

Monday, March 13, 2017

**Gary Allee Symposium
Swine Industry Expansion: Needs and Opportunities Within**

Chair: Rodney Hinson, JBS United

Sponsor:
8:00 AM - 12:00 PM
Grand Ballroom South

- 8:00 AM **Welcoming Remarks**
- 8:10 AM 78 **Overview of Swine Industry Growth: Packing Facilities and Production Facilities Needed to Support Growth.**
J. Kerns, Kerns and Associates, Ames, IA*
- 9:05 AM 79 **What Does Growth Mean for the Swine Industry: Economics and Exports.**
S. Malakowsky, AgStar Financial Services, Mankato, MN*
- 10:00 AM **Break**
- 10:15 AM 80 **Nutritional Philosophies for Formulation and Practical Approaches to Feeding During Times of Depressed Margins.**
P. M. Cline, Christensen Farms, Sleepy Eye, MN*
- 11:05 AM 81 **Technologies to Reduce the Reliance on Antibiotics.**
C. Johnson, Carthage Veterinary Service, Carlyle, IL*

**David Baker Symposium
Current Issues in Amino Acids in Pigs**

Chair: Hans Stein, University of Illinois

Sponsor:
1:00 PM - 5:15 PM
Grand Ballroom South

- 1:00 PM **Welcoming Remarks**
- 1:05 PM 48 **New Directions and Technologies in AA Research for Livestock.**
P. J. Moughan, Riddet Institute, Massey University, Palmerston North, New Zealand*
- 1:55 **General Abstract I**
- 2:10 PM 46 **Basic Concepts and Potential Impact of Precision Feeding Technologies in the Production of Growing-Finishing Pigs.**
C. Pomar, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*
- 2:50 PM **Break**
- 3:10 PM **General Abstract II**

3:25 PM 47 **Use of Low Protein Diets for Weanling Pigs.**
*M. Nyachoti**, University of Manitoba, Winnipeg, MB, Canada

4:05 PM **General Abstract III**

4:20 PM 49 **Amino Acid Requirements of Sows Nursing 13 to 14 Piglets.**
*P. K. Theil**, Aarhus University, Tjele, Denmark

5:00 PM **Concluding Remarks**

Graduate Student Oral Competition - MS I

Chair:

Sponsor:

1:45 PM - 3:45 PM
201

1:45 PM 82 **Growth Performance Responses of Growing Pigs When Fed Corn-Soybean Meal Diets with Corn DDGS Treated with Fiber Degrading Enzymes with or without Extended Steeping.**
Y. Rho¹, K. Moran², D. Weyl¹, C. Zhu¹, M. C. Walsh³, E. Kiarie¹, E. van Heugten², and C. F. M. de Lange¹, ¹University of Guelph, Department of Animal Biosciences, ON, Canada, ²North Carolina State University, Raleigh, ³Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, United Kingdom

2:00 PM 83 **Effects of Yeast-Derived Rumen Escape Microbial Protein on Lactational Performance and Metabolic Status of Transition Dairy Cows.**
V. Higginson, B. Baurhoo, Y. Schuermann, M. Taibi, A. St-Yves, R. Duggavathi, and A. Mustafa*, McGill University, Sainte-Anne De Bellevue, QC, Canada

2:15 PM 84 **Effect of Diet Complexity and Multicarbohydase on Growth Performance and Intestinal Morphology in Weaned Pigs.**
B. Koo¹, C. F. M. de Lange², and C. M. Nyachoti¹, ¹University of Manitoba, Winnipeg, MB, Canada, ²University of Guelph, Department of Animal Biosciences, ON, Canada

2:30 PM 85 **Assessment of Growth and Health Performance of Pigs Born from Magnetically Nanopurified Boar Spermatozoa.**
C. L. Durfey¹, S. F. Liao¹, D. D. Burnett¹, M. A. Crenshaw¹, C. S. Steadman¹, S. T. Willard¹, P. L. Ryan¹, H. Clemente², and J. M. Feugang¹, ¹Mississippi State University, Department of Animal and Dairy Sciences, Mississippi State, ²Clemente Associates, Madison, CT

2:45 PM **Break**

3:00 PM 86 **Timely on-Farm Euthanasia of Pigs: Development of an Innovative and Interactive Training Program for Caretakers.**
C. R. Mullins, M. Pairis-Garcia, and M. R. B. Campler*, The Ohio State University, Columbus

3:15 PM 87 **Determining the Phosphorus Release for Natuphos E 5,000 G Phytase for Nursery Pigs.**
K. M. Gourley, J. C. Woodworth, J. M. DeRouchey, M. D. Tokach, S. S. Dritz, and R. D. Goodband*, Kansas State University, Manhattan

3:30 PM 88 **Effects of Cow-Calf Production System and Post-Weaning Management on Finishing Performance and Carcass Characteristics of Calves Produced from an Intensively Managed Cow-Calf Production System.**
*S. E. Gardine**, University of Nebraska, Lincoln

Graduate Student Oral Competition - PhD

Chair:

Sponsor:

1:45 PM - 4:15 PM

216

- 1:45 PM 97 **The Effect of Isoflurane and Meloxicam on Behaviour of Dairy Goat Kids Following Caustery Disbudding.**
M. N. Hempstead^{1,2}, M. Stewart³, J. R. Waas², V. M. Cave¹, and M. A. Sutherland¹, ¹AgResearch, Hamilton, New Zealand, ²The University of Waikato, Hamilton, New Zealand, ³InterAg, Hamilton, New Zealand
- 2:00 PM 98 **Impact of Maternal Protein Restriction on Meat Quality and Fatty Acid Profile of Progeny.**
M. J. Webb¹, J. J. Kincheloe², R. N. Funston³, K. R. Underwood¹, J. F. Legako⁴, M. G. Gonda¹, K. C. Olson², and A. D. Blair², ¹South Dakota State University, Brookings, ²South Dakota State University, Rapid City, ³University of Nebraska, West Central Research and Extension Center, North Platte, ⁴Texas Tech University, Lubbock
- 2:15 PM 99 **Effect of Dietary Lysine on the Skeletal Muscle Intramuscular Fat Content and Fatty Acid Composition of Late-Stage Finishing Pigs.**
T. Wang, M. S. Hasan, M. A. Crenshaw, A. T. Sukumaran, T. Dinh, and S. F. Liao, Mississippi State University, Department of Animal and Dairy Sciences, Mississippi State*
- 2:30 PM 100 **Evaluating the Efficacy of Commercial Feed Additives as Potential Porcine Epidemic Diarrhea Virus (PEDV) Mitigation Strategies in Complete Feed and Spray-Dried Porcine Plasma as Determined by Polymerase Chain Reaction Analysis and Bioassay.**
J. T. Gebhardt¹, J. C. Woodworth¹, C. K. Jones¹, M. D. Tokach¹, J. M. DeRouchey¹, R. D. Goodband¹, J. R. Bergstrom², J. F. Bai¹, Q. Chen³, J. Zhang³, P. C. Gauger³, R. J. Derscheid³, D. R. Magstadt³, P. H. Arruda³, A. Ramirez³, R. G. Main³, and S. S. Dritz¹, ¹Kansas State University, Manhattan, DSM Nutritional Products, LLC., Parsippany, NJ, ³Iowa State University, Ames
- 2:45 PM 101 **Comparison of Digestibility of Amino Acids in Full-Fat Soybean, Soybean Meal, and Peanut Flour Between Broiler Chickens and Pigs.**
C. S. Park¹, A. Helmbrecht², J. K. Htoo², and O. Adeola¹, ¹Purdue University, Department of Animal Sciences, West Lafayette, IN, ²Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany
- 3:00 PM **Break**
- 3:15 PM 103 **Lipid Peroxidation Decreases Performance and Viability of Nursery Pigs.**
P. L. Chang¹, D. S. Rosero², C. E. Zier-Rush², S. Smith², J. N. Wood³, K. E. Lloyd³, R. D. Boyd², and E. van Heugten³, ¹North Carolina State University, Department of Animal Science, Raleigh, ²The Hanor Company, Inc., Franklin, KY, ³North Carolina State University, Raleigh
- 3:30 PM 104 **Genetic, Heterosis and Maternal Effects on Voluntary Water Consumption in Mice.**
M. T. Haag, K. D. Wells, and W. R. Lamberson, University of Missouri, Division of Animal Sciences, Columbia*
- 3:45 PM 105 **A Meta-Analysis on the Effects of Backgrounding Strategy on Feedlot and Carcass Performance.**
H. E. Johnson and A. DiCostanzo, University of Minnesota, Saint Paul*
- 4:00 PM 106 **Determination of Net Energy Content of Hemp Hulls and Processed Hemp Hull Products Fed to Growing Pigs Using Indirect Calorimetry.**
J. W. Kim and C. M. Nyachoti, University of Manitoba, Winnipeg, MB, Canada*

Undergraduate Student Oral Competition I

Chair: Paul M. Walker, Illinois State University

Sponsor:

1:45 PM - 4:15 PM

213

1:45 PM 379 **Initial Evaluation of Floor Cooling on Lactating Sows Under Acute Heat Stress.**
*A. J. Smith^{*1}, F. A. Cabezon¹, A. P. Schinckel¹, J. N. Marchant-Forde², J. S. Johnson², and R. M. Stwalley³, ¹Purdue University, Department of Animal Sciences, West Lafayette, IN, ²USDA-ARS, Livestock Behavior Research Unit, West Lafayette, IN, ³Purdue University, Department of Agricultural Biological Engineering, West Lafayette, IN*

2:00 PM 380 **Effects of Dietary Zinc Source and Concentration on Performance of Growing-Finishing Pigs Reared with Reduced Floor Space.**
*J. P. Holen^{*1}, Z. J. Rambo², A. M. Hilbrands¹, and L. J. Johnston¹, ¹University of Minnesota, West Central Research and Outreach Center, Morris, ²Zinpro Corporation, Eden Prairie, MN*

2:15 PM 381 **Effects of Spring Administration of Extended-Release Eprinomectin (LongRange) on Fescue Toxicosis, Performance and Reproduction of Fall-Born Beef Heifers.**
J. M. Kordas^{}, F. A. Ireland, and D. W. Shike, University of Illinois at Urbana-Champaign*

2:30 PM 382 **Relationship of Proteolysis and Superoxide Dismutase Activity to Tenderness of Prime and Select Grade Beef.**
*N. J. Herrera^{*1}, E. K. Kunze¹, K. Domenech-Pérez¹, F. A. Ribeiro¹, M. D. Chao², and C. R. Calkins¹, ¹University of Nebraska-Lincoln, ²California State University, Chico*

2:45 PM 383 **Effect of Increasing Amount of Amaferm on Animal Performance in Receiving Feedlot Cattle.**
*K. Nickles^{*1} and A. Relling², ¹The Ohio State University, Columbus, ²The Ohio State University, Department of Animal Sciences, Wooster*

