana¹, R. Bowman², B. A. Peterson¹, M. J. Ritter¹, J. M. Young¹, and B. F. Wolter², ¹*University of Illinois, Urbana*, ²*The Maschhoffs, Inc., Carlyle, IL*.
- 10 **Piglet mortality in an outdoor farrowing hut: What behaviors contribute to their demise?** J. R. Garvey*¹, J. J. McGlone², L. J. Sadler¹, and A. K. Johnson¹, ¹*Iowa State University, Ames*, ²*Pork Industry Institute, Texas Tech University, Lubbock*.
- 11 **Behavioral validation for nursery pigs.** J. M. Bowden*¹, A. K. Johnson², K. J. Stalder², and L. A. Karriker¹, ¹*Iowa State University, Ames, IA*, ²*Department of Animal Science, Iowa State University, Ames, IA*.
- 12 **Validation of scan sampling techniques for lactating sows kept outdoors.** A. K. Johnson*¹ and J. J. McGlone², ¹*Iowa State University, Ames*, ²*Pork Industry Institute, Texas Tech University, Lubbock*.

Nonruminant Nutrition - Posters Session I Exhibit Hall

- 167 **Effects of nutrition during gilt development on lifetime productivity of sows of 2 prolific maternal lines: Summary of growth characteristics and sow productivity.** P. S. Miller*, R. K. Johnson, M. W. Anderson, and R. Moreno, *University of Nebraska, Lincoln*.
- 168 **Effects of restricting energy intake during development and genetic line on productivity through three parities.** R. K. Johnson*, P. S. Miller, M. W. Anderson, and R. Moreno, *University of Nebraska, Lincoln*.
- 169 **Effects of sow parity and L-arginine treatment during early gestation on litter size and birth weight.** M. Hahn*¹, S. Town¹, M. Smit¹, J. Patterson¹, A. Pasternak¹, D. Guggenbiller², C. Smits³, P. Ramaecker³, M. Dyck¹, and G. Foxcroft¹, ¹*Swine Research & Technology Centre, University of Alberta, Edmonton, Alberta, Canada*,

²Trouw Nutrition, Highland, IL, ³Nutreco Swine Research Centre, Sint Anthonis, The Netherlands.

- 170 **Effects of different creep feeder designs and feed accessibility on proportion of piglets consuming creep feed and litter performance.** R. C. Sulabo*, M. D. Tokach, J. L. Nelssen, S. S. Dritz, R. D. Goodband, and J. M. DeRouchey, *Kansas State University, Manhattan.*
- 171 **Effect of dietary vitamin levels and group size on performance of growing pigs.** Y. Huang*¹, Y. Wang¹, J. H. Cho¹, Y. J. Chen¹, J. S. Yoo¹, H. J. Kim¹, K. Y. Whang², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²Korea University, Seoul, Korea.
- 302 **Efficacy of oral electrolyte supplementation for growth enhancement of weanling piglets.** Paula Matuszak* and Gary Onan, *University of Wisconsin-River Falls, River Falls, WI USA.*
- 172 **Effects of combinational uses of zinc sulfate and zinc-amino acid chelate on zinc bioavailability in broiler chickens.** S. J. Park*¹, B. J. Min², R. A. Royce³, and S. W. Kim², ¹Texas Tech University, Lubbock, ²North Carolina State University, Raleigh, ³Albion-Advanced Nutrition, Clearfield, UT.
- 173 **Effects of single or multi-enzyme preparations supplementation in corn distillers dried grains with solubles diet on growth performance, nutrients digestibility and serum characteristics in 50 kg pigs.** Y. Wang*¹, J. H. Cho¹, Y. J. Chen¹, J. S. Yoo¹, Y. Huang¹, H. J. Kim¹, S. O. Shin¹, I. H. Kim¹, H. K. Moon², and I. C. Kim², ¹Dankook University, Cheonan, Choongnam, Korea, ²National Institute of Animal Science, Seonghwan, Choongnam, Korea.
- 174 **Amino acid and energy digestibility of two different sources of soy hulls for swine.** J. Y. Jacela*, J. M. DeRouchey, S. S. Dritz, M. D. Tokach, R. D. Goodband, J. L. Nelssen, and R. C. Sulabo, *Kansas State University, Manhattan.*
- 175 **Dietary lysine levels on carcass composition, meat quality, and growth performance in growing-finishing pigs.** P. S. Hco*, C. K. Park, Y. H. Jin, E. J. Jun, H. K. Oh, and Y. Y. Kim, *Seoul National University, Seoul, Korea.*
- 176 **Effects of dietary probiotic complex(*Lactobacillus acidophilus*, *Bacillus subtilis* & *Aspergillus oryzae*) on growth performance, blood immunological parameters and fecal malodor gas emission in growing pigs.** H. D. Jang*¹, H. J. Kim¹, J. H. Cho¹, Y. J. Chen¹, J. S. Yoo¹, K. Y. Whang², I. H. Kim¹, J. C. Park³, and H. J. Jung³, ¹Dankook University, Cheonan, Choongnam, Korea, ²Korea University, Seoul, Korea, ³National Institute of Animal Science, SeongHwan, Korea.
- 177 **Effects of transgenic *Bacillus subtilis* secreting chitinase supplementation on growth performance, nutrient digestibility, blood characteristics and carcass traits in finishing pigs.** H. J. Kim*¹, J. H. Cho¹, Y. J. Chen¹, J. S. Yoo¹, Y. Wang¹, Y. Huang¹, K. Y. Whang², and I. H. Kim¹, ¹Dankook University, Cheonan, Choongnam, Korea, ²Korea University, Seoul, Korea.
- 178 **VevoVital® supplementation on the performance, nutrient digestibility, blood profile and ammonia gas emission in weaning and growing pigs.** S. K. Jang*, Y. H. Choi, Y. H. Jin, L. G. Pao, Y. S. Noh, and Y. Y. Kim, *Seoul National University, Seoul, Korea.*
- 179 **Effects of dietary γ -Butyrobetaine and L-Carnitine on carnitine concentrations in various muscle tissues of finishing pigs.** J. M. Benz*, J. L. Nelssen, M. D. Tokach, R. D. Goodband, J. M. DeRouchey, and S. S. Dritz, *Kansas State University, Manhattan.*
- 180 **Effects of two TID lysine concentrations, Optipak®, Paylean®, and their combinations, on the growth performance and carcass characteristics of finishing**

pigs. J. R. Bergstrom*, M. D. Tokach, S. S. Dritz, J. L. Nelssen, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan*.

- 181 **Evaluation of arabinogalactan (Larafeed® AG) as a neutraceutical growth promoter in starter diets for weanling pigs.** J. R. Bergstrom*¹, J. L. Nelssen¹, M. D. Tokach¹, S. S. Dritz¹, and J. C. Woodworth², ¹*Kansas State University, Manhattan*, ²*Lonza, Inc., Allendale, NJ*.
- 182 **Evaluation of astaxanthin as a neutraceutical growth promoter in diets for weanling pigs.** J. R. Bergstrom*, J. L. Nelssen, M. D. Tokach, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan*.
- 183 **Supplementation of inorganic acidifier on growth performance nutrient digestibility, intestinal morphology, and microflora in the gastrointestinal tract of weaning pigs.** K. W. Kang*, H. B. Lee, H. F. Long, K. H. Kim, H. K. Oh, and Y. Y. Kim, *Sepul National University, Seoul, Korea*.

Physiology - Posters Exhibit Hall

- 222 **POSILAC® efficacy on six commercial dairy farms.** T. H. Klusmeyer*, J. M. Ballam, and J. L. Vicini, *Monsanto Company, St. Louis, MO*.
- 223 **Effects of summer climatic conditions on body temperature in beef females.** D. McGee*, R. Rasby, M. Nielsen, T. Mader, L. Kovarik, and Z. Hall, *University of Nebraska-Lincoln, Lincoln, NE, USA*.
- 224 **Effects of administration of prostaglandin F_{2α} (PG) 5 or 7 d after receiving human chorionic gonadotropin (hCG) or gonadotropin releasing hormone (GnRH) in replacement beef heifers.** G. Marquezini*¹, C.R. Dahlen², M. Blason¹, S.L. Bird¹, J.E. Larson¹, B.J. Lovaas¹, S. Lares¹, and G.C. Lamb¹, ¹*NCROC, University of Minnesota, Grand Rapids, MN, USA*, ²*NWROC, University of Minnesota, Crookston, MN, USA*.
- 301 **Evidence for locally-produced prolactin in equine ovaries.** T. Marlo*, K.L. Jones, D. Hastings, H. Heath, and S.S. King, *Southern Illinois University-Carbondale, Carbondale, IL, USA*.
- 225 **Sildenafil citrate (Viagra™) influences ovarian hemodynamics and progesterone concentrations in Rambouillet ewes.** E.J. Windorski*¹, K.A. Vonnahme¹, C.S. Schauer^{2,1}, J.D. Kirsch¹, L.A. Silva³, L.P. Reynolds¹, and J.S. Luther^{1,2}, ¹*North Dakota State University, Fargo, ND, United States*, ²*Hettinger Research Extension Center, North Dakota State University, Hettinger, ND, United States*, ³*University of Florida, Gainesville, FL, United States*.
- 226 **Effects of genistein on serum and anterior pituitary (AP) concentrations of IGF-I and IGF binding proteins (IGFBP) in barrows.** A.K. Knorr* and J.A. Clapper, *South Dakota State University, Brookings, SD, USA*.
- 113 **Use of transcriptional profiling to understand genetic mechanisms responding to fasting in pigs.** Sender Lkhagvadorj*¹, Long Qu¹, Oliver Couture¹, Jack Dekkers¹, and Chris Tuggle¹, ¹*Iowa State University, Ames*, ²*United States Department of Agriculture Animal Research Service, Athens*, ³*University of Georgia, Athens*.

Ruminant Nutrition – Posters Session I

Chair: Eugene Felton, West Virginia University, Morgantown
Exhibit Hall

- 115 **Autocrine signaling mechanism of vitamin D in the bovine innate immune response.** C.D. Nelson*^{1,3}, D.C. Beitz^{1,2}, T.A. Reinhardt³, and J.L. Lippolis³,

¹*Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University,*
²*Department of Animal Science, Iowa State University, Ames, IA 50011, USA,*
³*Periparturient Diseases of Cattle Research Unit, National Animal Disease Center,*
Agriculture Research Service, United States Department of Agriculture, 2300 Dayton
Ave, Ames, IA 50010, USA.

- 236 **Evaluation of feeding BIG BEEF™ in a calf milk replacer on health and performance.** M. Yang^{*1}, B. Renk¹, D. Shields², and J. Coalson², ¹*Aova Technologies, Madison, WI USA,* ²*Merricks Inc., Union Center, WI USA.*
- 237 **Effects of time of soybean oil supplementation on diurnal rumen activity and total tract nutrient digestibility in lambs fed a high forage diet.** Q. S. Baptiste^{*}, J. Gulas, M. Packard, S. Chavez, and E. E. D. Felton, *West Virginia University, Morgantown, WV, USA.*
- 238 **Effect of length of time between maternal separation and shipping on post-weaning growth and health of beef calves weaned during the summer.** J. W. Bolte^{*}, K. C. Olson, J. R. Jaeger, B. J. White, R. L. Larson, G. A. Milliken, N. A. Sproul, and M. D. Thomas, *Kansas State University, Manhattan.*
- 239 **Supplemental trace minerals (Zn, Cu, Mn, and Co) as Availa®4 or inorganic sources for shipping-stressed cattle.** M. Pass¹, J. C. Moore^{*1}, E. B. Kegley¹, and C. K. Larson², ¹*University of Arkansas, Fayetteville,* ²*Zinpro Corp., Eden Prairie, MN.*
- 109 **Comparison of two grain adaptation systems, one with forage and another using wet corn gluten feed, on ruminal pH, feed intake, and digestibility of feedlot cattle.** T.J. Huls^{*}, N.F. Meyer, G.E. Erickson, and T.J. Klopfenstein, *University of Nebraska, Lincoln, NE.*
- 240 **Effects of dietary ingredients composition on plasma ghrelin concentrations of beef cattle in negative energy balance.** J. S. Jennings^{*}, A. E. Wertz-Lutz, and J. A. Clapper, *South Dakota State University, Brookings, SD.*
- 241 **Phosphorus concentrations of forage selected by grazing beef cattle.** D. Assman^{*}, M.M. Haan, and J.R. Russell, *Iowa State University, Ames, IA USA.*
- 242 **Effects of source of energy on performance, ultrasonic, carcass, and economic characteristics of early-weaned heifers.** P.S. Bedwell, D.W. Shike^{*}, F.A. Ireland, T.G. Nash, and D.B. Faulkner, *University of Illinois, Urbana-Champaign, IL, USA.*
- 243 **Effects of distillers dried grains supplementation of smooth bromegrass hay on hay intake and diet digestibility.** P.W. Lasley^{*} and J.R. Russell, *Iowa State University, Ames, IA USA.*
- 106 **Evaluation of milk components, fatty acid profile, and production of cows fed rolled flaxseed on two commercial dairies.** N.R. Bork^{*1}, G.P. Lardy¹, J.W. Schroeder¹, K.A. Vonnahme¹, P.M. Fricke³, K.B. Koch¹, K.G. Odde², R.D. Shaver³, and S.J. Bertics³, ¹*North Dakota State University, Fargo, ND, USA,* ²*Kansas State University, Manhattan, KS, USA,* ³*University of Wisconsin-Madison, Madison, WI, USA.*
- 244 **Pasture and natural finishing influences performance, carcass, and economic characteristics of early-weaned steers.** D. B. Faulkner^{*}, D. Shike, and F. A. Ireland, *University of Illinois, Urbana, IL, USA.*
- 245 **Supplementing beef cows grazing constalk residue with a distillers grains based cube during late gestation.** Z.C. Hall^{*}, R.J. Rasby, L.M. Kovarik, and D.A. McGee, *University of Nebraska - Lincoln, Lincoln, NE 68583-0908.*
- 246 **Effects of increasing the dietary energy density by replacing grass hay with soybean hulls and dried distillers grains with solubles on nutrient digestibility and rumen function.** R. D. Zelinsky^{*}, A. E. Wertz-Lutz, and J. E. Held, *South Dakota State University, Brookings, SD.*

- 108 **Effects of glycerol on cow and calf performance in creep rations.** C. Fleenor*, S. Lake, M. Claeys, P. Gunn, and R. Lemenager, *Purdue University, West Lafayette, IN.*
- 247 **Replacing grass hay with soybean hulls and dried distillers grains with solubles alters ewe milk composition and lamb performance.** R. D. Zelinsky*, A. E. Wertz-Lutz, and J. E. Held, *South Dakota State University, Brookings, SD.*

Tuesday, March 18

SYMPOSIA AND ORAL SESSIONS

Animal Behavior, Housing, & Well Being Symposium Swine Well-Being Issues: How are they being addressed?