3:00 PM **Break**

3:15 PM 384 **Influence of Seminal Additives on Sow Fertility.**
*T. Brown^{*1}, J. Ngula², B. Alegre², G. Hernandez¹, R. N. Kirkwood³, R. Manjarin¹, and J. C. D. de Tejerina², ¹California Polytechnic State University, San Luis Obispo, ²University of León, Department of Medicine, Surgery and Veterinary Anatomy, Leon, Spain, ³University of Adelaide, School of Animal and Veterinary Sciences, Roseworthy, Australia*

3:30 PM 385 **Neonatal Pig Supplement Effects on Mortality.**
*D. B. Scales^{*1} and M. Schwartz², ¹Michigan State University, East Lansing, ²Swartz Farms Inc., Sleepy Eye, MN*

3:45 PM 386 **Validation of Individual Computerized Sow Feeding Systems in Lactation.**
*G. E. Nichols^{*1}, K. M. Gourley¹, J. M. DeRouche¹, J. C. Woodworth¹, S. S. Dritz¹, R. D. Goodband¹, and H. L. Frobose², ¹Kansas State University, Manhattan, ²Jyga Technologies Inc., Quebec City, QC, Canada*

4:00 PM 387 **Cooking from a Frozen State, Endpoint Temperature and Post-Cookery Chilling Affect Internal and External Color and Cooking Losses in Ground Beef Patties.**
Z. M. Hicks^{}, J. W. S. Yancey, J. A. Apple, and T. M. Johnson, University of Arkansas, Division of Agriculture, Department of Animal Science, Fayetteville*

Undergraduate Student Oral Competition II

Chair: Justin Rickard, Illinois State University

Sponsor:

1:45 PM - 4:15 PM

214

- 1:45 PM 388 **Piglet Creching Decreases Protein Content in Colostrum.**
*Y. A. Montano^{*1}, R. Manjarin¹, K. Petrovski², and R. N. Kirkwood², ¹California Polytechnic State University, San Luis Obispo, ²University of Adelaide, School of Animal and Veterinary Sciences, Roseworthy, Australia*
- 2:00 PM 389 **In-Vitro Dry Matter Digestibility of Multiple Sources of Microalgae and Microalgae Products for Growing Pigs.**
*B. W. Hanson^{*1}, Z. K. Zeng¹, G. C. Shurson¹, R. Ruan², C. Chen¹, and P. E. Urriola¹, ¹University of Minnesota, Department of Animal Sciences, St. Paul, ²University of Minnesota, Department of Biosystems and Bioproducts Engineering, St. Paul*
- 2:15 PM 390 **Effects of Post-Insemination Dam Nutrition on Longevity and Calf Performance.**
C. L. Mogck^{}, J. A. Walker, and G. A. Perry, South Dakota State University, Department of Animal Science, Brookings*
- 2:30 PM 391 **The Impact of Oregano Essential Oil Supplementation over Two Complete Reproductive Cycles in Multiparous Sows.**
M. Renken^{}, B. C. Thaler, J. A. Clapper, and C. L. Levesque, South Dakota State University, Brookings*
- 2:45 PM 392 **Cognitive Ability, Activity and Metabolic Rate in Mice Divergent for Water Consumption.**
*D. Magee^{*1,2}, M. T. Haag², S. B. Johnson², C. Rosenfeld³, K. D. Wells², and W. R. Lamberson², ¹Tougaloo College, Tougaloo, MS, ²University of Missouri, Division of Animal Sciences, Columbia, ³University of Missouri, Department of Biomedical Sciences, Columbia*
- 3:00 PM **Break**
- 3:15 PM 393 **A Commercially Available Activity Monitor Attached to the Ear Tag Detects Swine Oral-Nasal-Facial Behaviors.**
*G. V. Hernandez^{*1}, R. Manjarin¹, Y. Luo², A. N. Schmitz², P. J. VandeVord³, E. M. Fievisohn³, and L. E. Hulbert², ¹California Polytechnic State University, San Luis Obispo, ²Kansas State University, Manhattan, ³Virginia Polytechnic Institute and State University, Blacksburg*
- 3:30 PM 394 **Effects of Maternal Nutrition on Fructose Concentrations and Expression of GLUT5 in Bovine Utero-Placental Fluids and Tissues from Days 16 to 50 of Gestation.**
*N. P. Greseth^{*1}, M. S. Crouse¹, K. J. McLean¹, M. R. Crosswhite¹, N. Negrin Pereira¹, A. K. Ward¹, L. P. Reynolds¹, C. R. Dahlen¹, B. W. Neville², P. P. Borowicz³, and J. S. Caton¹, ¹North Dakota State University, Department of Animal Sciences, Fargo, ²North Dakota State University, Central Grasslands Research Extension Center, Streeter*
- 3:45 PM 395 **Effects of Dietary Probiotics on Cattle Stress Behavior.**
A. J. Kelsey^{}, K. W. Walter, and J. D. Colpoys, Truman State University, Kirksville, MO*
- 4:00 PM 396 **Dimensional Measurements and Visual Appraisal As Predictors of Liveweight of Finishing Pigs.**
S. Royal^{}, J. A. Erceg, J. G. Wiegert, M. T. Knauer, and E. van Heugten, North Carolina State University, Raleigh*

Graduate Student Oral Competition - MS II

Chair:

Sponsor:

1:45 PM - 4:00 PM

202

- 1:45 PM 89 **The Effects of Hydroponic Wheat Fodder on Fecal Metabolites in Equines.**
J. M. Francis^{}, G. C. Handlos, G. A. Apgar, and E. B. Venable, Southern Illinois University, Carbondale*
- 2:00 PM 90 **Effect of Essential Oils or Tylosin on Performance, Liver Abscesses, Carcass Characteristics and Meat Quality in Feedlot Steers.**

*J. R. Pukrop^{*1}, B. T. Campbell², and J. P. Schoonmaker¹, ¹Purdue University, West Lafayette, IN ²DSM Nutritional Products, LLC., Parsippany, NJ*

2:15 PM 91 **Assessment of an Alternative Technique for Measuring Body Temperature in Pigs.**
*A. L. Petry^{*1}, W. S. McGilvray¹, A. R. Pendleton², and A. Rakhshandeh¹, ¹Texas Tech University, Lubbock, ²South Plains College, Lubbock, TX*

2:30 PM 92 **Influence of GnRH Supplementation at CIDR Removal on Estrus Expression and Interval to Estrus in Beef Cattle.**
J. J. J. Rich^{}, E. J. Northrop, E. L. Larimore, and G. A. Perry, Department of Animal Science, South Dakota State University, Brookings*

2:45 PM **Break**

3:00 PM 93 **Influence of Ethanol Co-Products and Barley on Growth Performance and Carcass Characteristics of Growing-Finishing Pigs in Liquid or Dry Feeding Systems.**
B. Tostenson^{}, A. Tekeste, D. Pangen, H. Manu, P. Ren, X. Yang, and S. K. Baidoo, University of Minnesota, Southern Research and Outreach Center, Waseca*

3:15 PM 94 **Selection of Pigs for Lean Gain When Fed High Fiber Diets to Improve Fiber, N, and Energy Digestibility and Digestive Tract Characteristics.**
J. A. Erceg^{}, K. Moran, M. T. Knauer, and E. van Heugten, North Carolina State University, Raleigh*

3:30 PM 95 **Comparison of Expression of Glucose, Fructose and Cationic Amino Acid Transporters in Bovine Caruncular and Inter-Caruncular Tissue Between the Pregnant and Non-Pregnant Uterine Horn from Days 16 to 50 of Gestation.**
*M. S. Crouse^{*1}, K. J. McLean¹, N. P. Greseth¹, M. R. Crosswhite¹, N. Negrin Pereira¹, A. K. Ward¹, L. P. Reynolds¹, C. R. Dahlen¹, B. W. Neville², P. P. Borowicz³, and J. S. Caton¹, North Dakota State University, Department of Animal Sciences, Fargo, ²North Dakota State University, Central Grasslands Research Extension Center, Streeter*

3:45 PM 96 **Influence of Thermally Peroxidized Soybean Oil on Growth Performance and Oxidative Status in Growing Pigs.**
*S. C. Lindblom^{*1}, N. K. Gabler¹, and B. J. Kerr², ¹Iowa State University, Ames, ²USDA-ARS, Ames, IA*

Tuesday, March 14, 2017

**Physiology Symposium
Molecular Events Impacting Production of Fertile Gametes**

Chair: Clay A. Lents, USDA, ARS, U.S. Meat Animal Research Center

Sponsor:
8:30 AM - 11:05 AM
205/206

8:30 AM **Welcoming Remarks**

8:35 AM 307 **Precision Animal Breeding to Make Genetically Castrated Animals for Improved Animal Welfare and Alternative Breeding Applications.**
T. S. Sonstegard^{}, S. C. Fahrenkrug, and D. Carlson, Recombinetics, Inc., St. Paul, MN*

9:05 AM 308 **A Transgenic Boar Model to Elucidate the Role of Gonadotropin-Releasing Hormone 2 (GnRH2) and Its Receptor in Regulating Testes and Sperm Function.**
*B. R. White^{*1}, A. T. Desaulniers¹, R. A. Cederberg¹, G. A. Mills¹, and C. A. Lents², ¹University of Nebraska-Lincoln, ²USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*

9:35 AM **Break**

9:50 AM 309 **MicroRNA and Extracellular Vesicle Mediated Cellular Communication within the Bovine Follicle.**

*L. K. Christenson**, University of Kansas Medical Center, Kansas City

10:20 AM 310 **High-Throughput Sequencing Methods (RNA-Seq and PolyA-Seq) to Characterize Full-Length mRNAs in Transcriptionally-Silent Bull Sperm: Potential Non-Invasive Measures of Bull Fertility.**

*B. L. Sartini**, University of Rhode Island, Kingston

10:50 AM 311 **Characterization of Proteins in the Bovine Epididymal and Seminal Fluid and Proteins Attached to Epididymal and Ejaculated Sperm.**

G. A. Perry¹, E. J. Northrop¹, P. J. Gunn², and R. A. Cushman³, ¹South Dakota State University, Department of Animal Science, Brookings, ²Iowa State University, Department of Animal Science, Ames, ³USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE

Growth, Development, Muscle Biology and Meat Science Symposium Is Bigger Better? A Discussion About the Benefits and Implications of Pigs Becoming Heavier

Chair: Dustin Boler, University of Illinois

Sponsor:

8:30 AM - 11:00 AM

216

8:30 AM **Welcoming Remarks**

8:35 AM **Animal Handling, Transport and Lairage Considerations for Increased Market Hog Weights: A Producer Perspective.**

*Paul Ayers**, The Maschhoffs, LLC., Carlyle, IL

9:05 AM 122 **Heavy Weight Market Pigs: Status of Knowledge and Future Needs Assessment.**

F. Wu, K. R. Vierck, J. M. DeRouchey, T. G. O'Quinn, M. D. Tokach, R. D. Goodband, S. S. Dritz, and J. C. Woodworth, Kansas State University, Manhattan*