Chair: Anna Johnson, Iowa State University, Ames
142-144

Sponsored by: American Society of Animal Science

- 8:00 AM Introduction and welcome.
- 8:05 AM 13 **(Invited) Stress responses of piglets during routine processing procedures.** J. N. Marchant-Forde*¹, D. C. Lay, Jr.¹, R. M. Marchant-Forde¹, E. A. Pajor², and H. W. Cheng¹, ¹USDA-ARS-LBRU, West Lafayette, IN, ²Purdue University, West Lafayette, IN.
- 8:50 AM 14 **(Invited) Drinking behavior of seven week old pigs when water is either withheld or provided ad libitum.** A. K. Johnson* and C. J. Jackson, *Iowa State University, Ames.*
- 9:35 AM Break.
- 9:45 AM 15 **(Invited) Active euthanasia and animal welfare.** J. Woods*, *J. Woods Livestock Services, Alberta, Canada.*
- 10:30 AM 16 **(Invited) A review of transport losses in market weight pigs.** M. J. Ritter*, *Elanco Animal Health, Greenfield, IN.*
- 11:15 AM Break.
- 11:30 AM 17 **Effects of handling intensity, distance moved, and transport floor space on the stress responses of market weight pigs.** M. J. Ritter*¹, M. Ellis², C. M. Murphy², B. A. Peterson², and A. Rojo², ¹Elanco Animal Health, Greenfield, IN, ²University of Illinois, Urbana.
- 11:45 AM 18 **Factors that increase the frequency of stressed, crippled, and dead pigs at a commercial abattoir.** R. Fitzgerald*¹, K. Stalder¹, N. Matthews², C. Schultz-Kaster², and A. Johnson¹, ¹Iowa State University, Ames, ²Farmland Foods, Milan, MO.
- 12:00 PM 19 **Factors associated with open mouth breathing and mortality in market hogs following transport to a packing plant.** K. B. Kephart* and M. T. Harper, *Penn State University, University Park.*
- 12:15 PM 20 **Evaluation of a Porcine Circovirus Type 2 vaccine on finishing pig growth performance and mortality rate.** J. Y. Jacela*, S. S. Dritz, M. D. Tokach, R. D. Goodband, J. M. DeRouchey, and J. L. Nelszen, *Kansas State University, Manhattan.*

Billy N. Day Symposium
Delivering Semen to the Swine Industry
Chair: Tim Safranski, University of Missouri, Columbia
138-140

Sponsored by: Billy N. Day Appreciation Club

- 8:00 AM Introduction. Tim Safranski.
- 8:05 AM 21 **(Invited) Benefits accrued by the swine industry following adoption of artificial insemination.** R. G. Campbell*, *Pork CRC, Willaston, South Australia, Australia.*
- 8:45 AM 22 **(Invited) An overview of the current status of technology for artificial insemination in the swine industry.** E. A. Martinez*, J. M. Vazquez, J. Roca, M. A. Gil, C. Cuello, I. Parrilla, X. Lucas, and J. L. Vazquez, *Murcia University, Murcia, Spain.*
- 9:25 AM 23 **(Invited) Opportunities to increase the benefits of artificial insemination to the swine industry.** R. Schmitt*, *Seaboard Foods, Guymon, OK.*
- 9:45 AM **Questions and Discussion.** Tim Safranski.
- 10:00 AM **Break.**
- 10:15 AM 24 **(Invited) Opportunities for improving sperm production in boars.** W. L. Flowers*, *North Carolina State University, Raleigh.*
- 10:45 AM 25 **(Invited) Opportunities to improve liquid and frozen storage of boar semen.** H. D. Guthrie* and G. R. Welch, *Animal Biosciences and Biotechnology Laboratory, Agricultural Research Service, Beltsville, MD.*
- 11:15 AM 26 **(Invited) Molecular evaluation of semen quality.** P. Sutovsky*, *University of Missouri, Columbia.*
- 11:45 AM **Summary and Questions.** Tim Safranski.

Breeding and Genetics I
Chair: Eric Antoniou, University of Missouri, Columbia
148

Sponsored by: Pig Improvement Company

- 8:00 AM 27 **A multivariate approach for Parma's ham quality evaluation.** N. Bacciu*¹, A. Rossi², and N. P. P. Macciotta¹, *¹University of Sassari, Sassari, Italy, ²C.R.P.A., Reggio Emilia, Italy.*
- 8:15 AM 28 **Application of various selection methods for genetic improvement of rate of gain and loin depth while maintaining back-fat thickness constant in pigs.** A. Toosi*¹, R. Fernando¹, F. Pita², and F. Gunsett², *¹Iowa State University, Ames, ²Newsham Genetics, West Des Moines, IA.*
- 8:30 AM 29 **Heritability estimates for structural soundness traits in commercial gilts.** M. Nikkilae*¹, K. Stalder¹, B. Mote¹, J. Lampe², B. Thorn³, M. Rothschild¹, A. Johnson¹, L. Karriker¹, and T. Serenius⁴, *¹Iowa State University, Ames, ²Swine Graphics Enterprises, Webster City, IA, ³Newsham Genetics, West Des Moines, IA, ⁴FABA Breeding, Vantaa, Finland.*
- 8:45 AM 30 **Association of candidate genes to leg and body conformation traits in pigs.** S. K. Onteru*, B. Fan, B. Mote, T. Serenius, M. Nikkilae, K. J. Stalder, and M. F. Rothschild, *Iowa State University, Ames.*
- 9:00 AM 31 **Genetic relationships among temperament score, weight, and backfat measurements in pigs.** J. W. Holl*, G. A. Rohrer, and T. M. Brown-Brandl, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*

- 9:15 AM 32 **Genetic parameters for kyphosis in pork carcasses.** J. W. Holl*, G. A. Rohrer, S. D. Shackelford, T. L. Wheeler, and M. Koohmaraie, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*
- 9:30 AM 33 **Covariance functions for weights of young dual purpose Simmental bulls using splines.** M. Kaps*^{1,2} and W. R. Lamberson², ¹*University of Zagreb, Zagreb, Croatia*, ²*Univeristy of Missouri, Columbia.*
- 9:45 AM 34 **Maternal inheritance of pulmonary arterial pressure in Angus cattle and its correlation with growth.** D. W. Beckman*¹ and D. J. Garrick^{1,2}, ¹*Iowa State University, Ames*, ²*Massey University, Palmerston North, New Zealand.*
- 10:00 AM 295 **Coat shedding among Angus cows and its correlation among progeny.** H.D. Sigal*, K.A. Gray, and J.P. Cassidy, *North Carolina State University, Raleigh, NC, US.*
- 10:15 AM **Break.**
- 10:30 AM 35 **Responses to genomic selection in livestock.** J. M. Young*, H. Zhao, R. L. Fernando, D. Habier, and J. C. M. Dekkers, *Iowa State University, Ames.*
- 10:45 AM 36 **Placental transcriptome profile differences associated with selection for uterine capacity.** B. A. Freking*¹, J. R. Miles¹, S. R. Bischoff², Y. Xia³, D. J. Nonneman¹, J. L. Vallet¹, and J. A. Piedrahita², ¹*USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*, ²*North Carolina State University, Raleigh*, ³*University of Nebraska, Lincoln.*
- 11:00 AM 37 **A novel estimator for the proportion of true null hypotheses based on subsampling with applications to microarray data.** L. Qu*, D. Nettleton, and J. C. M. Dekkers, *Iowa State University, Ames.*
- 11:15 AM 38 **Genetic background influences pig growth rate responses to porcine circovirus type 2 (PCV2) vaccines.** M. L. Potter*¹, L. M. Tokach², S. S. Dritz¹, S. C. Henry², J. M. DeRouchey¹, M. D. Tokach¹, R. D. Goodband¹, J. L. Nelsenn¹, R. R. Rowland¹, and R. A. Hesse¹, ¹*Kansas State University, Manhattan*, ²*Abilene Animal Hospital, PA, Abilene, KS.*
- 11:30 AM 39 **Analysis of incidence of Porcine Circovirus Associated Disease (PCVAD) in a Landrace/Large White composite population.** J. Bates*, R. Johnson, and A. Doster, *University of Nebraska, Lincoln.*

Nonruminant Nutrition I Distillers Grains

**Chair: Steve Dritz, Kansas State University, Manhattan
204FG**

Sponsored by: JBS United, Inc.

- 8:00 AM 153 **(Invited) Feeding distillers dried grains with solubles (DDGS) to pigs.** H. H. Stein*, *University of Illinois, Urbana.*
- 8:30 AM 154 **Effects of increasing levels of distillers dried grains with solubles (DDGS) on growth performance of weanling pigs.** T. E. Burkey*, P. S. Miller, R. Moreno, S. S. Shepherd, and E. E. Carney, *University of Nebraska, Lincoln.*
- 8:45 AM 88 **Use of 20% dried distillers grains with solubles (DDGS) and high amounts of synthetic amino acids to replace soybean meal in grower-finisher swine diets.** A.J. Drescher*¹, L.J. Johnston¹, G.C. Shurson¹, and J. Goihl², ¹*University of Minnesota, St. Paul, MN, USA*, ²*Agri-Nutrition Services, Inc., Shakopee, MN, USA.*
- 9:00 AM 155 **Feeding pelleted DDGS-based diets to finishing pigs in deep-bedded hoop barns.** D. Stender* and M. S. Honeyman, *Iowa State University, Ames.*

- 9:15 AM 156 **Effects of expander conditioning on the nutritional value of diets with corn- and sorghum-based distillers dried grains with solubles in nursery and finishing pigs.** C. Feoli*¹, J. D. Hancock¹, T. L. Gugle¹, and S. D. Carter², ¹*Kansas State University, Manhattan*, ²*Oklahoma State University, Stillwater*.
- 9:30 AM 157 **Effects of feeding increasing levels of distillers dried grains with solubles to grow-finish pigs on growth performance and carcass quality.** D. Weimer, J. Stevens*, A. Schinckel, M. Latour, and B. Richert, *Purdue University, West Lafayette, IN*.
- 9:45 AM 158 **(National Pork Board Research Award) Effects of adding increasing levels of corn dried distillers grains with solubles (DDGS) to corn-soybean meal diets on pork fat quality of growing-finishing pigs.** G. Xu*¹, S. K. Baidoo¹, L. J. Johnston¹, J. E. Cannon², D. Bibus¹, and G. C. Shurson¹, ¹*University of Minnesota, St. Paul*, ²*Hormel Foods, Austin, MN*.
- 10:00 AM 159 **Effects of dried distiller grain with solubles on fat quality of finishing pigs.** J. M. Benz*, S. K. Linneen, J. M. DeRouche, M. D. Tokach, S. S. Dritz, J. L. Nelssen, and R. D. Goodband, *Kansas State University, Manhattan*.
- 10:15 AM 160 **Withdrawal of distillers dried grains with solubles (DDGS) prior to slaughter in finishing pigs.** G. M. Hill*¹, J. E. Link¹, D. O. Liptrap², M. A. Giesemann³, M. J. Dawes¹, J. A. Snedegar¹, N. M. Bello¹, and R. J. Tempelman¹, ¹*Michigan State University, E. Lansing*, ²*Hubbard Feeds, Mankato, MN*, ³*Dakota Gold Research Association, Sioux Falls, SD*.
- 10:30 AM 161 **Effects of dietary corn dried distillers grains with solubles (DDGS), and DDGS withdrawal intervals, on pig growth performance, carcass traits, and fat quality.** G. Xu*¹, S. K. Baidoo¹, L. J. Johnston¹, J. E. Cannon², D. Bibus¹, and G. C. Shurson¹, ¹*University of Minnesota, St. Paul*, ²*Hormel Foods, Austin, MN*.
- 10:45 AM 162 **Effects of adding beef tallow and palm oil to diets with sorghum-based distillers dried grains with solubles on growth performance and carcass characteristics in finishing pigs.** C. Feoli*¹, J. D. Hancock¹, S. Issa¹, T. L. Gugle¹, and S. D. Carter², ¹*Kansas State University, Manhattan*, ²*Oklahoma State University, Stillwater*.
- 11:00 AM 163 **Effects of adding stearic acid and coconut oil to diets with sorghum-based distillers dried grains with solubles on growth performance and carcass characteristics in finishing pigs.** C. Feoli*¹, J. D. Hancock¹, D. H. Kropf¹, S. Issa¹, T. L. Gugle¹, and S. D. Carter², ¹*Kansas State University, Manhattan*, ²*Oklahoma State University, Stillwater*.
- 11:15 AM 164 **Standardized ileal digestibility of reactive lysine in distillers dried grains with solubles (DDGS) fed to growing pigs.** A. A. Pahm*¹, C. Pedersen², and H. H. Stein¹, ¹*University of Illinois, Urbana*, ²*DANISCO Animal Nutrition, Wiltshire, UK*.
- 11:30 AM 165 **Amino acid digestibility and energy content of corn distillers meal for swine.** J. Y. Jacela*¹, J. M. DeRouche¹, S. S. Dritz¹, M. D. Tokach¹, R. D. Goodband¹, J. L. Nelssen¹, R. C. Sulabo¹, and R. C. Thaler², ¹*Kansas State University, Manhattan*, ²*South Dakota State University, Brookings*.
- 11:45 AM 166 **Selected additives do not improve flowability of dried distillers grains with solubles (DDGS) in commercial systems.** L. J. Johnston*¹, A. M. Hilbrands¹, G. C. Shurson², and J. Goihl³, ¹*West Central Research and Outreach Center, University of Minnesota, Morris, MN*, ²*University of Minnesota, St. Paul*, ³*Agri-Nutrition Services, Inc., Shakopee, MN*.

Ruminant Nutrition I

Byproducts

Chair: Eugene Felton, West Virginia University, Morgantown
204AB

- 8:00 AM 97 **Effects of corn processing and wet distiller's grains on metabolism in steers.** M. E. Corrigan*, G. E. Erickson, T. J. Klopfenstein, N. F. Meyer, C. D. Buckner, and S. J. Vanness, *University of Nebraska, Lincoln.*
- 8:15 AM 259 **Effects of dietary fat and crude protein on feedlot performance and carcass characteristics in steers fed differing levels of distiller's dried grains with solubles.** P. Gunn*, S. Lake, M. Claeys, and R. Lemenager, *Purdue University, West Lafayette, IN.*
- 8:30 AM 260 **Increasing range capacity with the use of wet distillers grains.** B.L. Nuttelman*, T.J. Klopfenstein, W.H. Schacht, L.A. Stalker, J.A. Musgrave, and J.D. Volesky, *University of Nebraska, Lincoln, NE, USA.*
- 8:45 AM 82 **Effect of the grains to solubles ratio in diets containing wet distillers grains fed to feedlot steers.** C. M. Godsey*, M. K. Luebbe, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska, Lincoln, Nebraska.*
- 9:00 AM 261 **Feeding wet distillers grains and wheat straw to growing calves.** B.L. Nuttelman*, T.J. Klopfenstein, G.E. Erickson, and M.K. Luebbe, *University of Nebraska, Lincoln, NE, USA.*
- 9:15 AM 262 **Dried distiller's grains in steam-flaked corn finishing diets with alfalfa hay or corn silage.** S. Uwituzo*¹, G.L. Parsons¹, M.K. Shelor¹, B.E. Depenbusch¹, K.K. Karges², M.L. Gibson², and J.S. Drouillard¹, ¹*Kansas State University, Manhattan, KS, USA*, ²*Poet Nutrition, Sioux Falls, SD, USA.*
- 9:30 AM 93 **Performance of lactating dairy cows to increasing concentrations of dried distillers grains with solubles on milk production and composition.** K. A. Christen*, K. F. Kalscheur, B. W. Pamp, A. R. Hippen, and D. J. Schingoethe, *South Dakota State University, Brookings, South Dakota, USA.*
- 9:45 AM 263 **Nutrient composition and variation among wet and modified distillers grains plus solubles.** C.D. Buckner*, S.J. Vanness, G.E. Erickson, T.J. Klopfenstein, and J.R. Benton, *University of Nebraska-Lincoln.*
- 10:00 AM 264 **Effect of distiller's grains composition on digestibility in growing steers.** M. E. Corrigan*, T. J. Klopfenstein, G. E. Erickson, and N. F. Meyer, *University of Nebraska, Lincoln.*
- 10:15 AM **Break.**
- 10:30 AM 288 **Forage quality and grazing performance of beef cattle grazing brown mid-rib grain sorghum residue.** A.K. Schwarz*¹, C.M. Godsey¹, M.K. Luebbe¹, G.E. Erickson¹, T.J. Klopfenstein¹, R.B. Mitchell², and J.F. Pedersen², ¹*University of Nebraska, Lincoln, NE USA*, ²*USDA, ARS, Lincoln, NE USA.*
- 10:45 AM 265 **Distillers dried grains supplementation of stockpiled forage for fall-calving cows or calves over winter on performance of cows and calves.** P.W. Lasley*, J.R. Russell, D.G. Morrical, D.R. Strohbehn, and J.D. Lawrence, *Iowa State University, Ames, Iowa USA.*
- 11:00 AM 266 **Effects of distillers dried grains supplementation of fall-calving cows or their calves grazing stockpiled forage over winter on calf performance in a pasture-based finishing program in the subsequent summer.** P.W. Lasley*, J.R. Russell, D.G. Morrical, D.R. Strohbehn, and J.D. Lawrence, *Iowa State University, Ames, IA USA.*

- 11:15 AM 267 **Feeding solubles or wet distillers grains plus solubles and corn stalks to growing calves.** M. F. Wilken*, M. K. Luebbe, G. E. Erickson, and T. J. Klopfenstein, *University of Nebraska - Lincoln*.
- 11:30 AM 268 **Dried distillers grains substitute for forage and nitrogen in smooth bromegrass pastures.** M. A. Greenquist*, T. J. Klopfenstein, W. H. Schacht, G. E. Erickson, M. K. Luebbe, K. J. Vander Pol, and A. K. Schwarz, *University of Nebraska, Lincoln, NE*.
- 11:45 AM 269 **Effect of inclusion level of modified wet distillers grains plus solubles on feedlot performance and carcass characteristics.** T.J. Huls*, M.K. Luebbe, G.E. Erickson, and T.J. Klopfenstein, *University of Nebraska, Lincoln, NE*.

Beef/Small Ruminant Extension I Sulfur in Ruminant Diets Symposium

**Chair: Cody Wright, South Dakota State University, Brookings
134**

- 8:30 AM **Introduction.**
- 8:35 AM **(Invited) Sources of dietary sulfur in ruminant diets.** R. Pritchard, South Dakota State University, Brookings.
- 9:15 AM 64 **(Invited) Metabolism of sulfur in the rumen.** L. Kung, Jr.*, *University of Delaware, Newark.*
- 9:55 AM **(Invited) Sulfur amino-acid nutrition.** L. Armentano, University of Wisconsin, Madison.
- 10:35 AM **Break.**
- 10:50 AM **(Invited) Influence of sulfur on mineral nutrition.** J. Spears, North Carolina State University, Raleigh.
- 11:30 AM **(Invited) Relationship between sulfur and polioencephalomalacia.** D. Gould, Colorado State University, Fort Collins.

Ruminant Nutrition II Dairy

**Chair: Barry Bradford, Kansas State University, Manhattan
205IJ**

- 9:00 AM 270 **(Invited Young Scholar) Energy balance, immune system function, and susceptibility to mastitis in dairy cows.** K. M. Moyes*, J. J. Loor, and and J. K. Drackley, *University of Illinois, Urbana*.
- 9:30 AM 271 **Abstract Withdrawn.**
- 10:00 AM **Break.**
- 10:15 AM 272 **Effects of feeding three types of corn milling co-products to Holstein dairy cattle.** J. M. Kelzer*¹, P. J. Kononoff², A. M. Gehman¹, K. Karges², and M. L. Gibson², ¹*University of Nebraska, Lincoln, NE, USA*, ²*Dakota Gold Research Association, Sioux Falls, SD, USA*.
- 10:30 AM 273 **(Invited Young Scholar) Evaluation of distillers grains as a source of rumen-undegradable protein for lactating dairy cows.** B. W. Pamp* and K. F. Kalscheur, *South Dakota State University, Brookings, SD, USA*.

- 11:00 AM 274 **(Invited Young Scholar) Effect of forage quality on dairy cow performance, diet digestibility and rumen parameters.** M. L. Raeth-Knight*¹, J. G. Linn¹, H. G. Jung^{1,2}, D. R. Mertens^{2,3}, and P. R. Peterson¹, ¹University of Minnesota, St. Paul, MN, ²USDA Agricultural Research Service, ³US Dairy Forage Research Center, Madison, WI.
- 11:30 AM 275 **Dietary starch particle size influences lactation performance of dairy cows.** A. Zwald*, A.E. Dorshorst, P.C. Hoffman, L.M. Bauman, and M.G. Bertram, *University of Wisconsin, Madison, WI, USA.*
- 11:45 AM 276 **Performance of lactating dairy cows fed corn as whole plant silage and grain produced from a genetically modified event DAS-59122-7 or a nontransgenic, near isogenic control.** M. Brouk*¹, B. Cvetkovic¹, D. Rice², B. Smith², M. Hinds², F. Owens², and T. Sauber², ¹Kansas State University, Manhattan, KS USA, ²Pioneer Hi-Bred, Johnston, IA USA.

Swine Extension I

Chair: Jason Woodworth, Lonza, Inc., Enterprise, KS

146

- 10:00 AM 289 **Survey of mortality in multi-source nurseries.** J. Graham*¹, J. Waddell², and K. Bruns¹, ¹South Dakota State University, Brookings, SD, USA, ²Sutton Veterinary Clinic, Sutton, NE.
- 10:15 AM 74 **Impact of growth-promoting antibiotics on development and persistence of antibiotic resistance in nursery and finishing pigs.** J. P. Holt*, E. van Heugten, A. K. Graves, M. T. See, and W. E. M. Morrow, *North Carolina State University, Raleigh.*
- 10:30 AM 75 **Survey of swine nutrition and feed industry practices in the United States for development of a national swine nutrition guide.** M. S. Carlson*¹, S. D. Carter², J. M. DeRouchey³, D. J. Meisinger⁴, D. E. Reese⁵, B. T. Richert⁶, K. J. Stalder⁷, H. H. Stein⁸, E. van Heugten⁹, and M. H. Whitney¹⁰, ¹University of Missouri, Columbia, ²Oklahoma State University, Stillwater, ³Kansas State University, Manhattan, ⁴US Pork Center of Excellence, Ames, IA, ⁵University of Nebraska, Lincoln, ⁶Purdue University, West Lafayette, IN, ⁷Iowa State University, Ames, ⁸University of Illinois, Urbana, ⁹North Carolina State University, Raleigh, ¹⁰University of Minnesota, Mankato.
- 10:45 AM 76 **A production barrow show that focuses on lean gain and pork quality at the Missouri state fair.** M. S. Carlson*¹, C. L. Lorenzen¹, R. Disselhorst¹, and L. Wilson², ¹University of Missouri, Columbia, ²Missouri Department of Agriculture, Jefferson City, MO.

Dairy Extension Symposium

Focus on Forages — Facts and Fantasies

Chair: J.W. Schroeder, North Dakota State University, Fargo

204AB

- 1:00 PM 65 **(Invited) Novel techniques to improve the measurement of neutral detergent fiber digestibility.** D. K. Combs*, G. P. Goeser, and P. C. Hoffman, *University of Wisconsin, Madison.*
- 1:30 PM 66 **(Invited) The interaction of starch particle size and storage proteins on corn silage starch hydrolysis potential.** A. E. Dorshorst and P. C. Hoffman*, *University of Wisconsin, Madison.*

- 2:00 PM 67 (Invited) **CornPicker: A partial budget approach to choosing corn hybrids for silage.** M. S. Allen*, *Michigan State University, East Lansing.*
- 2:30 PM **Techniques Q & A.**
- 3:00 PM **Break.**
- 3:20 PM 68 (Invited) **Fermentation – Beyond the basics.** L. Kung*, *University of Delaware, Newark.*
- 3:50 PM 69 (Invited) **The faulty towers of corn silage.** F. Owens* and B. Mahanna, *Pioneer Hi-Bred, A DuPont Business, Johnston, IA.*
- 4:20 PM **Troubleshooting Q & A.**

Nonruminant Nutrition II Alternative Ingredients

Chair: Aaron Gaines, The Maschhoff's Inc., Carlyle, IL

142-144

Sponsored by: Kent Feeds, Inc.