9:35 AM **Break**

9:50 AM **Meat Quality of Heavy Weight Pigs.**

*Brandon Fields**, Pig Improvement Company, Hendersonville, TN

10:20 AM **Potential Implications on Consumer Acceptability of Increasing Carcass Weights of Pigs.**

*Steve Larsen**, National Pork Board, Des Moines, IA

10:50 AM **Concluding Remarks**

Nonruminant Nutrition Symposium Programming of the Immune System

Chair: Crystal Levesque, South Dakota State University

Sponsor:

8:30 AM - 11:15 AM

203/204

- 8:30 AM 143 **What Are the Nutritional and Metabolic Costs of Immune System Activation in Pigs?**
*N. K. Gabler^{*1}, S. M. Curry¹, W. P. Schweer¹, S. M. Lonergan¹, K. Schwartz¹, E. R. Burrough¹, and C. L. Loving², ¹Iowa State University, Ames, ²USDA National Animal Disease Center, Ames, IA*
- 9:00 AM 144 **Pre-Programming of the Immune System to Enhance Immunological Capacity of Offspring.**
N. A. Karrow^{}, S. Y. Oh, A. Lee, Z. Li, L. You, R. E. Fisher, and C. F. M. de Lange, University of Guelph, Department of Animal Biosciences, ON, Canada*
- 9:30 AM 145 **Immune System Stimulation Increases Nursery Pig Maintenance Energy Requirements.**
*N. F. Huntley^{*1}, C. M. Nyachoti², and J. F. Patience¹, ¹Iowa State University, Ames, ²University of Manitoba, Winnipeg, MB, Canada*
- 9:45 AM 146 **Ingestion of Soy Isoflavones Alters the Immune Response of Pigs during a Respiratory Viral Challenge.**
B. N. Smith, A. Morris, M. L. Oelschlager, and R. N. Dilger^{}, University of Illinois at Urbana-Champaign*
- 10:00 AM 147 **Early Changes in the Human Microbiome Alter Immune Function and Immunologically Mediated Disorders.**
J. Vanderhoof^{}, Harvard Medical School, Boston, MA*
- 10:30 AM 148 **Immune System Stimulation (ISS) Alters the Protein Deposition (PD) and Increases Dietary Threonine Requirements of Growing Pigs.**
*W. S. McGilvray¹, C. F. M. de Lange², A. R. Pendleton³, and A. Rakhshandeh^{*1}, ¹Texas Tech University, Lubbock, University of Guelph, Department of Animal Biosciences, ON, Canada, ³South Plains College, Lubbock, TX*
- 10:45 AM 149 **Management of Clinical or Subclinical Immune Activation .**
E. Merlot¹, A. Prunier², and N. Le Floc'h³, ¹INRA, Saint-Gilles, France, ²PEGASE, Agrocampus Ouest, INRA, Saint-Gilles, France, ³INRA-UMR SENA, Saint-Gilles, France

David Schingoethe Symposium Key Challenges to Dairy Cattle Production in the Midwest

Chair: Daryl H Kleinschmit, Zinpro Corporation

Sponsor:

8:30 AM - 11:35 AM
 210/211

- 8:30 AM **Welcoming Remarks**
- 8:32 AM 50 **Inflammation and Immune Activation During Periods of Stress in Dairy Cattle.**
M. Garcia^{} and B. J. Bradford, Kansas State University, Manhattan*
- 9:17 AM 51 **Potential Impact of Midwest Dairy Facility Design on Cow Time Budgets.**
J. P. Harner^{}, Kansas State University, Department of Biological and Agricultural Engineering, Manhattan*
- 10:02 AM 52 **Key Challenges to Dairy Cattle Production in the Midwest Environment: Forage Quality.**
D. K. Combs^{}, University of Wisconsin-Madison*
- 10:47 AM 53 **The Next Frontier in Nutritional Modeling and Ration Formulation-Water.**
D. P. Casper^{}, Furst-McNess Company, Freeport, IL*

Ruminant Nutrition I: By-Products and Beef

Chair: Tara L. Felix, Pennsylvania State University

Sponsor:

8:30 AM - 11:30 AM

213

- 8:30 AM 335 **Predicting Feedlot Growth Performance over the Feeding Period Utilizing Steer Age and Body Weight.**
C. J. Bittner^{}, A. K. Watson, J. C. MacDonald, and G. E. Erickson, University of Nebraska-Lincoln*
- 8:45 AM 336 **Evaluation of 0 or 300 Mg of Optaflexx® on Growth Performance and Carcass Characteristics of Steers Fed to Different Degrees of Finish.**
R. M. Jones¹, C. J. Bittner¹, F. H. Hilscher¹, M. F. Wilken², and G. E. Erickson¹, ¹University of Nebraska-Lincoln, ²Elanco Animal Health, Greenfield, IN
- 9:00 AM 337 **The Evaluation of Brown Midrib Corn Silage Hybrids and Silage Inclusion for Finishing Beef Cattle.**
F. H. Hilscher¹, C. J. Bittner¹, J. N. Anderson², and G. E. Erickson¹, ¹University of Nebraska-Lincoln, ²Dow AgroSciences, Mycogen Seeds, Indianapolis, IN
- 9:15 AM 338 **The Evaluation of Brown Midrib Corn Silage Hybrids in Growing Diets Fed to Beef Steers.**
F. H. Hilscher¹, C. J. Bittner¹, J. N. Anderson², and G. E. Erickson¹, ¹University of Nebraska-Lincoln, ²Dow AgroSciences, Mycogen Seeds, Indianapolis, IN
- 9:30 AM 339 **Effect of Feeding Brown Midrib Corn Silage in Growing Diets for Beef Cattle on Nutrient Digestibility and Ruminal Fermentation Characteristics.**
F. H. Hilscher¹, M. J. Jolly-Briethaupt¹, J. L. Gramkow¹, M. M. Norman¹, J. N. Anderson², and G. E. Erickson¹, ¹University of Nebraska-Lincoln, ²Dow AgroSciences, Mycogen Seeds, Indianapolis, IN
- 9:45 AM 340 **Effects of Using Dried Distiller's Grains Plus Solubles in Post-Partum Diets of Beef Cows on Heifer Offspring Reproductive Performance.**
E. G. Taylor¹, R. P. Lemenager¹, and K. R. Stewart², ¹Purdue University, West Lafayette, IN ²Purdue University, Department of Animal Sciences, West Lafayette, IN
- 10:00 AM 341 **Evaluation of Corn Distillers Solubles on Finishing Steer Performance.**
B. Hansen^{}, University of Nebraska-Lincoln*
- 10:15 AM 342 **Evaluation of Protein in Distillers Grains on Site and Extent of Digestion in Finishing Diets.**
Z. E. Carlson¹, J. L. Gramkow¹, H. C. Hamilton¹, M. J. Jolly-Briethaupt¹, M. K. Luebbecke², G. E. Erickson¹, and J. C. MacDonald¹, ¹University of Nebraska-Lincoln, ²University of Nebraska, Scottsbluff
- 10:30 AM 343 **Effect of Three Initial Implant Programs with a Common Terminal Revalor®-200 on Feedlot Performance and Carcass Traits of Weaned Steers.**
C. R. Oney¹, A. K. Watson¹, G. E. Erickson¹, M. N. Streeter², R. J. Cooper³, D. J. Jordon³, and B. D. Dicke⁴, ¹University of Nebraska-Lincoln, ²Merck Animal Health, DeSoto, KS, ³Cattlemen's Nutrition Services, LLC, Lincoln, NE, ⁴Dicke Consultin, Lincoln, NE
- 10:45 AM 344 **Impact of Corn Oil Removal from Modified Distillers Grains Plus Solubles and Supplemental Corn Oil on Finishing Cattle Performance.**
J. E. Burhoop¹, C. J. Bittner¹, F. H. Hilscher¹, M. K. Luebbecke², J. C. MacDonald¹, and G. E. Erickson¹, ¹University of Nebraska-Lincoln, ²University of Nebraska, Scottsbluff
- 11:00 AM 345 **Impact of Feeding Distillers Grains with or without Oil Removal As Well As Oil Replenished on Nutrient Digestibility by Finishing Cattle.**

J. E. Burhoop^{*1}, *M. L. Jolly-Breithaupt*¹, *J. L. Gramkow*¹, *M. K. Luebbe*², *J. C. MacDonald*¹, and *G. E. Erickson*¹,
¹*University of Nebraska-Lincoln*, ²*University of Nebraska, Scottsbluff, NE*

11:15 AM 346 **Supplementing Varying Ratios of Modified Distillers Grains and Corn to Growing Beef Steers.**

C. A. Welchons^{*1}, *V. B. Ferrari*^{1,2}, *R. G. Bondurant*¹, *F. H. Hilscher*¹, *G. E. Erickson*¹, *T. J. Klopfenstein*¹, and *J. C. MacDonald*¹, ¹*University of Nebraska-Lincoln*, ²*University of Sao Paulo, Pirassununga, Brazil*

Ruminant Nutrition II: Beef and General

Chair: Mary E. Drewnoski, University of Nebraska

Sponsor:

8:30 AM - 11:45 AM

214

8:30 AM 347 **Young Scholar Presentation: The Impact of Nutrition and Reproductive Stage on Maternal and Fetal Pancreatic Exocrine and Endocrine Function in Ruminants.**

F. E. Keomanivong^{*}, *P. P. Borowicz*, *J. S. Caton*, *K. A. Vonnahme*, *A. Grazul-Bilska*, *D. A. Redmer*, and *K. C. Swanson*, *North Dakota State University, Department of Animal Sciences, Fargo*

9:00 AM 348 **Young Scholar Presentation: Characterization and Implications of Novel Rumen Viral and Methanogen Diversity Discovered through Targeted Genomic Approaches.**

C. L. Anderson^{*} and *S. C. Fernando*, *University of Nebraska-Lincoln*

9:30 AM 349 **Effect of Continuous or Rotational Grazing on Growing Steer Performance and Land Production.**

C. A. Welchons^{*}, *R. G. Bondurant*, *F. H. Hilscher*, *J. C. MacDonald*, *T. J. Klopfenstein*, and *A. K. Watson*, *University of Nebraska-Lincoln*

9:45 AM 350 **Corn Silage Rumen Undegradable Protein Levels and Extent of Digestion.**

C. R. Oney^{*}, *A. K. Watson*, *G. E. Erickson*, *J. C. MacDonald*, and *J. L. Gramkow*, *University of Nebraska-Lincoln*

10:00 AM 351 **Effect of an Injectable Trace Mineral at the Initiation of a 14 Day CIDR Protocol on Heifer Performance and Reproduction.**

R. S. Stokes^{*}, *A. R. Ralph*, *A. J. Mickna*, *W. P. Chapple*, *A. R. Schroeder*, *F. A. Ireland*, and *D. W. Shike*, *University of Illinois at Urbana-Champaign*

10:15 AM 352 **Effect of Late-Gestation Supplementation and Post-Partum Progesterin on Probability of Culling Spring Calving Cows in the Nebraska Sandhills.**

D. L. Broadhead^{*}, *M. Stockton*, *L. A. Stalker*, and *R. N. Funston*, *University of Nebraska, West Central Research and Extension Center, North Platte*

10:30 AM 353 **Effect of Maternal Nutrition on Performance of Nellore Cows and Pre-Weaning Growth of Their Progeny.**

L. M. Rodrigues^{*1}, *J. P. Schoonmaker*², *F. D. Resende*³, *G. R. Siqueira*³, *O. R. Machado Neto*⁴, *T. R. Gionbelli*¹, and *M. M. Ladeira*¹, ¹*Federal University of Lavras, Lavras, Brazil*, ²*Purdue University, West Lafayette, IN*, ³*Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil*, ⁴*Universidade Estadual Paulista, Botucatu, Brazil*

10:45 AM 354 **Effects of a Multi-Element Trace Mineral Injection and Dietary Vitamin E Supplementation on Performance, Carcass Characteristics and Color Stability of Strip Steaks from Beef Heifers.**

B. N. Harsh^{*}, *A. C. Dilger*, *D. D. Boler*, and *D. W. Shike*, *University of Illinois at Urbana-Champaign, Urbana, IL*

11:00 AM 355 **Comparison of Trace Mineral Repletion Strategies to Overcome a High Antagonist Diet.**

S. J. Hartman^{*}, *O. N. Genther-Schroeder*, and *S. L. Hansen*, *Iowa State University, Ames*

11:15 AM 356 **The Effects of Supplementing EPA and DHA during Late Gestation on Lamb Metabolism and Performance.**
D. N. Coleman¹, A. Relling¹, and K. C. Rivera-Acevedo², ¹ The Ohio State University, Department of Animal Sciences, Wooster, ²University of Puerto Rico at Mayagüez, Puerto Rico

11:30 AM 56 **Influence of the Brahman Breed in Beef Calf Lots Marketed through Summer Video Auctions from 1995 through 2015.**
E. D. McCabe¹, M. E. King¹, K. E. Fike¹, K. L. Hill², G. M. Rogers³ and K. G. Odde¹, ¹Kansas State University, Manhattan, ²Merck Animal Health, Kaysville, UT, ³Grassy Ridge Consulting, Aledo, TX

Extension - Swine

Chair: Mike Rincker, DPI Global

Sponsor:
8:30 AM - 12:00 PM
207

8:45 AM 68 **Characterization of Birth Weight and Colostrum Intake on Piglet Survival and Piglet Quality.**
J. G. Wiegert^{}, C. Garrison, and M. T. Knauer, North Carolina State University, Raleigh*

9:00 AM 69 **Troubleshooting Poor Litter Size in a Farrow-to-Wean Production System.**
S. Bloomer², J. G. Wiegert¹, C. Van Genderen², and M. T. Knauer¹, ¹North Carolina State University, Raleigh, ²US Pork Center of Excellence, Clive, IA

9:15 AM 70 **Evaluation of the Impact of Errors in the Sorting of Pigs for Market on Sort Loss at a Range of Marketing Ages.**
Y. Que^{}, F. A. Cabezon, and A. P. Schinckel, Purdue University, Department of Animal Sciences, West Lafayette, IN*

9:30 AM 71 **Evaluation of the Impact of the Magnitude of Errors in the Sorting of Pigs for Market on the Optimal Market Weight.**
J. Cheng^{}, F. A. Cabezon, Y. Que, and A. P. Schinckel, Purdue University, Department of Animal Sciences, West Lafayette, IN*

9:45 AM 72 **Effects of Supplemental Betaine to Semen Extenders on Semen Quality in Boars.**
D. W. Lugar¹, W. A. Krom¹, J. A. Proctor¹, P. D. Mings¹, and K. R. Stewart², ¹Purdue University, West Lafayette, IN, ²Purdue University, Department of Animal Sciences, West Lafayette, IN

10:00 AM 73 **Effect of Tail Docking on Welfare and Performance of Pigs during Nursery and Growing-Finishing Periods.**
Y. Li^{} and L. J. Johnston, University of Minnesota, West Central Research and Outreach Center, Morris*

10:15 AM 74 **Effect of Pad Cooling on Summer Barn Environment and Finishing Pig Temperature.**
J. G. Wiegert^{}, M. T. Knauer, and S. B. Shah, North Carolina State University, Raleigh*

10:30 AM 75 **Changes in Feet and Leg Joint Angles during First Gestation in Gilts Divergently Selected for Residual Feed Intake.**
J. D. Stock¹, J. M. Mumm¹, J. C. M. Dekkers¹, A. K. Johnson¹, S. Azarpajouh¹, K. J. Stalder¹, and J. A. Calderon Diaz^{2,3}, ¹Iowa State University, Department of Animal Science, Ames, ²Polish Academy of Sciences, Institute of Genetics and Animal Breeding, Department of Animal Behaviour and Welfare, Jastrzębiec, Magdalena, Poland, ³Teagasc Moorepark Grassland Research and Innovation Centre, Pig Development, Fermoy, Co. Cork, Ireland

10:45 AM 76 **Mycotoxin Prevalence in the 2016 Corn Crop.**
E. G. Hendel¹, S. M. Mendoza¹, T. Jenkins², and G. R. Murugesan¹, ¹BIOMIN America Inc., San Antonio, TX, ²BIOMIN Holding, GMBH, Getzersdorf, Austria

11:00 AM 77 **Metabolomic Characterization of Foaming Manure Pits in Swine Barns.**
Z. Bi¹, J. Gan¹, H. Li¹, B. Hu¹, and C. Chen², ¹University of Minnesota, St. Paul, ²University of Minnesota, Department of Animal Sciences, St. Paul

11:15 AM 86 **Timely on-Farm Euthanasia of Pigs: Development of an Innovative and Interactive Training Program for Caretakers.**
C. R. Mullins*, M. Pairis-Garcia, and M. R. B. Campler, The Ohio State University, Columbus

11:30 AM 384 **Influence of Seminal Additives on Sow Fertility.**
T. Brown^{*1}, J. Ngula², B. Alegre², G. Hernandez¹, R. N. Kirkwood³, R. Manjarin¹, and J. C. D. de Tejerina², ¹California Polytechnic State University, San Luis Obispo, ²University of León, Department of Medicine, Surgery and Veterinary Anatomy, Leon, Spain, ³University of Adelaide, School of Animal and Veterinary Sciences, Roseworthy, Australia

11:45 AM 388 **Piglet Creching Decreases Protein Content in Colostrum.**
Y. A. Montano^{*1}, R. Manjarin¹, K. Petrovski², and R. N. Kirkwood², ¹California Polytechnic State University, San Luis Obispo, ²University of Adelaide, School of Animal and Veterinary Sciences, Roseworthy, Australia

12:00 PM 396 **Dimensional Measurements and Visual Appraisal As Predictors of Liveweight of Finishing Pigs.**
S. Royal*, J. A. Erceg, J. G. Wiegert, M. T. Knauer, and E. van Heugten, North Carolina State University, Raleigh

Breeding and Genetics I

Chair: Jared E. Decker, University of Missouri

Sponsor:

8:30 AM - 10:30 AM

212

8:30 AM 32 **Genomic Prediction Accuracies Using Regularized Quantile Regression (RQR) Methodology.**
L. M. Barroso^{1,2}, F. Morgante³, T. F. Mackay³, A. C. C. Nascimento^{1,2}, M. Nascimento^{1,2}, and N. V. Serão^{*1}, ¹North Carolina State University, Raleigh, ²Universidade Federal de Viçosa, Brazil, ³North Carolina State University, Department of Biological Sciences, Raleigh

8:45 AM 33 **Estimation of Genetic Parameters, Genetic Trends and Growth Curve Parameters of Pigs Selected for Residual Feed Intake Using Quantile Regression.**
M. Nascimento^{1,2}, A. C. C. Nascimento^{1,2}, J. C. M. Dekkers³, and N. V. Serão^{*2}, ¹Universidade Federal de Viçosa, Brazil, ²North Carolina State University, Raleigh, ³Iowa State University, Department of Animal Science, Ames

9:00 AM 34 **Biological Evidence for Genomic Regions Associated with Host Response to Co-Infection with PRRS Virus and PCV2b in Commercial Nursery Pigs.**
J. R. Dunkelberger^{*1}, N. V. Serão^{1,2}, Z. Q. Weng^{1,3}, M. C. Niederwerder⁴, E. H. Waide^{1,5}, M. A. Kerrigan⁴, J. K. Lunney⁶, R. R. R. Rowland⁴, and J. C. M. Dekkers¹, ¹Iowa State University, Department of Animal Science, Ames ²North Carolina State University, Raleigh, ³ABS Global Inc., DeForest, WI, ⁴Kansas State University, Department of Diagnostic Medicine/Pathobiology, Manhattan, ⁵The Seeing Eye Inc., Morristown, NJ, ⁶USDA-ARS, Beltsville Agricultural Research Center, Animal Parasitic Diseases Laboratory, Beltsville, MD

9:15 AM 35 **Reaction Norm for Reproductive Performance During Porcine Reproductive and Respiratory Syndrome (PRRS) and Porcine Epidemic Diarrhea (PED) Outbreaks.**
C. L. Ferring^{*1}, K. A. Gray², and N. V. Serão¹, ¹North Carolina State University, Raleigh, ²Smithfield Premium Genetics, Rose Hill, NC

9:30 AM **Break**

9:45 AM 36 **A Natural Challenge Model for Disease Resilience in Wean-to-Finish Pigs.**
A. M. Putz^{*1}, J. C. S. Harding², F. Fortin³, G. Plastow⁴, and J. C. M. Dekkers⁵, ¹Iowa State University, Ames,

²University of Saskatchewan, Saskatoon, SK, Canada, ³Centre de Développement du Porc du Québec, QC, Canada, ⁴University of Alberta, Edmonton, AB, Canada, ⁵Iowa State University, Department of Animal Science, Ames

10:00 AM 37 **A Survey of Single Nucleotide Polymorphisms Identified from Whole-Genome Sequencing and Their Functional Effect in the Porcine Genome.**

B. N. Keel^{}, D. J. Nonneman, and G. A. Rohrer, USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*

10:15 AM 38 **Assessment of Methods for Accurate Reproductive Tract Scoring by Vulva Width As a Tool for Gilt Selection.**

*M. R. Romoser^{*1}, B. J. Hale¹, J. T. Seibert¹, K. L. Bidne¹, M. J. Dickson¹, T. J. Gall², L. H. Baumgard¹, A. F. Keating¹, and J. W. Ross¹, ¹Iowa State University, Ames, ²TriOak Foods, Oakville, IA*

Nonruminant Nutrition I: Minerals

Chair: Laura Merriman, University of Illinois

Sponsor:

8:30 AM - 11:15 AM

201

8:30 AM 178 **Effects of Zinc Oxide and Microbial Phytase on Standardized Total Tract Digestibility of Calcium in Maize-Based Diets Fed to Growing Pigs.**