- 1:00 PM 130 (Invited) **The challenge of incorporating novel energy sources into practical swine diets.** J. F. Patience*, A. D. Beaulieu, and P. Leterme, *Prairie Swine Centre, Inc., Saskatoon, SK, Canada.*
- 1:30 PM 131 **Prediction of energy digestibility of wheat in grower pigs using an *in vitro* digestibility procedure.** P. R. Regmi*¹, N. S. Ferguson², A. Pharazyn², and R. T. Zijlstra¹, ¹*University of Alberta, Edmonton, AB, Canada,* ²*Nutreco Canada, Guelph, ON, Canada.*
- 1:45 PM 132 **Effects of fibrous ingredients on pig performance and body composition.** L. L. Stewart*¹, D. Y. Kil¹, J. F. Patience², G. L. Allee³, J. E. Pettigrew¹, and H. H. Stein¹, ¹*University of Illinois, Urbana,* ²*Prarie Swine Centre, Saskatoon, SK, Ca,* ³*University of Missouri, Columbia.*
- 2:00 PM 133 **Digestible and net energy contents of field peas in growing pigs.** P. Leterme*, P. Kish, A. Samaraweera, A. D. Beaulieu, and J. F. Patience, *Prairie Swine Centre Inc., Saskatoon, SK, Canada.*
- 2:15 PM 84 **Nutritional value of flaxseed meal and its effects on pig growth and carcass composition.** L. Eastwood*, P. Kish, J.F. Patience, and P. Leterme, *Prairie Swine Centre Inc., 2105 - 8th Street East, Saskatoon, SK, S7H 5N9, Canada.*
- 2:30 PM 134 **The interaction of dietary flaxseed and length of feeding on the fatty acid profile of subcutaneous fat in grower-finisher pigs.** J. F. Patience¹, A. D. Beaulieu*¹, M. E. R. Dugan², J. L. Aalhus², P. Leterme¹, I. U. Haq¹, and R. T. Zijlstra³, ¹*Prairie Swine Centre, Inc., Saskatoon, SK, Canada,* ²*Agriculture and Agri-Food Canada Lacombe Research Centre, Lacombe, AB, Canada,* ³*University of Alberta, Edmonton, AB, Canada.*
- 2:45 PM 135 **Effects of increasing choice white grease in corn and sorghum-based diets on growth performance and fat quality characteristics of finishing pigs.** J. M. Benz*, M. D. Tokach, S. S. Dritz, J. L. Nelssen, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan.*
- 3:00 PM 98 **Assessment of the influence of proximate fractions in meat and bone meals on their apparent nitrogen-corrected metabolizable energy content.** O. A. Olukosi* and O. Adeola, *Purdue University, West Lafayette, IN, USA.*
- 3:15 PM 136 **Nutrient digestibility of lupin and air-classified protein and starch fractions of field pea and faba bean in grower pigs.** C. K. Gunawardena*¹, R. T. Zijlstra¹, and E. Beltranena^{1,2}, ¹*University of Alberta, Edmonton, Alberta, Canada,* ²*Alberta Agriculture and Food, Edmonton Alberta, Canada.*

- 3:30 PM 137 **A comparative evaluation of a dried milk product (Nutri-Gold®) with other milk protein sources for weanling pigs.** G. L. Cromwell*, B. G. Kim, Y. L. Ma, A. D. Quant, and M. D. Lindemann, *University of Kentucky, Lexington.*
- 3:45 PM 138 **Faba bean and field pea protein concentrates as replacements for specialty proteins in nursery diets for weaned pigs.** C. K. Gunawardena*¹, R. T. Zijlstra¹, L. A. Goonewardene^{1,2}, and E. Beltranena^{1,2}, ¹*University of Alberta, Edmonton, Alberta, Canada*, ²*Alberta Agriculture and Food, Edmonton, Alberta, Canada.*
- 4:00 PM 139 **Full-fat oat groats for weaned pigs.** P. Leterme*¹, B. Rossnagel², A. Samaraweera¹, and J. F. Patience¹, ¹*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, ²*University of Saskatchewan, Saskatoon, SK, Canada.*
- 4:15 PM 140 **Impact of increasing levels of soybean hulls on nitrogen and energy digestibility in growing pigs.** D. M. Sholly*¹, B. E. Aldridge¹, K. L. Saddoris², A. L. Sutton¹, and B. T. Richert¹, ¹*Purdue University, West Lafayette, IN*, ²*Akey, Lewisburg, OH.*
- 4:30 PM 141 **Effect of glycerol and soy oil on pellet mill production efficiency and nursery pig performance.** C. N. Groesbeck*, L. J. McKinney, J. M. DeRouchey, M. D. Tokach, R. D. Goodband, J. L. Nelssen, S. S. Dritz, A. W. Duttlinger, and K. C. Behnke, *Kansas State University, Manhattan.*
- 4:45 PM 142 **Use of glycerol in nursery pig diets.** R. Hinson*, L. Ma, and G. Allee, *University of Missouri, Columbia.*

Physiology I

Nutritional Physiology: The role of nutrition in reproduction symposium

**Chair: George Perry, South Dakota State University, Brookings
138-140**

- 1:00 PM 219 **(Invited) Regulation of transporter and enzyme expression by cellular energy.** J. C. Matthews*, *University of Kentucky, Lexington.*
- 1:45 PM 220 **(Invited) The early gestational uterine environment programs placental nutrient transport.** M. Wilson* and J. Koch, *West Virginia University, Morgantown.*
- 2:30 PM 221 **(Invited) Influence of maternal nutrition on offspring performance.** K. A. Vonnahme*, *North Dakota State University, Fargo.*

Nonruminant Nutrition III Amino Acids and Additives

**Chair: Dustin Kendall, Murphy-Brown LLC, Rose Hill, NC
204FG**

Sponsored by: Kent Feeds, Inc.

- 1:30 PM 143 **Preference of weanling pigs for different sources of supplemental methionine.** M. Wang*^{1,2}, M. D. Lindemann¹, G. L. Cromwell¹, H. J. Monegue¹, and R. L. Payne³, ¹*University of Kentucky, Lexington*, ²*Zhejiang University, Hangzhou, P.R. China*, ³*Degussa Corporation, Kennesaw, GA.*
- 1:45 PM 91 **Determining the optimum ratio of dietary tryptophan to lysine in growing pigs fed non-U.S.-type ingredients.** A. D. Quant*¹, M. D. Lindemann¹, G. L. Cromwell¹, B. J. Kerr², and R. L. Payne³, ¹*University of Kentucky, Lexington, KY*, ²*USDA, Ames, IA*, ³*Degussa Corporation, Kennesaw, GA.*

- 2:00 PM 144 **Determining the fourth-limiting amino acid in swine diets containing NutriDense® corn.** A. W. Duttlinger*¹, J. R. Bergstrom¹, M. D. Tokach¹, J. L. Nelssen¹, S. S. Dritz¹, R. D. Goodband¹, J. M. DeRouchey¹, and J. Snow², ¹*Kansas State University, Manhattan*, ²*BASF Plant Science, Research Triangle Park, NC*.
- 2:15 PM 145 **Effect of increasing lysine/net energy concentration on growth performance and plasma urea nitrogen concentration of late-finishing barrows fed low-protein amino acid-supplemented diets and Paylean.** R. Moreno*, P. S. Miller, and T. E. Burkey, *University of Nebraska, Lincoln*.
- 2:30 PM 146 **True ileal digestible lysine requirement of finishing pigs fed low or high synthetic amino acid Paylean® diets.** R. Hinson*¹, A. Gaines², J. Usry³, and G. Allee¹, ¹*University of Missouri, Columbia*, ²*The Maschoffs Inc., Carlyle, IL*, ³*Ajinomoto Heartland LLC, Chicago, IL*.
- 2:45 PM 298 **Effects of administration of bovine colostrum extract (First Pulse® D) on growth, livability and acute phase proteins of disadvantaged pigs in a commercial swine production facility.** J.M. Pomeroy*¹, J.S. Knott², R.W. Fent², and G.C. Shurson¹, ¹*University of Minnesota, St. Paul, MN, USA*, ²*Ralco Nutrition Inc., Marshall, MN, USA*.
- 3:00 PM 147 **(National Pork Board Research Award) Dietary inclusion of colicin E1 prevents post weaning diarrhea in a seeder challenge model.** S. A. Cutler*¹, N. A. Cornick¹, S. M. Lonergan¹, and C. H. Stahl², ¹*Iowa State University, Ames*, ²*North Carolina State University, Raleigh*.
- 3:15 PM 102 **Acute phase responses in piglets fed diets containing non-starch polysaccharide (NSP) hydrolysis products and egg yolk antibodies upon *Escherichia coli* K88 oral challenge.** E. Kiarie*, B. A. Slominski, D. O. Krause, and C. M. Nyachoti, *University of Manitoba, Winnipeg, MB, Canada*.
- 3:30 PM 148 **Effects of chitooligosaccharide supplementation on growth performance, nutrient digestibility, blood characteristics, and immune responses after lipopolysaccharide challenge in weanling pigs.** Y. J. Chen*¹, J. H. Cho¹, J. S. Yoo¹, Y. Wang¹, Y. Huang¹, H. J. Kim¹, S. O. Shin¹, K. Y. Whang², I. H. Kim¹, S. Y. Ji³, and S. D. Lee³, ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*Korea University, Seoul, Korea*, ³*National Institute of Animal Science, Seonghwan, Choongnam, Korea*.
- 3:45 PM 149 **Effect of ACIDOMATRIX™ LowLac in low lactose nursery pig diets.** R. J. Harrell*, B. V. Lawrence, F. Navarro, R. Anderson, and C. D. Knight, *Novus International, St Charles, MO*.
- 4:00 PM 150 **Evaluation of an enzyme blend (Natuzyme®) in diets for weanling pigs.** J. R. Bergstrom*, M. D. Tokach, J. L. Nelssen, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan*.
- 4:15 PM 151 **Effect of individual or combined xylanase and phytase supplementation on site of nutrient digestion of a diet with reduced nutrient specifications containing wheat and millrun fed to weaned pigs.** T. Nortey*¹, J. Sands², and R. Zijlstra³, ¹*Shur-Gain/Nutreco, St. Mary's, Ontario, Canada*, ²*Danisco Animal Nutrition, Marlborough, U.K.*, ³*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta, Canada*.
- 4:30 PM 152 **Effects of mannanase addition to copra meal and palm kernel meal diets on growth performance and nutrient digestibility of growing-finishing pigs.** Y. D. Jang*, J. H. Yun, D. H. Kim, J. H. Lee, W. S. Ju, and Y. Y. Kim, *Seoul National University, Seoul, Korea*.
- 4:45 PM 292 **Nitrogen utilization in horses fed grass and alfalfa hay.** A. L. Minella*, J. Liesman, and N. L. Trotter, *Michigan State University, East Lansing, MI, USA*.

Joint Swine Extension II and Growth, Development, Muscle Biology, and Meat Science I

Changing the dietary fatty acid profile and its influence on carcass composition, muscle biology, and meat characteristics symposium

Chairs: Ann Waylan Brackenridge, Cargill Meat Solutions, Wichita, KS, and Jason Woodworth, Lonza Inc, Enterprise, KS
205IJ

- 2:00 PM 70 (Invited) Changes in live performance and carcass composition associated with feeding diets formulated with fats and/or oils. J. K. Apple*, *University of Arkansas, Fayetteville.*
- 2:30 PM 71 (Invited) Influence of fatty acids on muscle and adipose tissue development. J. P. Schoonmaker* and D. C. Beitz, *Iowa State University, Ames.*
- 3:00 PM 72 (Invited) Fresh pork quality and lipid content: Exploring the linkages. S. M. Lonergan*, R. M. Smith, and E. Huff-Lonergan, *Iowa State University, Ames.*
- 3:30 PM 73 (Invited) Industry perspective: How does changing the fatty acid profile of the carcass alter meat characteristics and subsequent consumer acceptance? M. E. England* and A. T. Waylan Brackenridge, *Cargill, Inc., Wichita, KS.*

Physiology II

Nutritional Physiology

Chair: Matthew Wilson, West Virginia University, Morgantown
138-140

- 3:30 PM 101 Effect of wintering system, nutrition around breeding, and prostaglandin on gain and reproduction in beef heifers. D.M. Larson*¹, R.D. Richardson², and R.N. Funston³, ¹*University of Nebraska, Lincoln, NE USA*, ²*Rex Ranch, Ashby, NE USA*, ³*West Central Research and Extension Center, North Platte, NE USA.*
- 3:45 PM 216 Effect of wintering system, nutrition around breeding and prostaglandin on gain, reproduction, and calf production in beef heifers. D.M. Larson*¹, R.D. Richardson², and R.N. Funston³, ¹*University of Nebraska, Lincoln, NE USA*, ²*Rex Ranch, Ashby, NE, USA*, ³*West Central Research and Extension Center, North Platte, NE, USA.*
- 4:00 PM 96 Digestibility and fermentation parameters of barleys and oats differing in β -glucan content in the pig intestines. R. Jha*¹, B. Rossnagel², R. Pieper³, A. Van Kessel², and P. Leterme¹, ¹*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, ²*University of Saskatchewan, Saskatoon, Canada*, ³*FBN-Ernährungsphysiologie, Dummerstorf, Germany.*
- 4:15 PM 217 Effect of barley and oat β -glucans on intestinal microbiota in the pig. R. Pieper¹, R. Jha², P. Leterme², B. Rossnagel³, W. Souffrant¹, and A. Van Kessel*³, ¹*FBN-Ernährungsphysiologie, 18196 Dummerstorf, Germany*, ²*Prairie Swine Centre Inc., Saskatoon, SK, Canada*, ³*University of Saskatchewan, Saskatoon, SK, Canada.*
- 4:30 PM 90 Phosphorylation of Perilipin is associated with lipolytic activity in dairy cow. D. Elkins*, H. Park, and D. Spurlock, *Iowa State University, Ames, IA, USA.*

- 4:45 PM 218 **Effect of shortening or eliminating the dry period on milk production of lactating cows for a full lactation.** A.C. Fitzgerald*, T.H. Klusmeyer, A.C. Fabellar, J.M. Ballam, and J.L. Vicini, *Monsanto Company, 800 N. Lindbergh Blvd., St. Louis, MO 63167.*

POSTER PRESENTATIONS

Sponsored by: Zinpro

All posters will be in the Exhibit Hall (Room 206) from Monday at 1:00 PM until Noon on Wednesday. Authors are to be present on their assigned days from 4:30 PM to 6:00 PM.