*L. Blavi^{*1,2}, D. Solà-Oriol¹, J. F. Pérez¹, and H. H. Stein², ¹Universitat Autònoma de Barcelona, Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Bellaterra, Spain, ²University of Illinois at Urbana-Champaign*

8:45 AM 179 **Effects of Increasing Copper from either CuSO₄ or Combinations of CuSO₄ and a Cu-Amino Acid Complex on Growth Performance and Carcass Characteristics of Finishing Pigs.**

*C. B. Carpenter^{*1}, J. C. Woodworth¹, J. M. DeRouche¹, M. D. Tokach¹, R. D. Goodband¹, S. S. Dritz¹, and Z. J. Rambo², ¹Kansas State University, Manhattan, ²Zinpro Corporation, Eden Prairie, MN*

9:00 AM 180 **Phytate Hydrolysis, Intestinal Microbiota, Microbial Metabolites, and Innate Immune Cell Numbers are Changed in Growing Pigs Fed Diets with Varying Calcium-Phosphorus Levels and Fermentable Substrates.**

*C. M. E. Heyer^{*1,2}, S. Schmucker², E. Weiss², M. Eklund², T. Aumiller², E. Graeter², T. Hofmann², M. Rodehutschord², L. E. Hoelzle², J. Seifert², R. T. Zijlstra¹, V. Stefanski², and R. Mosenthin², ¹University of Alberta, Department of Agricultural, Food and Nutritional Science, Edmonton, AB, Canada, ²University of Hohenheim, Institute of Animal Science, Stuttgart, Germany*

9:15 AM 181 **Effects of Increasing Copper from Tri-Basic Copper Chloride or a Cu-Amino Acid Complex on Growth Performance of Nursery Pigs.**

*C. B. Carpenter^{*1}, J. C. Woodworth¹, J. M. DeRouche¹, M. D. Tokach¹, R. D. Goodband¹, S. S. Dritz¹, and J. L. Usry², ¹Kansas State University, Manhattan, ²Micronutrients, Indianapolis, IN*

9:30 AM 182 **True Total-Tract Digestibility of Calcium in Limestone and Dicalcium Phosphate for Twenty-Kilogram Pigs are Additive in a Semi-Purified Diet.**

*F. Zhang^{*1} and O. Adeola², ¹Purdue University, West Lafayette, IN, ²Purdue University, Department of Animal Sciences, West Lafayette, IN*

9:45 AM **Break**

10:00 AM 183 **To Determine the Effect of Superdosing Phytase on Nursery Pig Performance, Zinc and Copper Blood Serum Levels when Fed Varying Levels of Copper Supplementation.**

G. Cordero^{}, C. L. Bradley, and P. Wilcock, AB Vista, Marlborough, United Kingdom*

10:15 AM 184 **Alleged Predisposing Factors in Diets Fail to Increase the Incidence of Osteochondrosis Lesions in Growing Pigs at 12 and 24 Weeks of Age.**

*J. Baker¹, M. Grez^{*1}, J. A. Shutter¹, M. E. Wilson², and T. D. Crenshaw¹, ¹University of Wisconsin-Madison ²Zinpro Corporation, Eden Prairie, MN*

10:30 AM 185 **Effects of Chromium Methionine and Zinc Source on Performance, Carcass Traits and Meat Quality of Growing-Finishing Pigs.**

*X. Xu¹, Z. C. Li¹, H. L. Wang¹, L. Pan¹, X. K. Ma¹, Y. T. Xu¹, X. S. Piao¹, T. L. Ward², and F. Ji^{*3}, ¹China Agricultural University, Beijing, China, ²Zinpro Corporation, Eden Prairie, MN, ³Zinpro (Wuxi) Additives Bio-Technology Co., LTD, Shanghai, China*

10:45 AM 186 **Effect of Organic Cu Supplementation on Growth Performance, Apparent Total Tract Digestibility (ATTD) and Tissue Mineral Composition in Nursery Pigs.**

*Y. D. Jang^{*1}, J. Chang¹, F. N. Almeida², and M. D. Lindemann¹, ¹University of Kentucky, Lexington, ²Novus International, Inc., St. Charles, MO*

11:00 AM 380 **Effects of Dietary Zinc Source and Concentration on Performance of Growing-Finishing Pigs Reared with Reduced Floor Space.**

*J. P. Holen^{*1}, Z. J. Rambo², A. M. Hilbrands¹, and L. J. Johnston¹, ¹University of Minnesota, West Central Research and Outreach Center, Morris, ²Zinpro Corporation, Eden Prairie, MN*

Nonruminant Nutrition II: Feed Processing/Ingredients

Chair: Omarh Mendoza, The Maschhoffs, LLC.

Sponsor:

8:30 AM - 11:45 AM

202

8:30 AM 187 **Chemical Composition and Physicochemical Characteristics of Feed Ingredients and Effects on in Vitro Ileal and Total Tract Digestibility of Dry Matter.**

*D. M. D. L. Navarro^{*1}, E. M. A. M. Bruininx², L. de Jong², and H. H. Stein¹, ¹University of Illinois at Urbana-Champaign, ²Agrifirm Innovation Center, Royal Dutch Agrifirm, Apeldoorn, Netherlands*

8:45 AM 188 **Effects of Physicochemical Characteristics of Feed Ingredients on Total Tract Digestibility of Dry Matter, Energy, Fiber and Protein By Growing Pigs.**

*D. M. D. L. Navarro^{*1}, E. M. A. M. Bruininx², L. de Jong², and H. H. Stein¹, ¹University of Illinois at Urbana-Champaign, ²Agrifirm Innovation Center, Royal Dutch Agrifirm, Apeldoorn, Netherlands*

9:00 AM 189 **Does Chemical Composition Alter the Digestibility of Energy of Fat Sources Fed to 10 Kg and 50 Kg Pigs?**

T. A. Kellner^{} and J. F. Patience, Iowa State University, Ames*

9:15 AM 190 **Comparative Starch, Fiber, and Energy Digestibility and Characterization of Undigested Starch Using Confocal Laser Scanning of Pulse and Cereal Grains in Growing-Finishing Pigs.**

*F. P. Tan^{*1}, L. F. Wang², J. Gao¹, E. Beltranena^{2,3}, T. Vasanthan¹, and R. T. Zijlstra¹, ¹University of Alberta, Department of Agricultural, Food and Nutritional Science, Edmonton, AB, Canada, ²University of Alberta, Edmonton, AB, Canada, ³Alberta Agriculture and Forestry, Edmonton, AB, Canada*

9:30 AM 191 **Nutrient Digestibility of Mash, Steam Pelleted, and Extruded Barley and Faba Bean in Growing Pigs.**

*U. S. Ruiz^{*1,2}, G. C. Luna^{1,3}, L. F. Wang¹, E. Beltranena^{1,4}, and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²University of São Paulo, Piracicaba, SP, Brazil, ³Universidad Autónoma de Baja California, Mexicali, Mexico, ⁴Alberta Agriculture and Forestry, Edmonton, AB, Canada*

9:45 AM 192 **Determination of Optimal Pelletting Parameters to Maximize Pellet Durability of Reduced-Fat DDGS.**

A. D. Yoder^{}, J. M. Wilson, and C. R. Stark, Kansas State University, Manhattan*

10:00 AM 193 **Impact of PRRSV on Digestibility and Endogenous Losses in Pigs Fed High or Low Soybean Meal Diets.**

W. P. Schweer³, J. F. Patience, E. R. Burrough, and N. K. Gabler, Iowa State University, Ames

10:15 AM 194 **Chemical Composition and Amino Acid Digestibility of Soybean Meal Produced in the United States, China, Argentina, Brazil, or India.**

L. V. Lagos⁵ and H. H. Stein, University of Illinois at Urbana-Champaign

10:30 AM 195 **Estimation of the Productive Energy Content of Corn Germ Meal Based on a Growth Assay in Wean-to-Finish Pigs.**

J. E. Estrada¹, M. Ellis¹, O. F. Mendoza², and A. M. Gaines², ¹University of Illinois at Urbana-Champaign, The Maschhoffs, LLC, Carlyle, IL

10:45 AM 196 **Assessing the Effects of Medium Chain Fatty Acids and Fat Sources on Pedv RNA Stability and Infectivity.**

R. A. Cochrane¹, S. S. Dritz¹, J. C. Woodworth¹, A. R. Huss¹, C. R. Stark¹, M. Saensukjaroenphon¹, J. M. DeRouchey¹, M. D. Tokach¹, R. D. Goodband¹, J. F. Bai¹, Q. Chen², J. Zhang², P. C. Gauger², R. J. Derscheid², R. G. Main², and C. K. Jones¹, ¹Kansas State University, Manhattan, ²Iowa State University, Ames

11:00 AM 197 **Estimation of Energy and Nutrient Composition of Food Waste from Different Sources as Potential Use in Swine Diets.**

L. Fung¹, G. C. Shurson¹, P. E. Urriola¹, and L. Baker², ¹University of Minnesota, Department of Animal Sciences, St. Paul, ²University of Minnesota, Department of Biosystems and Bioproducts Engineering, St. Paul

11:15 AM 198 **Growth and Performance of Finishing Pigs Fed Oat Screenings.**

P. J. Lammers¹ and M. S. Honeyman², ¹University of Wisconsin-Platteville, ²Iowa State University, Ames, IA

11:30 AM 199 **Effect of Tail-End Dehulling of Canola Meal on Apparent and Standardized Total Tract Digestibility of Phosphorus when Fed to Growing Pigs.**

G. A. Mejicanos³, J. W. Kim, and C. M. Nyachoti, University of Manitoba, Winnipeg, MB, Canada

Extension - Dairy Symposium The Optimization of the Nutrition of Transition Dairy Cows

Chair: Kamal Mjoun, Alltech

Sponsor:

1:45 PM - 4:40 PM

210/211

1:45 PM **Welcoming Remarks**

1:50 PM 57 **The Transition Period in Dairy Cattle, Physiology and Nutritional Consideration: An Overview .**

F. Cardoso³, University of Illinois at Urbana-Champaign, Department of Animal Sciences

2:25 PM 58 **Amino Acids for Transition Cows.**

C. G. Schwab³, Schwab Consulting, Boscobel, WI

3:00 PM 59 **Vitamin Supplementation Strategies for Transition Dairy Cows.**

G. Ferreira¹ and B. Weiss², ¹Virginia Polytechnic Institute and State University, Department of Dairy Science, Blacksburg, ²The Ohio State University, Wooster

3:35 PM 60 **New Insights into Calcium Intake in Transition Dairy Cattle.**

L. L. Hernandez³, University of Wisconsin-Madison, Department of Dairy Science

4:10 PM 61 **Young Scholar Presentation: Immuno-Metabolic Adaptations to Lactation in Pasture-Based Transition Dairy Cows can be Regulated by Prepartum Nutritional Strategies.**
M. Vailati Riboni¹, J. R. Roche², and J. J. Loo¹, ¹University of Illinois at Urbana-Champaign, ²DairyNZ, Hamilton, New Zealand

Breeding and Genetics Symposium Genomics of Reproduction

Chair: Jared E. Decker, University of Missouri

Sponsor:
1:45 PM - 4:45 PM
201

1:45 PM **Welcoming Remarks**

1:50 PM 25 **Identification of Variants Causing Early Embryonic Loss in Beef Cattle.**
J. F. Taylor¹, D. S. Brown¹, J. E. Decker¹, B. P. Kinghorn², M. D. MacNeil³, M. M. Rolf⁴, R. D. Schnabel¹, M. F. Smith¹, A. L. Van Eenennaam⁵, and D. J. Patterson¹, ¹University of Missouri, Columbia, ²University of New England, Armidale, Australia, ³Delta G, Miles City, MT, ⁴Kansas State University, Manhattan, ⁵University of California-Davis

2:30 PM 26 **Genetic Improvement of Sow Lifetime Productivity.**
G. A. Rohrer¹, A. J. Cross², C. A. Lents¹, J. R. Miles¹, D. J. Nonneman¹, and L. A. Rempel¹, ¹USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²South Dakota State University, Brookings

3:10 PM **Break**

3:25 PM 27 **The roles of age at puberty and energy restriction in sow reproductive longevity: a genomic perspective.**
Hiruni R. Wijesena¹, Clay A. Lents², Melanie D. Trenhaile - Grannemann¹, Jean-Jack Riethoven¹, Brittney N. Keel², Jennifer F. Thorson², Phillip S. Miller¹, Rodger K. Johnson¹, Matthew L. Spangler¹, Stephen D. Kachman¹, and Daniel C. Ciobanu^{1}, ¹University of Nebraska-Lincoln; ²USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*

4:05 PM 28 **Identification of Gene and Gene Sets Enriched for Heifer Conception Rate in US Holstein Heifers.**
E.M. Keuter¹, M. Neupane¹, J.N. Kiser¹, J.G. N. Moraes², J. Dalton³, G.W. Burns², T.E. Spencer², and H.L. Neibergs¹, ¹Washington State University, Department of Animal Science and Center for Reproductive Biology, Pullman, ²University of Missouri, Division of Animal Sciences, Columbia, ³University of Idaho, Department of Animal and Veterinary Sciences, Caldwell

Ruminant Nutrition Symposium Genetic, Dietary and Microbial Contribution to Feed Efficiency in Cattle

Chair: Kristin Hales, USDA-ARS, U.S. Meat Animal Research Center

Sponsor:
1:45 PM - 4:50 PM
205/206

1:45 PM **Welcoming Remarks**

1:50 PM 331 **The Genetic Improvement of Feed Efficiency in Beef Cattle.**
J. F. Taylor¹, J. E. Beever², J. E. Decker¹, H. C. Freely³, D. J. Garrick⁴, S. L. Hansen⁴, K. A. Johnson⁵, M. S. Kerley¹, D. D. Loy⁴, H. L. Neibergs⁵, M. Saatchi⁶, R. D. Schnabel¹, C. M. Seabury⁷, D. W. Shike², M. L. Spangler⁸, and R. L. Weaber⁹, ¹University of Missouri, Columbia, ²University of Illinois at Urbana-Champaign, ³USDA-ARS, U.S. Meat

Animal Research Center, Clay Center, NE, ⁴Iowa State University, Ames, ⁵Washington State University, Pullman, ⁶American Simmental Association, Bozeman, MT, ⁷Texas A&M University, College of Veterinary Medicine, College Station, ⁸University of Nebraska-Lincoln, ⁹Kansas State University, Manhattan

2:35 PM 332 **Challenges in Measuring Feed Efficiency.**
H. C. Freetly , K. Hales, W. M. Snelling, R. M. Thallman, and L. A. Kuehn, USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*

3:20 PM 333 **Impact of Diet Type on Repeatability of Feed Efficiency in Beef Cattle.**
*S. L. Hansen*¹, M. S. Kerley², and J. R. Russell¹, ¹Iowa State University, Ames, ²University of Missouri, Columbia*

4:05 PM 334 **Host Specificity of the Rumen Microbial Community and Its Relationship to Feed Efficiency.**
P. J. Weimer , USDA-ARS, Madison, WI*

Animal Behavior, Housing and Well-Being Symposium Finding Effective Ways to Manage Pain in Livestock

Chair: Yolande Seddon, Western College of Veterinary Medicine

Sponsor:
1:45 PM - 4:45 PM
202

1:45 PM **Welcoming Remarks**

1:50 PM 1 **Why Does Pain in Livestock Matter? A Philosophical View of Pain Management.**
A. Shriver , University of Pennsylvania, Philadelphia*

2:25 PM 2 **Pharmacological Approaches to Pain Management in Cattle.**
H. Coetzee , Kansas State University, Manhattan*

3:00 PM 3 **Pigs in Pain – Causes, Mechanisms and Possibilities for Future Development.**
*M. S. Herskin*¹ and P. Di Giminiani², ¹Aarhus University, Tjele, Denmark, ²Newcastle University, Newcastle, United Kingdom*

3:35 PM 4 **Lessons Learned from Pain Management Research in Dairy Cattle.**
T. F. Duffield , University of Guelph, ON, Canada*

4:10 PM 5 **Pain Management in Livestock: Understanding the Views of Producers and Veterinarians.**
*K. Rutherford*¹, C. Thompson¹, and S. Ison², ¹Scotland's Rural College, Edinburgh, United Kingdom, ²Michigan State University, East Lansing*

Billy Day Symposium Batch Farrowing: Reasons, Limitations and Reproductive Management

Chair: Timothy J. Safranski, University of Missouri

Sponsor:
1:45 PM - 5:10 PM
205/206

1:45 PM **Welcoming Remarks**

1:50 PM 20 **Batch Farrowing as a Health Strategy in Modern Pork Production Systems.**
*D. A. Baumert**, *JBS Live Pork Production, Marshall, MO*

2:30 PM 21 **Gilt Management Using Matrix.**
*K. F. Greiner**, *Merck Animal Health, Carthage, IL*

3:10 PM 22 **Using Controlled Ovulation to Keep Sow Groups Together.**
*S. L. Terlouw**¹ and *M. E. Johnston**², ¹*JBS United Animal Health, Sheridan, IN*, ²*JBS United, Inc., Sheridan, IN*

3:40 PM 23 **Batch Farrowing: Labor, Pig Flow and Other Things to Consider.**
*R. Schmitt**, *Seaboard Foods, Guymon, OK*

4:10 PM 24 **The Impact of Batch Farrowing Systems on Managing Boar Stud Operations.**
*A. M. Minton**, *R. L. Bowman*, and *K. L. Van Dyke*, *The Maschhoffs, LLC., Carlyle, IL*

4:40 PM **Panel Discussion**

Growth, Development, Muscle Biology and Meat Science

Chair: Justin Rickard, Illinois State University

Sponsor:

1:45 PM - 4:45 PM

212

1:45 PM 133 **Young Scholar Presentation: Metabolic Modifiers in Beef Cattle: Current Application and Future Considerations.**
*B. M. Bohrer**^{1,2}, *A. C. Dilger*¹, and *D. D. Boler*¹, ¹*University of Illinois at Urbana-Champaign*, ²*University of Guelph, ON, Canada*

2:15 PM 134 **Growth Performance, Carcass Characteristics and Shelf-Life of Loin Chops of Finishing Pigs Fed Peroxidized Soybean Oil.**
*M. F. Overholt**¹, *G. D. Kim*^{1,2}, *S. C. Lindblom*³, *B. J. Kerr*⁴, *D. D. Boler*¹, and *A. C. Dilger*¹, ¹*University of Illinois at Urbana-Champaign*, ²*Gyeongsang National University, Institute of Agriculture & Life Science, Jinju, Korea*, *The Republic of*, ³*Iowa State University, Ames*, ⁴*USDA-ARS, Ames*

2:30 PM 135 **Effect of Hot Carcass Weight on Fresh Loin, Ham and Belly Quality from Pigs Sourced from a Commercial Processing Facility.**
*B. N. Harsh**¹, *E. K. Arkfeld*¹, *D. A. Mohrhauser*², *D. A. King*³, *T. L. Wheeler*³, *A. C. Dilger*¹, *S. D. Shackelford*³, and *D. D. Boler*¹, ¹*University of Illinois at Urbana-Champaign*, ²*Smithfield Foods, Denison, IA*, ³*USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*

2:45 PM 136 **Downregulated Myostatin Signaling Does Not Enhance Protein Kinase B/Akt Phosphorylation in Skeletal Muscle of Low Birthweight Neonatal Pigs.**
*Y. Chen**, *S. R. McCauley*, *R. P. Rhoads*, and *S. W. El-Kadi*, *Virginia Polytechnic Institute and State University, Blacksburg*

3:00 PM 137 **Fresh Belly Characteristics and Commercial Bacon Slicing Yield in Growing-Finishing Pigs Fed an Antibiotic-Free Diet or a Diet Supplemented with a Natural Antimicrobial.**
*J. E. Lowell**, *B. M. Bohrer*, *K. B. Wilson*, *M. F. Overholt*, *B. N. Harsh*, *H. H. Stein*, *A. C. Dilger*, and *D. D. Boler*, *University of Illinois at Urbana-Champaign*

3:15 PM **Break**

3:30 PM 85 **Assessment of Growth and Health Performance of Pigs Born from Magnetically Nanopurified Boar Spermatozoa.**
*C. L. Durfey**¹, *S. F. Liao*¹, *D. D. Burnett*¹, *M. A. Crenshaw*¹, *C. S. Steadman*¹, *S. T. Willard*¹, *P. L. Ryan*¹, *H. Clemente*²,

and J. M. Feungang¹, ¹Mississippi State University, Department of Animal and Dairy Sciences, Mississippi State,
²Clemente Associates, Madison, CT

3:45 PM 382 **Relationship of Proteolysis and Superoxide Dismutase Activity to Tenderness of Prime and Select Grade Beef.**

N. J. Herrera^{*1}, E. K. Kunze¹, K. Domenech-Pérez¹, F. A. Ribeiro¹, M. D. Chao², and C. R. Calkins¹, ¹University of Nebraska-Lincoln, ²California State University, Chico

4:00 PM 138 **Young Scholar Presentation: Effects of Feeding Antioxidants to Steers Fed Microalgae (Aurantiochytrium limacinum CCAP 4087/2) on Color Stability and Palatability of Longissimus Lumborum Steaks.**

K. J. Phelps^{*1}, J. S. Drouillard¹, K. A. Jacques², T. G. O'Quinn¹, and J. M. Gonzalez¹, ¹Kansas State University, Manhattan, ²Alltech Inc., Nicholasville, KY

4:30 PM 90 **Effect of Essential Oils or Tylosin on Performance, Liver Abscesses, Carcass Characteristics and Meat Quality in Feedlot Steers.**