Beef Extension - Posters

**Chair: Cody Wright, South Dakota State University, Brookings
Exhibit Hall**

- 57 **Characterizing the ensiling properties of sugar beets with dry feedstuffs.** T. C. Gilbery*, G. P. Lardy, B. W. Neville, B. A. Stoltenow, and M. L. Bauer, *North Dakota State University, Fargo, ND, USA.*
- 58 **Impact of growing rate of gain on subsequent feedlot performance, carcass characteristics, and Warner-Bratzler shear force.** B.A. Stoltenow*¹, G.P. Lardy¹, M.M. Stamm², and R.J. Maddock¹, ¹*North Dakota State University, Fargo, North Dakota, USA*, ²*Hettinger Research Extension Center, NDSU, Hettinger, North Dakota, USA.*
- 59 **Read distance performance of low frequency radio frequency identification (RFID) panel transceivers varies across transponder manufacturer.** S.E. Ryan*¹, D.A. Blasi¹, K.E. Fike¹, C.O. Anglin¹, A.M. Bryant¹, and B.A. Rickard², ¹*Kansas State University, Manhattan, KS, USA*, ²*Kansas Animal Health Department, Topeka, KS, USA.*
- 104 **The effect of the Kentucky Beef Cattle Genetics Improvement Program on real-time ultrasound carcass traits, performance and pelvic measurement of heifers enrolled in the Eastern Kentucky Heifer Development Program.** B. Galbreath*, H. Nauman, P. Prater, K. Peterson, J. Willard, J.M. Phillips, and T. Wistuba, *Morehead State University, Morehead, KY.*

Breeding and Genetics - Posters

**Chair: Doug Newcom, Genetic Improvement Services,
Newton Grove, NC
Exhibit Hall**

- 40 **Genetics relationships among breeds of beef cattle.** Y. Huang*¹, M. D. MacNeil², L. J. Alexander², and J. P. Cassady¹, ¹*North Carolina State University, Raleigh*, ²*USDA, Agricultural Research Service., Miles City, MT.*
- 41 **Identifying genes associated with bacterial shedding through transcriptional profiling.** J. J. Uthe*^{1,2}, Y. Wang², S. M. D. Bearson¹, A. M. O'Connor², J. McKean², D. Nettleton², J. C. Dekkers², and C. K. Tuggle², ¹*USDA, ARS, National Animal Disease Center, Ames, IA*, ²*Iowa State University, Ames.*

- 42 **Estimation of heritability, phenotypic and genetic trends for monthly test day fat corrected milk yield using legendre function.** R. Lotfi*¹, H. Farhangfar², and H. Naemcipour², ¹Tarbiat Modares University, Tehran, Iran, ²Birjand University, Birjand, Iran.
- 43 **Advanced selection for feed efficiency, carcass composition and growth using FIRE-stations and computer tomography (CT).** B. Holm*, *Norsvin USA, Harmony, MN.*
- 44 **Evidence of allelic suppression for transcripts expressed in day 30 pig embryos by SNP genotyping.** B. A. Freking*¹, D. J. Nonneman¹, G. A. Rohrer¹, S. R. Bischoff², S. Tsai², and J. A. Piedrahita², ¹USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²North Carolina State University, Raleigh.
- 45 **Association of insulin-like growth factor binding protein 2 genotypes with growth, carcass and meat quality traits in pigs.** S. Prasangsook*^{1,2}, R. O. Bates¹, I. S. Choi¹, V. D. Rilington¹, N. E. Raney¹, C. C. Beattie¹, M. E. Doumit¹, and C. W. Ernst¹, ¹Michigan State University, East Lansing, ²Kasetsart University, Bangkok, Thailand.
- 103 **Competition effects in a Large White/Landrace composite population of pigs.** W. L. Hsu*¹, R. K. Johnson¹, and L. D. Van Vleck^{1,2}, ¹Department of Animal Science, University of Nebraska, Lincoln, NE, U.S.A 68583, ²USMARC, ARS, USDA, Lincoln, NE, U.S.A 68583.

Growth, Development, Muscle Biology, and Meat Science - Posters
Chair: Ann Waylan Brackenridge, Cargill, Inc., Wichita, KS
Exhibit Hall

- 122 **Interactions of mammalian synemin with the costameric protein talin.** N. Sun* and R.M. Robson, *Iowa State University, Ames, IA, USA.*
- 112 **Impact of birth weight on growth performance and carcass characteristics of pigs – a retrospective analysis.** B. A. Peterson*¹, M. Ellis¹, R. Bowman², N. H. Williams³, and B. F. Wolter², ¹University of Illinois, Urbana, IL, USA, ²The Maschhoffs, Inc., Carlyle, IL, USA, ³PIC USA, Franklin, KY, USA.
- 123 **Identification of chlortetracycline (CTC)-sensitive pathways in the liver and *longissimus dorsi* tissues in beef steers using microarray technology.** K. R. Brown*¹, L. Huang², A. J. Stromberg², D. Wall³, K. Chen⁴, J. A. Boling¹, and J. C. Matthews¹, ¹Department of Animal and Food Sciences, ²Department of Statistics, ³MicroArray Core Facility, ⁴Department of Molecular and Biomedical Pharmacology, Lexington, Kentucky, USA.
- 124 **Growth of protein, moisture, lipid and ash of two genetic lines of barrows and gilts from twenty to one hundred twenty-five kilograms body weight.** A. Schinckel*¹, D. Mahan², T. Wiseman², and M. Einstein¹, ¹Purdue University, West Lafayette, IN, USA, ²The Ohio State University, Columbus, OH, USA.
- 125 **A rapid technique for predicting oxidation capacity of fresh beef.** L.S. Senaratne*, C.R. Calkins, and T.P. Carr, *University of Nebraska-Lincoln, Lincoln, NE, USA.*
- 126 **Use of bioelectric impedance to predict dissected lean tissue of market weight lamb carcasses.** J. Galbreath*, P. Berg, K. Carlin, J. Caton, D. Redmer, L. Reynolds, K. Vonnahme, and E. Berg, *North Dakota State University, Fargo, ND USA.*
- 111 **Finishing diets containing wet distillers grains plus solubles affect shelf life of beef.** A.S. de Mello Junior*, C.R. Calkins, B.E. Jenschke, L.S. Senaratne, and G.E. Erickson, *University of Nebraska-Lincoln, Lincoln, NE, USA.*
- 127 **Finishing diets containing wet distillers grains plus solubles increase the levels of polyunsaturated, omega 6 and C 18:2 fatty acids in yearling beef steers.** A.S.

de Mello Junior*, C.R. Calkins, B.E. Jenschke, L.S. Senaratne, and G.E. Erickson, *University of Nebraska-Lincoln, Lincoln, NE, USA.*

128 **Predicting aged beef tenderness with hyperspectral imaging and the relationship to muscle properties.** L.M. Grimes*, G. Konda Naganathan, J. Subbiah, and C.R. Calkins, *University of Nebraska-Lincoln, Lincoln, NE, USA.*

129 **Effects of vitamin A restriction on retail shelf-life and sensory attributes of Longissimus and Triceps brachii steaks from traditionally and early-weaned calves.** M.J. Daniel*, M.E. Dikeman, A.M. Arnett, and S. Hutchison, *Kansas State University.*

Nonruminant Nutrition - Posters Session II Exhibit Hall

105 **Digestible and net energy contents of field peas in gestating sows.** R. Premkumar*, A. Samaraweera, P. Kish, J.F. Patience, and P. Leterme, *Prairie Swine Centre Inc., 2105 - 8th Street East, Saskatoon, SK, S7H 5N9, Canada.*

184 **Effects of feeding Iowa-grown field peas on finishing pig performance.** J. G. Njoka*, M. S. Honeyman, and T. Miller, *Iowa State University, Ames.*

185 **Milling characteristics of yellow, short season field peas for swine diets.** A. L. Meteer*¹, B. R. Wiegand², K. R. Brooks³, J. W. Rickard¹, and H. L. Evans², ¹*Illinois State University, Normal*, ²*University of Missouri, Columbia*, ³*Oklahoma State University, Stillwater.*

186 **Digestibility energy determination of canola meal and full-fat canola seeds in pigs: limitations of the substitution method.** P. Leterme*, P. Kish, and A. D. Beaulieu, *Prairie Swine Centre Inc., Saskatoon, SK, Canada.*

187 **Effects of dietary pine cone meal on growth performance, blood characteristics, carcass quality and fecal odor emission gases in finishing pigs.** S. O. Shin*¹, J. H. Lee², K. W. Park², J. H. Cho¹, Y. J. Chen¹, J. S. Yoo¹, K. Y. Whang³, and I. H. Kim¹, ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*Korea National Arboretum, Gyeonggi, Korea*, ³*Korea University, Seoul, Korea.*

114 **Effects of replacement of corn with rice in weaned pig diets under commercial conditions.** M.T. Che*¹, M.U. Steidinger², and J.E. Pettigrew¹, ¹*Department of Animal Sciences, University of Illinois, Urbana, IL 61801*, ²*Swine Nutrition Services Inc., Anchor, IL.*

188 **Evaluation of dextrose, lactose, and whey sources in phase 2 starter diets for weanling pigs.** J. R. Bergstrom*, C. N. Groesbeck, J. M. Benz, M. D. Tokach, J. L. Nelssen, S. S. Dritz, J. M. DeRouche, and R. D. Goodband, *Kansas State University, Manhattan.*

189 **Effects of feeding fermented soy protein (FSP) on nitrogen balance and apparent ileal amino acid digestibility in weaned pigs.** J. S. Yoo*¹, J. H. Cho¹, Y. J. Chen¹, S. O. Shin¹, H. J. Kim¹, Y. Hwang¹, Y. Wang¹, K. Y. Whang², I. H. Kim¹, S. B. Cho³, and D. W. Kim³, ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*Korea University, Seoul, Korea*, ³*National Institute of Animal Science, Suwon, Korea.*

190 **Evaluation of FSP (fermented soy protein) to replace soybean meal in weaned pigs: growth performance, blood urea nitrogen and total protein concentrations in serum and nutrient digestibility.** J. H. Cho*¹, B. J. Min¹, Y.J. Chen¹, J. S. Yoo¹, Q. Wang¹, J. H. Ahn², I. B. Chung², and I. H. Kim¹, ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*National Institute of Animal Science, Suwon, Gyeonggi-do, Korea.*

191 **Comparative efficacy of import fish meals and fermented fish meal on ileal nutrient digestibility in weaned pigs.** J. H. Cho*¹, Y. J. Chen¹, J. S. Yoo¹, Y.

Wang¹, Y. Huang¹, H. J. Kim¹, S. O. Shin¹, I. H. Kim¹, J. H. Ahn², and I. B. Chung²,
¹*Dankook University, Cheonan, Choongnam, Korea*, ²*National Institute of Animal Science, Soowon, Gyeonggi, Korea*.

- 192 **Effects of plant protein source containing multienzyme supplementation on performance, nutrient digestibility and milk characteristics in sow.** H. J. Kim^{*1}, J. H. Cho¹, Y. J. Chen¹, J. S. Yoo¹, S. O. Shin¹, Y. Huang¹, I. H. Kim¹, S. J. Lee², and H. J. Jung², ¹*Dankook University, Cheonan, Choongnam, Korea*, ²*National Institute of Animal Science, Seonghwan, Choongnam, Korea*.
- 193 **Glucose release correlates with piglet's preference for cereal based feeds.** D. Solà-Oriol¹, S. Pujol^{1,2}, T. van Kempen², E. Roura^{*3}, and D. Torrallardona¹, ¹*IRTA, Mas de Bover, Constantí, Spain*, ²*Provimi RTC, Belgium*, ³*Lucta SA, Barcelona, Spain*.
- 194 **Evaluation of alternative energy systems when applied to two genetic populations of pigs with different body composition.** A. Schinckel^{*1}, D. Mahan², T. Wiseman², and M. Einstein¹, ¹*Purdue University, West Lafayette, IN*, ²*The Ohio State University, Columbus*.

Odor and Nutrient Management - Posters

Chair: Marc L. Bauer, North Dakota State University, Fargo

Exhibit Hall

- 213 **Effect of microbial phytase inclusion on phosphorus digestibility from flaxseed meal for pigs.** L. Eastwood^{*1}, A. Owusu-Asiedu², P. Kish¹, A. Jasnier³, A.D. Beaulieu¹, and P. Leterme¹, ¹*Prairie Swine Centre Inc., 2105 - 8th Street East, Saskatoon, SK, S7H 5N9, Canada*, ²*Danisco Animal Nutrition, Box 777, Marlborough, Wiltshire, SN8 1XN, United Kingdom*, ³*ESITPA, 27100 Val de Reuil, France*.
- 214 **Effects of condensed tannins on hydrogen sulfide production and the sulfate-reducing bacterial population of swine manure.** C. Spence^{*}, T.R. Whitehead, and M.A. Cotta, *National Center for Agricultural Utilization Research, USDA-ARS, Peoria, IL USA*.
- 215 **Evaluation of the effectiveness of a biocurtain and electrostatic space-charge system for reducing total suspended particulate matter from swine building exhaust streams.** A. Rojo^{*}, M. Ellis, B. A. Peterson, T. Funk, Y. Zhang, S. Jerez, Y. Su, and M. Robert, *University of Illinois, Urbana, IL, USA*.