J. R. Pukrop^{*1}, B. T. Campbell², and J. P. Schoonmaker¹, ¹Purdue University, West Lafayette, IN ²DSM Nutritional Products, LLC., Parsippany, NJ

Physiology I: General

Chair: Allison M. Meyer, University of Missouri

Sponsor:

1:45 PM - 4:30 PM

207

1:45 PM 312 **Young Scholar Presentation: Effective Use of Sexed Ultra Sex-Sorted Semen for Timed Artificial Insemination of Beef Heifers.**

J. M. Thomas^{*1}, J. W. C. Locke¹, R. Vishwanath², J. B. Hall³, M. R. Ellersieck¹, M. F. Smith¹, and D. J. Patterson¹, ¹University of Missouri, Columbia, ²Sexing Technologies Inc., DeForest, WI, ³University of Idaho, Department of Animal & Veterinary Sciences, Moscow

2:15 PM 313 **The Use of Testicular FINE Needle Aspiration, Histology and Immunohistochemistry for Sertoli and GERM CELL Determination in Peri-Pubertal Bulls.**

N. Negrin Pereira^{*}, North Dakota State University, Fargo

2:30 PM 314 **Physiological Adaptations in the GI Tract Detected by a Fecal RNA Method and Blood Inflammatory Biomarkers in Neonatal Dairy Calves Undergoing a Mild Diarrhea.**

F. Rosa^{*1}, S. Busato², C. Avaroma², K. Linville³, E. Trevisi⁴, M. Bionaz¹, and J. S. Osorio⁵, ¹Oregon State University, Department of Animal and Rangeland Sciences, Corvallis, ²Escuela Agrícola Panamericana El Zamorano, El Zamorano, Honduras, ³South Dakota State University, Dairy and Food Science Department, Brookings, ⁴Università Cattolica del Sacro Cuore, Piacenza, Italy, ⁵South Dakota State University, Brookings

2:45 PM 315 **Immunomodulation in Heifers Fed Endophyte-Infected Tall Fescue Seed.**

A. W. Altman^{*1}, A. A. Adams², K. R. McLeod¹, and E. S. Vanzant¹, ¹University of Kentucky, Lexington, ²University of Kentucky, The Gluck Equine Research Center, Lexington

3:00 PM **Break**

3:15 PM 316 **Comparison of Two Alternate Prostaglandin F2 α Products in Yearling Beef Heifers.**

A. C. Lansford^{*}, T. L. Meyer, and R. N. Funston, University of Nebraska, West Central Research and Extension Center, North Platte

3:30 PM 317 **Investigation of Ovarian Reserve Parameters in Bos Indicus Cows.**

A. L. Patterson^{*1}, J. Beard², M. C. Herrington³, S. L. Rosasco³, E. M. Soares⁴, E. J. Northrop⁵, E. L. Larimore⁶, J. J. J. Rich⁵, O. L. Amundson⁶, A. K. McNeel¹, C. C. Chase, Jr.¹, G. A. Perry⁵, A. F. Summers³, and R. A. Cushman¹, ¹USDA-

ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²New Mexico State University, Las Cruces, ³New Mexico State University, Animal and Range Science Department, Las Cruces, ⁴Federal University of Santa Maria, Santa Maria, Brazil, ⁵South Dakota State University, Department of Animal Science, Brookings, ⁶South Dakota State University, Brookings

3:45 PM 318 **Impact of Dietary Fatty Acid Source on Ovarian Phosphatidylinositol-3 Kinase Signaling.**

K. L. Bidne, J. Lyte, J. H. Hollis, N. K. Gabler, and A. F. Keating, Iowa State University, Ames*

4:00 PM 390 **Effects of Post-Insemination Dam Nutrition on Longevity and Calf Performance.**

C. L. Mogck, J. A. Walker, and G. A. Perry, South Dakota State University, Department of Animal Science, Brookings*

4:15 PM 92 **Influence of GnRH Supplementation at CIDR Removal on Estrus Expression and Interval to Estrus in Beef Cattle.**

J. J. J. Rich, E. J. Northrop, E. L. Larimore, and G. A. Perry, Department of Animal Science, South Dakota State University, Brookings*

Nonruminant Nutrition III: Nursery Pig I

Chair: Victor Perez, ADM Alliance Nutrition, Inc.

Sponsor:

1:45 PM - 4:45 PM

213

1:45 PM 222 **Effects of Dietary Salt Concentration on Performance of 7 to 10 Kg Nursery Pigs.**

D. J. Shawk, M. M. Moniz, R. D. Goodband, J. M. DeRouchey, M. D. Tokach, J. C. Woodworth, S. S. Dritz, A. B. Clark, and H. E. Williams, Kansas State University, Manhattan*

2:00 PM 223 **Evaluation of Nursery Diet Complexity on Growth Performance and Carcass Traits of Pigs.**

A. Tekeste, H. Manu, P. Ren, D. Pangeni, B. Tostenson, X. Yang, and S. K. Baidoo, University of Minnesota, Southern Research and Outreach Center, Waseca*

2:15 PM 224 **Effects of Mixture of Organic Acids and Medium Chain Fatty Acids on Growth Performance, Diarrhea Incidence and Fecal Microbial Flora in Weaning Pigs Orally Challenged with Enterotoxigenic Escherichia coli K88.**

D. H. Nguyen, X. J. Lei, J. W. Park, D. H. Baek, and I. H. Kim, Dankook University, Department of Animal Resource and Science, Cheonan, The Republic of Korea*

2:30 PM 103 **Lipid Peroxidation Decreases Performance and Viability of Nursery Pigs.**

P. L. Chang¹, D. S. Rosero², C. E. Zier-Rush², S. Smith², J. N. Wood³, K. E. Lloyd³, R. D. Boyd², and E. van Heugten³, ¹North Carolina State University, Department of Animal Science, Raleigh, ²The Hanor Company, Inc., Franklin, KY, ³North Carolina State University, Raleigh

2:45 PM 225 **Effects of Feeding a Finishing Diet Blended with Different Phases of Nursery Diets on Growth Performance of Nursery Pigs.**

F. Wu¹, K. F. Coble², C. W. Hastad², J. M. DeRouchey¹, M. D. Tokach¹, S. S. Dritz¹, J. C. Woodworth¹, and R. D. Goodband¹, ¹Kansas State University, Manhattan, ²New Fashion Pork, Jackson, MN

3:00 PM 226 **Soluble Fiber Improved Growth Performance of Weaned Pigs Challenged with Enterotoxigenic Escherichia coli.**

Q. Li¹, C. L. Loving², N. K. Gabler¹, E. R. Burrough¹, and J. F. Patience¹, ¹Iowa State University, Ames, ²USDA National Animal Disease Center, Ames, IA

3:15 PM 227 **Compensatory Body Protein Gain in Newly Weaned Pigs.**

A. D. Totafurno, W. D. Mansilla, D. Wey, I. B. Mandell, and C. F. M. de Lange, University of Guelph, Department of Animal Biosciences, ON, Canada*

3:30 PM 228 **Supplemental Effects of Fermented Rice Bran Extracts on Gut Health and Growth of Nursery Pigs.**

*L. Zheng**, *M. E. Duarte*, *I. Park*, and *S. W. Kim*, North Carolina State University, Raleigh

3:45 PM 229 **Use of Wheat Gluten in Nursery Diets.**

*C. M. De Mille**, *M. J. Azain*, *C. R. Dove*, and *A. Yin*, University of Georgia, Athens

4:00 PM 230 **Effects of Dietary Standardized Ileal Digestible Ile:Lys Ratio on Growth Performance of 6 to 11 Kg Pigs.**

A. B. Clark¹, *M. D. Tokach¹*, *J. M. DeRouchey¹*, *S. S. Dritz¹*, *K. J. Touchette²*, *R. D. Goodband¹*, and *J. C. Woodworth¹*, ¹Kansas State University, Manhattan, ²Ajinomoto Heartland, Inc., Chicago, IL

4:15 PM 231 **Effects of Replacing an Enzymatically Modified Soybean Meal (HP300) with a Corn/Yeast Protein By-Product (Gold Pro) on Performance and Health Status of Nursery Pigs.**

*F. B. Sandberg**, *S. J. England*, *T. M. Fakler*, *K. T. Soltwedel*, and *M. R. Bible*, Furst McNess Company, Freeport, IL

4:30 PM 232 **Effect of a New 6-Phytase, Natuphos E on Piglet Performance, Ileal Digestibility and Bone Mineralization.**

D. Torrallardona¹, *M. Coelho²*, and *P. Ader³*, ¹Institute for Food and Agricultural Research and Technology, Monogastric Nutrition, Constanti, Spain, ²BASF, Humble, TX, ³BASF SE, Lampertheim, Germany

Nonruminant Nutrition IV: Gestation/Lactation

Chair: Luis Ochoa, Kemin Industries, Inc. and Amanda Graham, Carthage Innovative Swine Solutions, LLC.

Sponsor:

1:45 PM - 4:45 PM

214

1:45 PM 233 **Influence of Diet Contaminated with Deoxynivalenol (DON) on Lactating Sow and Litter Performance.**

*K. L. Herkelman**, *R. E. Hall*, and *Y. Martel-Kennes*, Cooperative Research Farms, Richmond, VA

2:00 PM 234 **The Effect of Dietary Protein for Lactating Sows on Sow Body Composition and Metabolism.**

C. F. Hansen¹, *T. S. Bruun²*, *A. H. Tauson¹*, and *A. V. Strathe^{2,3}*, ¹University of Copenhagen, Fredriksberg, Denmark, ²SEGES Pig Research Centre, Copenhagen V, Denmark, ³University of Copenhagen, Department of Large Animal Sciences, Copenhagen, Denmark

2:15 PM 235 **Increased Dietary Protein for Lactating Sows Improved Sow and Litter Performance.**

A. V. Strathe¹, *T. S. Bruun²*, *N. Geertsens³*, and *C. F. Hansen⁴*, ¹University of Copenhagen, Department of Large Animal Sciences, Copenhagen, Denmark, ²SEGES Pig Research Centre, Copenhagen V, Denmark, ³Danbred International, Copenhagen, Denmark, ⁴University of Copenhagen, Fredriksberg, Denmark

2:30 PM 236 **Got Colostrum? Effect of Diet and Feeding Level on Piglet Colostrum Intake and Piglet Quality.**

*C. Garrison**, *E. van Heugten*, *J. G. Wiegert*, and *M. T. Knauer*, North Carolina State University, Raleigh

2:45 PM 237 **Effect of Sow Lactation Crate Size on Litter Performance and Survivability.**

L. L. Thomas¹, *K. F. Coble²*, *C. W. Hastad²*, *M. D. Tokach¹*, *S. S. Dritz¹*, *R. D. Goodband¹*, *J. M. DeRouchey¹*, and *J. C. Woodworth¹*, ¹Kansas State University, Manhattan, ²New Fashion Pork, Jackson, MN

3:00 PM 238 **Feed Efficiency of Gestating Gilts and Sows Under Commercial Conditions.**