Ruminant Nutrition – Posters Session II

Chair: Eugene Felton, West Virginia University, Morgantown

Exhibit Hall

- 248 **Effects of rumen-protected Ca salts of conjugated linoleic acid (CLA) and previous rate of gain on fatty acid composition.** J. W. S. Yancey^{*}, H. Flórez-Díaz, E. B. Kegley, and J. K. Apple, *Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville, AR*.
- 249 **Effects of rumen-protected Ca salts of conjugated linoleic acid (CLA) and previous rate of gain on visual display, and sensory characteristics of beef steaks.** J. W. S. Yancey^{*}, H. Flórez-Díaz, E. B. Kegley, and J. K. Apple, *Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville, AR*.
- 110 **Canola meal replacing dried distillers grains with solubles in lactating dairy cow diets.** C.N. Mulrooney^{*}, D.J. Schingoethe, K.F. Kalscheur, and A.R. Hippen, *South Dakota State University, Brookings, SD, USA*.
- 250 **Effect of dietary cation-anion difference on intake and urinary pH in high concentrate diets.** M.K. Luebbecke^{*}, G.E. Erickson, T.J. Klopfenstein, and N.F. Meyer, *University of Nebraska, Lincoln, NE*.

- 251 **The effect of mineral supplement delivery system on behavior of beef cows grazing topographically rugged native range.** N. A. Sproul*, K. C. Olson, J. S. Drouillard, J. R. Jaeger, J. W. Bolte, D. R. Linden, R. A. Kreikemeier, L. A. Pacheco, M. D. Thomas, and J. J. Higgins, *Kansas State University, Manhattan.*
- 252 **Effects of WDGS or DDGS inclusion in medium concentrate receiving diets fed to beef calves on intake, average daily gain, and gain efficiency.** B. W. Neville*¹, M. L. Bauer¹, K. Karges², M. Gibson², and G. P. Lardy¹, ¹*North Dakota State University, Fargo, ND, USA,* ²*Poet Nutrition, Sioux Falls, SD, USA.*
- 107 **Effects of high dietary nitrate on feed intake, weight, and plasma parameters in sheep.** R. Cockrum*, K. Austin, P. Ludden, and K. Cammack, *University of Wyoming, Laramie, WY, USA.*
- 253 **Effects of prepartum whole cottonseed or whole raw soybean supplementation on response to estrus synchronization and timed AI by suckled mature beef cows.** M. D. Thomas*, K. C. Olson, J. S. Stevenson, J. R. Jaeger, J. W. Bolte, N. A. Sproul, and D. R. Linden, *Kansas State University, Manhattan.*
- 254 **Effect of Optaflexx inclusion on feedlot performance and carcass characteristics of yearling steers.** C. R. Dahlen*¹, G. I. Crawford², and A. DiCostanzo³, ¹*University of Minnesota Northwest Research and Outreach Center, Crookston,* ²*Extension Regional Center, Hutchinson,* ³*Department of Animal Science, Saint Paul.*
- 255 **Effect of water consumption on rumen temperature.** T.K. Dye and C.J. Richards*, *Oklahoma State University, Stillwater, Oklahoma, United States.*
- 303 **The effects of extruding distillers grain on particle size and extruder emissions.** J.D. Lee*¹, P.M. Walker¹, A.L. Shreck¹, and G.A. Apgar², ¹*Illinois State University, Normal, IL USA,* ²*Southern Illinois University, Carbondale, IL USA.*
- 256 **Effects of advancing gestation and lactation on dry matter intake by primiparous beef heifers fed warm-season grass hay.** D. R. Linden*, K. C. Olson, D. E. Anderson, J. R. Jaeger, L. A. Pacheco, K. E. Holcomb, J. W. Bolte, N. A. Sproul, and M. D. Thomas, *Kansas State University, Manhattan.*
- 257 **Distillers Grains in Flaked Corn Diets.** L.E. Sims*¹, R.B. Hicks¹, D.L. OverOverbeke¹, P.K. Camfield², J.J. Martin², T.K. Dye¹, B.P. Holland¹, C.L. Maxwell¹, C.R. Krehbiel¹, and C.J. Richards¹, ¹*Oklahoma State University, Stillwater, Oklahoma, United States,* ²*Oklahoma Panhandle State University, Goodwell, Oklahoma, United States.*
- 258 **Rumen Temperature Monitoring for Determination of Health.** L.E. Sims*, T.K. Dye, B.P. Holland, L.O. Burciaga-Robles, D.L. Step, R.W. Fulton, C.R. Krehbiel, and C.J. Richards, *Oklahoma State University, Stillwater, Oklahoma, United States.*
- 304 **Economic analysis of beef cattle finishing diets containing corn and soybean co-products.** D.S. Stoner*¹, P.M. Walker¹, and L.A. Forster², ¹*Illinois State University, Normal, IL USA,* ²*Archer Daniels Midland Company, Decatur, IL USA.*

Swine Extension - Posters

Chair: Jason Woodworth, Lonza, Inc, Enterprise, KS

Exhibit Hall

- 77 **Impact of weaning weight and early postweaning growth of pigs to late finishing growth when fed either corn-soybean meal based diets or low nutrient excretion diets.** A. Schinckel*, B. Richert, D. Sholly, J. Radcliffe, and M. Einstein, *Purdue University, West Lafayette, IN.*
- 78 **Effect of birth weight on growth, composition, mortality and endpoint value.** J. S. Fix* and M. T. Sec, *North Carolina State University, Raleigh.*

Validation of flank-to-flank allometric equations in predicting weight of lactating sows and lactation weight change. R. C. Sulabo*, M. D. Tokach, S. S. Dritz, E. J. Wiedemann, R. D. Goodband, J. M. DeRouchey, and J. L. Nelssen, *Kansas State University, Manhattan*.

Wednesday, March 19 SYMPOSIA AND ORAL SESSIONS

Beef/Small Ruminant Extension II Feedlot Management

Chair: Erik Loe, South Dakota State University, Brookings

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- 9:00 AM 60 **Factors influencing Certified Angus Beef® acceptance rates.** G.D. Fike* and M.E. King, *Certified Angus Beef LLC, Wooster, OH USA*.
- 9:15 AM 61 **Factors affecting lot CAB® acceptance rate of beef calves in the Iowa Tri-County Steer Carcass Futurity.** G.D. Fike¹, M.E. King¹, and W.D. Busby*², ¹*Certified Angus Beef LLC, Wooster, OH USA*, ²*Iowa State University, Ames, IA USA*.
- 9:30 AM 62 **Effect of health on feedlot performance and carcass traits in beef calves.** W.D. Busby¹, D. Strohbeh¹, L.R. Corah*², and M.E. King², ¹*Iowa State University, Ames, IA, USA*, ²*Certified Angus Beef LLC, Wooster, OH, USA*.
- 9:45 AM 63 **Effect of varying corn price on the economics of two cattle production systems.** W.A. Griffin*, T.J. Klopfenstein, and G.E. Erickson, *University of Nebraska, Lincoln, NE, USA*.

Breeding and Genetics II

Genetic Control of Feed Utilization Symposium

Chair: Joe Cassady, North Carolina State University, Raleigh

142-144

- 9:00 AM 46 **(Invited) Genetic aspects of residual feed intake in pigs.** J. C. M. Dekkers*, W. Cai, S. Lkhagvadorj, O. Couture, C. K. Tuggle, D. Nettleton, and L. Anderson, *Iowa State University, Ames*.
- 9:45 AM 47 **(Invited) The role of rumen function in efficiency of feed utilization.** V. Fellner*, *North Carolina State University, Raleigh*.
- 10:30 AM **Break.**
- 10:45 AM 48 **(Invited) Genomic architecture of energy utilization and its role in beef cattle efficiency.** M. Allan*, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*.
- 11:30 AM 49 **(Invited) Residual feed intake of heifers sired by high or low residual feed intake EBV Angus bulls.** J. Minick Bormann*, D. W. Moser, and T. T. Marston, *Kansas State University, Manhattan*.
- 11:50 AM 50 **(Invited) Relationships among measures of feed utilization, ADG, and ultrasonic measures.** K. A. Gray*, G. B. Huntington, M. H. Poore, C. S. Whisnant, and J. P. Cassady, *North Carolina State University, Raleigh*.

Growth, Development, Muscle Biology, and Meat Science II

Chair: Ann Waylan Brackenridge, Cargill, Inc., Wichita, KS

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- 9:00 AM 116 **Genetic parameter estimates of fatty acid composition and meat quality traits in Duroc pigs selected for intramuscular fat content for six generations.** J. L. Burkett*, T. J. Baas, D. C. Beitz, C. R. Schwab, N. L. Berry, and S. Zhang, *Iowa State University, Ames, IA, USA.*
- 9:15 AM 117 **Birth weight, but not litter size, impacts growth performance of pigs.** J.F. Patience¹, A.D. Beaulieu*¹, P. Leterme¹, and J.L. Aalhus², ¹*Prairie Swine Centre, Inc., Saskatoon, SK, Canada*, ²*Agriculture and Agri-Food Canada Lacombe Research Centre, Lacombe, AB, Canada.*
- 9:30 AM 118 **Piglet birth weight has very little impact on carcass quality, muscle composition, or eating quality of pork.** A.D. Beaulieu*¹, J.L. Aalhus², J.F. Patience¹, and I.L. Larsen², ¹*Prairie Swine Centre, Inc., Saskatoon, SK, Canada*, ²*Agriculture and Agri-Food Canada Lacombe Research Centre, Lacombe, AB, Canada.*
- 9:45 AM **Break.**
- 10:00 AM 119 **Effect of castration or raw potato starch supplementation prior to slaughter on growth performance, carcass characteristics, and meat quality of entire male pigs.** C. Pauly^{2,1}, S. Ampuero¹, S. Dubois¹, J. Messadène¹, and G. Bee*¹, ¹*Agroscope Liebefeld Posieux, Posieux, Switzerland*, ²*Swiss College of Agriculture, Zollikofen, Switzerland.*
- 10:15 AM 120 **Implant Programs in the presence of a beta-agonist.** K. J. Vander Pol*, M. S. Davis, W. C. Koers, and O. A. Turgeon, Jr., *Koers-Turgeon Consulting Services, Inc., Salina, KS, USA.*
- 10:30 AM 121 **Effects of wet distillers grains plus solubles on marbling attributes and fat content of beef.** A.S. de Mello Junior*, C.R. Calkins, B.E. Jenschke, L.S. Senaratne, and G.E. Erickson, *University of Nebraska-Lincoln, Lincoln, NE, USA.*

Nonruminant Nutrition IV

Sow and Mineral Nutrition

Chair: Chad Hastad, Swine Nutrition Services, Truman, MN

204FG

Sponsored by: Alltech, Inc.

- 9:00 AM 195 **The feeding of dry distillers grain with solubles to lactating sows.** L. L. Greiner*¹, X. Wang², G. Allee², and J. Connor³, ¹*Innovative Sow Solutions, LLC, Carthage, IL*, ²*University of Missouri, Columbia*, ³*Professional Swine Management, LLC, Carthage, IL.*
- 9:15 AM 196 **Plasma insulin concentrations of sows fed omega-3 fatty acids or high protein diet individually or in combination during late gestation and lactation.** B. J. Min*¹, R. D. Mateo², and S. W. Kim¹, ¹*North Carolina State University, Raleigh*, ²*Texas Tech University, Lubbock.*
- 9:30 AM 197 **Effects of lactation feed intake and creep feeding on sow and piglet performance.** R. C. Sulabo*, M. D. Tokach, J. Y. Jacela, J. L. Nelssen, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan.*
- 9:45 AM 198 **Effects of varying creep feeding duration on pre-weaning performance and the proportion of pigs consuming creep feed.** R. C. Sulabo*, M.

- D. Tokach, E. J. Wiedemann, J. Y. Jacela, J. L. Nelssen, S. S. Dritz, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan*.
- 10:00 AM 199 **Response of cull sows to ad libitum feeding.** M. T. Knauer*¹, M. T. See¹, J. A. Hansen², A. L. P. de Souza², and D. C. Kendall², ¹*North Carolina State University, Raleigh*, ²*Murphy-Brown LLC*.
- 10:15 AM 200 **The effects of organic trace minerals on sow reproductive and litter performance.** J. S. Jolliff* and D. C. Mahan, *The Ohio State University, Columbus*.
- 10:30 AM 201 **Factors affecting sow mortality may be related to nutrition.** D. C. Mahan*, B. L. Bishop, and J. C. Peters, *The Ohio State University, Columbus*.
- 10:45 AM 80 **Copper supplementation promotes growth of piglets in the presence of dietary ZnO and antibiotic (carbadox).** V. Perez-Mendoza*¹, M. Steidinger², T. Ward³, and J. Pettigrew¹, ¹*University of Illinois, Urbana, IL*, ²*Swine Nutrition Services Inc., Anchor, IL*, ³*Zinpro Corporation, Eden Prairie, MN*.
- 11:00 AM 202 **Net portal absorption of zinc from zinc sulfate and zinc amino acid chelate in growing pigs.** S. W. Kim*¹, M. I. Perret-Gentil², M. W. Hart², and R. A. Samford³, ¹*North Carolina State University, Raleigh*, ²*Texas Tech Health Sciences Center, Lubbock, TX*, ³*Albion-Advanced Nutrition, Clearfield, UT*.
- 11:15 AM 203 **Evaluating organic trace mineral levels on growth, tissue mineral and plasma responses in weanling and grower pigs.** R. E. Howdyshe¹* and D. C. Mahan, *The Ohio State University, Columbus*.
- 11:30 AM 204 **Effects of dietary supplementation of benzoic, formic, and lactic acids on growth and health of pigs.** S. W. Kim*¹, J. O. Vaughn², and D. A. Monson³, ¹*North Carolina State University, Raleigh*, ²*Emerald Performance Materials, Kalama, WA*, ³*Texas Tech University, Lubbock*.
- 11:45 AM 205 **Effects of dietary supplementation of benzoic, formic, and lactic acids on carcass characteristics of pigs.** B. J. Min*¹, J. O. Vaughn², and S. W. Kim¹, ¹*North Carolina State University, Raleigh*, ²*Emerald Performance Materials, Kalama, WA*.

Odor and Nutrient Management

Chair: Marc L. Bauer, North Dakota State University, Fargo

146

- 9:00 AM 206 **Fermentable non-starch polysaccharides increase the excretion of bacterial proteins in the pig's faeces and reduce urinary N excretion.** J. Bindelle¹, P. Leterme*², J. Wavreille³, J.P. Destain³, and A. Buldgen¹, ¹*Gembloux Agricultural University, passage des Déportés, B-5030 Gembloux, Belgium*, ²*Prairie Swine Centre Inc., 2105 - 8th Street East, Saskatoon, SK, S7H 5N9, Canada*, ³*Centre Wallon de Recherches agronomiques, B-5030 Gembloux, Belgium*.
- 9:15 AM 207 **The effect of common antimicrobial feed additives on the survival and viability of MicroSource S in swine excreta.** T. Parrott*¹, A. Veldkamp¹, C. Wehnes¹, J. Tchetter², and R. Stock³, ¹*Agtech Products, Inc., Waukesha, WI, USA*, ²*Pleasant Valley Colony Farm, Flandreau, SD, USA*, ³*DSM Nutritional Products, Inc., Parsippany, NJ, USA*.
- 9:30 AM 208 **Prevalence of antibiotic resistant *E. coli* in water runoff collected from soil to which swine manure was applied.** J. P. Holt*, E. van Heugten, A. K. Graves, M. T. See, and W. E. M. Morrow, *North Carolina State University, Raleigh, North Carolina, USA*.

- 9:45 AM 209 **Effects of a phytase enzyme formulated for meal diets on piglet performance.** C. Starkey*, D. Campbell, N. Ward, and J. Wilson, *DSM Nutritional Products, Parsippany, NJ, USA.*
- 10:00 AM 210 **Effects of dietary manipulation on the mass balance of N and P during the swine finishing phase.** M. B. Lachmann*, S. D. Carter, and J. W. Bundy, *Oklahoma State University, Stillwater, OK.*
- 10:15 AM 211 **Effects of soybean hull addition to a low nutrient excretion diet on pig performance and nutrient excretion during the finishing phase.** J. W. Bundy*, S. D. Carter, M. B. Lachmann, and J. P. Jarrett, *Oklahoma State University, Stillwater, OK.*
- 10:30 AM 212 **Aerobic composting or anaerobic stockpiling of feedlot manure.** M.K. Luebbe*, G.E. Erickson, T.J. Klopfenstein, and M.A. Greenquist, *University of Nebraska, Lincoln, NE.*

Physiology III Reproductive Physiology

**Chair: Kim Vonnahme, North Dakota State University, Fargo
138-140**

- 9:00 AM 227 **(Invited Young Scholar) Parturition and Mycobacterium avium subsp. paratuberculosis: a potential interface for the pathogenesis of Johne's disease.** E.L. Karcher*¹, D.C. Beitz¹, and J.R. Stabel², ¹*Iowa State University, Ames, IA,* ²*USDA-ARS-National Animal Disease Center, Ames, IA.*
- 9:30 AM 228 **(Invited Young Scholar) Automated body condition scoring: Technical and economic feasibility.** J.M. Bewley*^{1,2} and M.M. Schutz¹, ¹*Purdue University, West Lafayette, IN,* ²*University of Kentucky, Lexington, KY.*
- 10:00 AM 229 **(Invited Young Scholar) (Dairy Innovation Award) Regulatory role of the novel oocyte specific gene JY-1 in control of granulosa cell function and early embryonic development in cattle.** A. Bettegowda*¹ and G.W. Smith^{1,2}, ¹*Department of Animal Science, Michigan State University, East Lansing, MI, USA,* ²*Department of Physiology, Michigan State University, East Lansing, MI, USA.*
- 10:30 AM 297 **Expression of basic fibroblast growth factor (FGF2) and receptor (R) IIIc in uterine tissues during early pregnancy in sheep.** M. A. Minten*, L. P. Reynolds, M. L. Johnson, P. P. Borowicz, D. A. Redmer, A. T. Grazul-Bilska, and J. J. Bilski, *Dept. of Anim. Sci. and Center for Nutrition and Pregnancy, Fargo, ND, USA.*
- 10:45 AM 230 **Gene expression profiling of bovine ovarian follicular selection reveals networks of differentially expressed genes.** Zhilin Liu, Robert S. Youngquist, H. Allen Garverick, and Eric Antoniou*, *University of Missouri-Columbia, Columbia, MO, USA.*
- 11:00 AM 231 **Association between age and ovarian morphology in crossbred beef cows.** Robert A. Cushman*, *USDA, ARS, U.S. Meat Animal Research Center.*
- 11:15 AM 87 **Effect of standing estrus on LH pulses and subsequent progesterone following a fixed-time AI protocol.** S. D. Fields*, B. L. Perry, and G. A. Perry, *South Dakota State University, Brookings, South Dakota, USA.*
- 11:30 AM 232 **Associations between birth weight and fetal programming in commercial sows.** G. Foxcroft*, M. Hahn, J. Patterson, S. Sarmento, M. Smit, S. Town, and W. Dixon, *Swine Research & Technology Centre, University of Alberta, Edmonton, Alberta, Canada.*

- 11:45 AM 233 **Conceptus development during embryo elongation in lines of pigs selected for ovulation rate or uterine capacity.** J.R. Miles*¹, B.A. Freking¹, L.A. Blomberg², and J.L. Vallet¹, ¹USDA-ARS, US Meat Animal Research Center, Clay Center, NE, USA, ²USDA-ARS, Beltsville Agricultural Research Center, Beltsville, MD, USA.
- 12:00 PM 234 **Maternal plasma progesterone and estradiol concentrations prior to farrowing are not associated with either birth intervals or stillbirth rates in pigs.** J. L. Vallet*, J. A. Nienaber, T. M. Brown-Brandl, and J. R. Miles, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, Nebraska, USA.
- 12:15 PM 235 **Gilt development traits associated with whether a gilt farrows a litter.** M. T. Knauer*¹, M. T. See¹, and D. W. Newcom², ¹North Carolina State University, Raleigh, NC, ²Genetic Improvement Services, Newton Grove, NC.

Ruminant Nutrition III

Metabolism & Rumen Function

**Chair: Alvaro Garcia, South Dakota State University, Brookings
204AB**

- 9:00 AM 277 **Effects of roughage source and dried distiller's grains on ruminal fermentation and apparent total tract digestibility of finishing diets.** S. Uwituze*¹, G.L. Parsons¹, M. K. Shelor¹, B.E. Depenbusch¹, K.K. Karges², M.L. Gibson², and J.S. Drouillard¹, ¹Kansas State University, Manhattan, KS, USA, ²Poet Nutrition, Sioux Falls, SD, USA.
- 9:15 AM 278 **Correlation of insulin (I), glucose (G), and insulin-like growth factor-1 (IGF-1) to residual feed intake (RFI), average daily gain (ADG) and feed intake (FI) in beef steers.** M. P. Davis*, J. W. Golden, J. H. Porter, M. S. Kerley, and D. H. Keisler, University of Missouri.
- 9:30 AM 279 **Ruminal and abomasal infusion of starch hydrolysate differentially decreases expression of cationic amino acid transporter (CAAT) mRNA by small intestinal epithelia of forage-fed beef steers.** S. F. Liao*, E. S. Vanzant, D. L. Harmon, K. R. McLeod, J. A. Boling, and J. C. Matthews, Department of Animal and Food Sciences, University of Kentucky, Lexington, KY, USA.
- 9:45 AM 280 **Effects of crude glycerin on performance and carcass traits of finishing heifers.** G. L. Parsons*, M. K. Shelor, and J. S. Drouillard, Kansas State University, Manhattan, Kansas.
- 10:00 AM 281 **Comparison of two calf wintering systems utilizing cornstalk grazing and dry lotting.** W.A. Griffin*, T.J. Klopfenstein, and G.E. Erickson, University of Nebraska, Lincoln, NE, USA.
- 10:15 AM **Break.**
- 10:30 AM 282 **Restricted feeding does not impact performance of growing steers during the subsequent grazing phase.** C.O. Anglin*, D.A. Blasi, M.P. Epp, K.C. Olson, C.D. Reinhardt, and R.L. Derstein, Kansas State University, Manhattan, KS, USA.
- 10:45 AM 283 **Effect of Dietary Cation-Anion Difference on Feedlot Performance, N mass balance, and Manure pH.** M.K. Luebbeck*, G.E. Erickson, T.J. Klopfenstein, M.A. Greenquist, and J.R. Benton, University of Nebraska, Lincoln, NE.
- 11:00 AM 284 **Effect of finishing ration protein reduction on performance and carcass characteristics of feedlot steers.** J. J. Wagner¹, K. L. Neuhold*¹, T. C. Bryant²,

T. E. Engle¹, and S. L. Archibeque¹, ¹*Colorado State University, Fort Collins, CO, USA*, ²*Five Rivers Ranch Cattle Feeding, Loveland, CO, USA*.

- 11:15 AM 285 **The effect of organic trace minerals on feedyard performance and carcass merit in crossbred yearling steers.** J. J. Wagner, J. L. Lacey*, and T. E. Engle, *Colorado State University, Fort Collins, CO, USA*.
- 11:30 AM 286 **Post-weaning performance of fall-born beef steers weaned from endophyte-infected tall fescue pastures on different dates in the spring.** J. D. Caldwell*¹, K. P. Coffey¹, W. K. Coblentz², J. A. Jennings³, D.S. Hubbell, III¹, D. L. Kreider¹, and C. F. Rosenkrans, Jr.¹, ¹*University Of Arkansas, Fayetteville, AR, USA*, ²*USDA-ARS, Marshfield, WI, USA*, ³*Cooperative Extension Service, Little Rock, AR, USA*.
- 11:45 AM 287 **Ruminal fermentation and apparent total tract digestibility of finishing diets containing distiller's dried grains with dry-rolled or steam-flaked corn.** M. L. May*, M. L. Hands, M. J Quinn, J. O. Wallace, C. D. Reinhardt, L. Murray, and J. S. Drouillard, *Kansas State University, Manhattan, KS, USA*.

MIDWEST SECTION ADSA/ASAS
Committee Assignments
2007-2008

Animal Behavior, Housing, Well Being

Anna Johnson, Chair
Janeen Salak-Johnson
Ernest Minton

Breeding and Genetics

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Janet Snow

Extension - Dairy

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Growth, Development, Muscle Biology, and Meat Science

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Dan Nonneman
Terry Houser

Nonruminant Nutrition

Steve Dritz, Chair
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Aaron Gaines

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Ruminant Nutrition

Gene Felton, Chair
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Brad Skaar, Chair
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Kelly Bruns

David H. Baker Symposium

Kevin Halpin, Chair
Gail Czarnecki-Maulden
Terri Parr

Billy Day Symposium

William R. Lamberson, Chair
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Stephen K. Webel
Duane Davis

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Innovation in Dairy Research

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1972	V. B. Mayrose, Purdue University
1974	M. R. Geasler, Iowa State University
1976	R. J. Vatthauer, University of Wisconsin
1977	R. J. Epley, University of Minnesota
1978	W. L. Singleton, Purdue University
1979	D. E. Schafer, Kansas State University
1980	L. R. Corah, Kansas State University
1981	M. G. Hogberg, Michigan State University
1982	C. W. Spaeth, Kansas State University
1983	L. H. Thompson, University of Illinois
1984	M. F. Hutjens, University of Illinois
1985	G. L. Kuhl, Kansas State University
1986	D. D. Simms, Kansas State University
1987	F. K. Brazle, Kansas State University
1988	S. B. Laudert, Kansas State University
1989	M. A. Russell, Purdue University
1990	D. F. Parrett, University of Illinois
1991	D. B. Faulkner, University of Illinois
1992	J. L. Nelssen, Kansas State University
1993	A. P. Schinckel, Purdue University
1994	D. A. Funk, University of Wisconsin, Madison
1995	G. C. Shurson, University of Minnesota
1996	R. D. Shaver, University of Wisconsin, Madison
1997	R. D. Goodband, Kansas State University
1998	Not given
1999	M. D. Tokach, Kansas State University
2000	J. F. Smith, Kansas State University
2001	W. O. Herring, University of Missouri
2002	M. J. Brouk, Kansas State University
2003	W. J. Powers, Iowa State University
2004	S. J. Moeller, The Ohio State University
2005	K. J. Stalder, Iowa State University
2006	P. Fricke, University of Wisconsin
2007	G. C. Lamb, University of Minnesota

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
2002	M. Morrison, Ohio State University
2003	T. P. L. Smith, USDA, NE
2004	C. W. Ernst, Michigan State University
2005	E. Huff-Lonergan, Iowa State University
2006	A. S. Cupp, University of Nebraska
2007	J. C. Matthews, University of Kentucky

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
2002	W. N. Osburn, Michigan State University
2003	S. C. Kelm, University of Wisconsin-River Falls
2004	M. S. Weber Nielsen, Michigan State University
2005	B. D. Nielsen, Michigan State University
2006	B. A. Reiling, University of Nebraska
2007	K. W. Bruns, South Dakota 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
2002	Not Given
2003	J. M. Campbell, APC, Inc., IA
2004	D. M. Webel, United Feeds, IN
2005	T. A. Rathje, Danbred North America, Columbus, NE
2006	T. E. Sauber, Pioneer, A Dupont Company
2007	M. J. Pettitt, Prairie Swine Centre, LLC, Canada

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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
2002	B. Meyer, University of Nebraska
2003	A. Harvey, South Dakota State University
2004	L. H. Bach, Michigan State University
2005	A. M. Meyer, Michigan State University
2006	L. D. Holmes, Southern Illinois University

2007 R. Schnobrich, University of Minnesota
B. H. Godsey, Kansas State University

GRADUATE STUDENTS - ORAL

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 T. G. McDanel, University of Nebraska*
J. H. Hampton, University of Missouri**
2002 K. M. Hargrave, University of Nebraska*
M. J. Hersom, Oklahoma State University**
2003 J. Luther, North Dakota State University*
R. Main, Kansas State University**
2004 R. C. Bott, University of Nebraska*
M. M. Martinez, Michigan State University**
2005 J. M. Koch, West Virginia University*
N. D. Fastinger, The Ohio State University**
2006 D. M. Larson, North Dakota State University*
M. Gorocica-Buenfil, The Ohio State University**
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R. N. Dilger, University of Illinois**

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2007 P. L. Nester, North Dakota State University*
N. DiLorenzo, University of Minnesota**

*M.S. Division

**Ph.D. Division

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1998	M. Bode, University of Missouri D. Hasekamp, University of Missouri J. Rumph, Michigan State University M. Schoenfeld, University of Minnesota
1999	L. Becker, University of Minnesota
2000	R. Hawkins, North Dakota State University
2001	Discontinued

ASAS MIDWESTERN SECTION PRESIDENTS

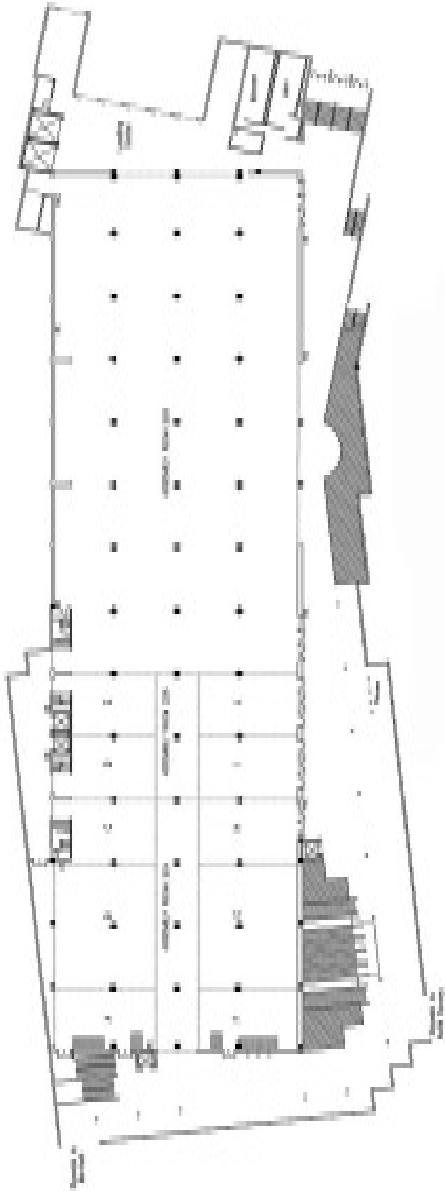
1963	O. G. Bentley, University of Illinois
1964-65	R. H. Grummer, University of Wisconsin
1966-67	G. R. Johnson, The Ohio State University
1968	R. J. Meade, University of Minnesota
1969	J. A. Hoefer, Michigan State University
1970-71	W. E. Dinusson, North Dakota State University
1972	J. F. Lasley, University of Missouri
1973	U. S. Garrigus, University of Illinois
1974-75	V. C. Speer, Iowa State University
1976	H. S. Teague, The Ohio State University
1977	R. M. Luther, South Dakota State University
1978	B. N. Day, University of Missouri
1979-80	D. R. Zimmerman, University of Nebraska
1981	A. L. Pope, University of Wisconsin
1982	R. D. Goodrich, University of Minnesota
1983	E. R. Miller, Michigan State University
1984	W. R. Woods, Purdue University
1985	L. R. Corah, Kansas State University
1986	B. D. Moser, University of Missouri
1987	S. E. Curtis, University of Illinois
1988	R. G. Zimbelman, Upjohn; D. J. Meisinger, Indiana
1989	T. J. Klopfenstein, University of Nebraska
1990	J. R. Romans, South Dakota State University
1991	J. E. Pettigrew, University of Minnesota
1992	C. E. Sasse, Cenex/Land O'Lakes
1993	M. G. Hogberg, Michigan State University
1994	G. L. Allee, University of 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 University
1998	R. P. Lemenager, Purdue University
1999	S. P. Ford, Iowa State University
2000	J. R. Males, Oregon State University
2001	M. L. Day, The Ohio State University
2002	R. K. Johnson, University of Nebraska
2003	C. L. Ferrell, USDA, Clay Center

2004	G. C. Shurson, University of Minnesota
2005	A. L. Grant, Purdue University
2006	D. L. Hancock, Elanco Animal Health, Greenfield, IN
2007	R. L. Moser, JBS United, Inc., Sheridan, IN

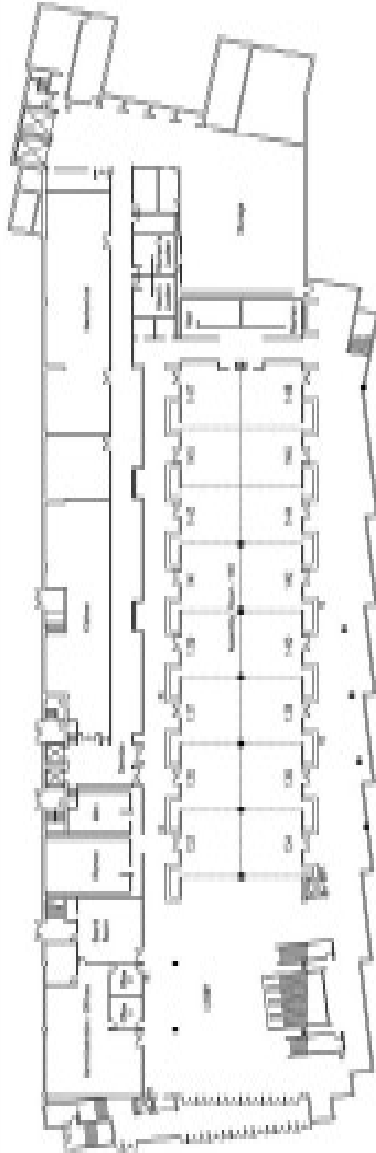
ADSA MIDWEST BRANCH PRESIDENTS

1992	J. F. Keown, University of Nebraska
1993	J. G. Linn, University of Minnesota
1994	D. J. Schingoethe, South Dakota State University
1995	J. L. Morrill, Kansas State University
1996	M. F. Hutjens, University of Illinois
1997	M. A. Faust, Iowa State University
1998	J. K. Drackley, University of Illinois
1999	R. D. Shaver, University of Wisconsin
2000	R. J. Grant, University of Nebraska
2001	M. L. Eastridge, The Ohio State University
2002	J. D. Quigley III, APC, Inc.
2003	S. T. Franklin, University of Kentucky
2004	D. K. Combs, University of Wisconsin
2005	L. L. Timms, Iowa State University
2006	P. Hoffman, University of Wisconsin - Madison
2007	M. M. Schutz, Purdue University

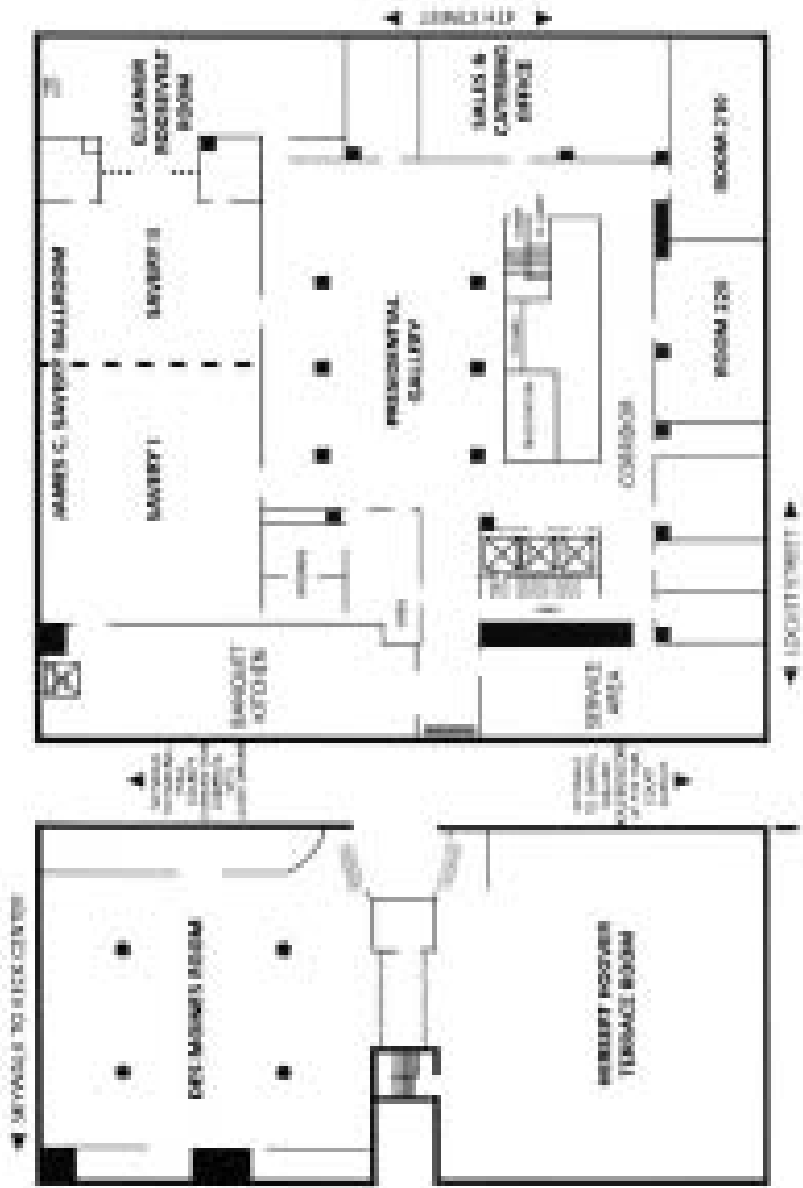
POLK COUNTY CONVENTION COMPLEX Upper Level



POLK COUNTY CONVENTION COMPLEX Lower Level



THE SAVERY HOTEL SECOND FLOOR



Room Assignments

ACTIVITY

ROOM

Monday PM

Graduate Student Competitive Research Papers, M.S. Oral Division.....	146
Undergraduate Student Competitive Research Papers, Oral Division.....	138-140
David H. Baker Amino Acid Symposium.....	204FG
Graduate Student Competitive Research Papers, Ph.D. Oral Division.....	134
ARPAS Exams, Convention Center.....	Board Room
AQ - Quiz Bowl Finals.....	204FG

Poster Presentations

Graduate Student Competitive Research Papers, M.S.	Exhibit Hall
Graduate Student Competitive Research Papers, Ph.D.	Exhibit Hall
Undergraduate Student Competitive Research Papers	Exhibit Hall
Animal Behavior, Housing and Well Being	Exhibit Hall
Nonruminant Nutrition - Session I	Exhibit Hall
Physiology	Exhibit Hall
Ruminant Nutrition – Session I.....	Exhibit Hall

Tuesday AM

Animal Behavior, Housing, & Well Being Symposium: Swine Well-Being Issues: How are they being addressed?	142-144
Billy N. Day Symposium: Delivering Semen to the Swine Industry.....	138-140
Breeding and Genetics I.....	148
Nonruminant Nutrition I: Distillers Grains	204FG
Ruminant Nutrition I: Byproducts	204AB
Beef/Small Ruminant Extension I: Sulfur in Ruminant Diets Symposium.....	134
Ruminant Nutrition II: Dairy	205IJ
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Swine Extension I.....	146

Tuesday PM

Dairy Extension Symposium: Focus on Forages — Facts and Fantasies	204AB
Nonruminant Nutrition II: Alternative Ingredients	142-144
Physiology I, Nutritional Physiology: The role of nutrition in reproduction symposium.....	138-140
Nonruminant Nutrition III: Amino Acids and Additives.....	204FG
Joint Swine Extension II and Growth, Development, Muscle Biology, and Meat Science I: Changing the dietary fatty acid profile and its influence on carcass composition, muscle biology, and meat characteristics symposium	205IJ
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Physiology II: Nutritional Physiology..... 138-140

Poster Presentations

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Breeding and GeneticsExhibit Hall
Growth, Development, Muscle Biology, and Meat ScienceExhibit Hall
Nonruminant Nutrition - Session II.....Exhibit Hall
Odor and Nutrient ManagementExhibit Hall
Ruminant Nutrition – Session IIExhibit Hall
Swine ExtensionExhibit Hall

Wednesday AM

Breakfast, Business Meeting, Awards Program.....Exhibit Hall
Beef/Small Ruminant Extension II: Feedlot Management..... 136
Breeding and Genetics II, Genetic Control of Feed Utilization Symposium 142-144
Growth, Development, Muscle Biology, and Meat Science II 134
Nonruminant Nutrition IV: Sow and Mineral Nutrition..... 204FG
Odor and Nutrient Management 146
Physiology III: Reproductive Physiology..... 138-140
Ruminant Nutrition III: Metabolism & Rumen Function..... 204AB

FUTURE MEETINGS

2009 March 16–18
2010 March 15–17

Notes