*L. L. Thomas**, *S. S. Dritz*, *M. D. Tokach*, *R. D. Goodband*, *J. C. Woodworth*, and *J. M. DeRouchey*, Kansas State University, Manhattan

3:15 PM 239 **Effect of Dietary Calcium Inclusion Rate in Diets for Lactating Sows.**
*A. Graham^{*1}, T. Hall¹, L. Ochoa¹, L. Greiner¹, M. A. D. Goncalves², U. A. D. Orlando², and J. Connor³, ¹Carthage Innovative Swine Solutions, LLC., Carthage, IL, ²Genus PIC, Hendersonville, TN, ³Carthage Veterinary Service, Ltd., Carthage, IL*

3:30 PM 240 **Threonine:Lysine Ratio Requirement in Lactating Sows.**
*L. Greiner^{*1}, A. Graham¹, K. J. Touchette², M. A. D. Goncalves³, U. A. D. Orlando³, and J. Connor⁴, ¹Carthage Innovative Swine Solutions, LLC, Carthage, IL, ²Ajinomoto Heartland, Inc., Chicago, IL, ³Genus PIC, Hendersonville, TN, ⁴Carthage Veterinary Service, Ltd., Carthage, IL*

3:45 PM 241 **Impact of Feeding Reduced Dietary Crude Protein Diets with Crystalline Amino Acid Supplementation in Late Gestation on Nitrogen Balance of Sows.**
*N. Regmi^{*1}, J. Babcock¹, D. Chamberlin¹, K. J. Touchette², J. L. De Vries¹, S. Zhang¹, and N. L. Trotter¹, ¹Michigan State University, East Lansing, ²Ajinomoto Heartland, Inc., Chicago, IL*

4:00 PM 242 **Effect of Late Gestation Diet and Feeding Level on Changes in Sow Weight and Body Condition.**
C. Garrison^{}, E. van Heugten, J. G. Wiegert, and M. T. Knauer, North Carolina State University, Raleigh*

4:15 PM 243 **Young Scholar Presentation: Heat Stress Alleviation in Lactating Sows By Dietary Betaine Supplementation and Cooling Pads.**
*F. A. Cabezon^{*1}, A. P. Schinckel¹, K. R. Stewart¹, B. T. Richert¹, M. Gandarillas², J. N. Marchant-Forde³, J. S. Johnson³, W. A. Peralta⁴, and R. M. Stwalley⁵, ¹Purdue University, Department of Animal Sciences, West Lafayette, IN, ²Universidad Austral de Chile, Valdivia, Chile, ³USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN, ⁴Agrícola Super Ltda, Rancagua, Chile, ⁵ Purdue University, Department of Agricultural Biological Engineering, West Lafayette, IN*

Nonruminant Nutrition V: Enzymes

Chair: Elijah Kiarie, University of Guelph

Sponsor:

1:45 PM - 4:45 PM

216

1:45 PM 244 **Validation of the Extended Matrix Values for Energy and Amino Acids of a New Novel 6-Phytase, Natuphos E in Weaned Piglets.**
*D. Torrallardona¹, P. Ader², and M. Coelho^{*3}, ¹Institute for Food and Agricultural Research and Technology, Monogastric Nutrition, Constanti, Spain, ²BASF SE, Lampertheim, Germany, ³BASF, Humble, TX*

2:00 PM 245 **Evaluating the Effect of Superdosing Natuphos E 5,000 G Phytase on Nursery Pig Performance.**
K. M. Gourley^{}, J. C. Woodworth, J. M. DeRouchey, M. D. Tokach, S. S. Dritz, and R. D. Goodband, Kansas State University, Manhattan*

2:15 PM 246 **Super Dosing Effects of Corn-Expressed Phytase on Bone Characteristics and Nutrient Digestibility in Nursery Pigs Fed Diets Sufficient in Phosphorus and Calcium.**
J. K. Lee^{}, H. Chen, I. Park, and S. W. Kim, North Carolina State University, Raleigh*

2:30 PM 247 **Effects of Feeding Corn-Expressed Phytase on the Live Performance, Bone Characteristics and Phosphorus Digestibility of Nursery Pigs.**
J. N. Broomhead¹, P. A. Lessard¹, R. M. Raab¹, M. B. Lanahan¹, and J. J. Chewning², ¹Agrivida, Medford, MA, ²Swine Research Services, Inc., Springdale, AR

2:45 PM 248 **Improvement of Ileal Digestibility of DM and Gross Energy by Commercial Carbohydrases is Associated with Depression of Fermentability in an in-Vitro Digestibility Determination System.**

Z. K. Zeng*, J. Zhu, C. Chen, P. E. Urriola, and G. C. Shurson, University of Minnesota, Department of Animal Sciences, St. Paul

3:00 PM **Break**

3:15 PM 249 **Effects of Adding Multi-Enzymes to Growing Pig Diets Containing Wheat and Corn Fiber Sources on Growth Performance, Nutrient Digestibility, and Digesta Viscosity.**
Z. K. Zeng*, G. C. Shurson, C. Chen, and P. E. Urriola, University of Minnesota, Department of Animal Sciences, St. Paul

3:30 PM 250 **Effect of Protease and α -Galactosidase Supplementation to Field Bean (*Vicia faba*) Based Diets on Growth and Carcass Traits of Grow-Finisher Pigs.**
A. Torres-Pitarch^{1,2}, E. G. Manzanilla², G. E. Gardiner³, D. Torrallardona⁴, J. V. O'Doherty¹, and P. G. Lawlor²,
¹University College Dublin, School of Agriculture and Food Science, University College Dublin, Belfield, Dublin, Ireland, ²Teagasc Moorepark Grassland Research and Innovation Centre, Pig Development, Fermoy, Co. Cork, Ireland, ³Waterford Institute of Technology, Department of Science, Waterford, Ireland, ⁴Institute for Food and Agricultural Research and Technology, Monogastric Nutrition, Constanti, Spain

3:45 PM 251 **Beta-Mannanase Supplementation Effects on Nursery Pig Growth Performance, Feed Efficiency and Serum Acute Phase Protein Concentrations.**
N. F. Huntley*, S. A. Gould, and J. F. Patience, Iowa State University, Ames

4:00 PM 252 **An in-Vitro Evaluation of the Effects of a Protease and a Bacillus Spp. Direct-Fed Microbial, Alone or in Combination, on the Microstructure and Protein Solubilisation of a Variety of Feed Ingredients Fed to Grower Pigs.**
L. Payling^{*1}, S. Arent², and M. C. Walsh¹, ¹Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, UK, United Kingdom, ²Dupont, Industrial Biosciences, Brabrand, Denmark

4:15 PM 253 **Porcine in-Vitro Degradation and Fermentation Characteristics of Canola Co-Products without or with Fiber-Degrading Enzymes.**
J. W. Lee^{*1}, R. Patterson², and T. A. Woyengo¹, ¹South Dakota State University, Brookings, ²Canadian Biosystems, Calgary, AB, Canada

4:30 PM 254 **Effects of Supplementation with a Protease, Carbohydrases, and Phytase in Reduced Nutrient Diets Fed from Weaning to Market on Growth Performance, Nutrients Digestibility, Intestinal Morphology and Hematological Characteristics.**
T. C. Tsai^{*1}, H. Kim², X. Wang¹, J. J. Chewning³, J. A. Apple¹, J. R. Bergstrom⁴, and C. V. Maxwell¹, ¹University of Arkansas, Division of Agriculture, Department of Animal Science, Fayetteville, ²University of Arkansas, Fayetteville, ³Swine Research Services, Inc., Springdale, AR, ⁴DSM Nutritional Products, Parsippany, NJ

Wednesday, March 15, 2017

Harlan Ritchie Symposium

Chair: Carl R. Dahlen, Department of Animal Sciences, North Dakota State University

Sponsor:
8:30 AM - 11:40 AM
205/206

8:30 AM **Tribute.**

8:40 AM 139 **Beef Cattle Type and Selection Tools Have Evolved to Meet Consumer Demands and Maximize Producer Profitability.**
D. W. Shike*, University of Illinois at Urbana-Champaign

9:25 AM 140 **Factors Contributing to Increased Quality Grade of U.S. Fed Cattle.**
P. S. Dykstra and W. J. Sexten, Certified Angus Beef, LLC, Wooster, OH*

10:10 AM 141 **Where Are We Going As Cattle Get Bigger?**
*K. W. Bruns*¹, R. H. Pritchard², J. C. MacDonald³, R. G. Bondurant³, and R. N. Funston⁴, ¹University of Nebraska-Lincoln, West Central Research and Extension Center, North Platte, ²South Dakota State University, Brookings, ³University of Nebraska-Lincoln, ⁴University of Nebraska, North Platte*

10:55 AM 142 **Beef Yield Grading: History, Issues and Opportunities.**
T. E. Lawrence, West Texas A&M University, Canyon*

Animal Behavior, Housing and Well-Being

Chair: Jennifer Brown, Prairie Swine Center

Sponsor:

8:30 AM - 11:30 AM
202

8:30 AM 11 **Effects of Floor Cooling on Late Lactation Sows Under Acute Heat Stress.**
*F. A. Cabezon*¹, A. P. Schinckel¹, J. N. Marchant-Forde², J. S. Johnson², and R. M. Stwalley³, ¹Purdue University, Department of Animal Sciences, West Lafayette, IN, ²USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN, ³Purdue University, Department of Agricultural Biological Engineering, West Lafayette, IN*

8:45 AM 12 **Design and Feasibility of a Novel Sprinkler Control Algorithm for Swine Heat Stress Alleviation.**
B. C. Ramirez, S. J. Hoff, and J. D. Harmon, Iowa State University, Agricultural and Biosystems Engineering, Ames*

9:00 AM 13 **Evaluating the Health and Productivity of Weaned Piglets after Simulated Transport and Heat Stress When Antibiotics are Eliminated from the Diet.**
J. S. Johnson and D. C. Lay Jr., USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN*

9:15 AM 14 **Dynamic Space Requirements of Lame and Non-Lame Sows Determined by the Lying-Standing Sequence.**
*J. M. Mumm*¹, J. D. Stock¹, K. J. Stalder¹, A. K. Johnson¹, A. Ramirez², S. Azarpajouh¹, and J. A. Calderon Diaz^{3,4}, ¹Iowa State University, Department of Animal Science, Ames, ²Iowa State University, Ames, Teagasc Moorepark Grassland Research and Innovation Centre, Pig Development, Fermoy, Co. Cork, Ireland, ⁴Polish Academy of Sciences, Institute of Genetics and Animal Breeding, Department of Animal Behaviour and Welfare, Jastrzębiec, Magdalenka, Poland*

9:30 AM 15 **Do Pigs Form Social Structures? An Application of Social Network Analysis.**
Y. Li¹, H. Zhang¹, L. J. Johnston¹, and W. Martin², ¹University of Minnesota, West Central Research and Outreach Center, Morris, ²University of Minnesota Extension, Saint Paul

9:45 AM **Break**

10:00 AM 16 **Changes in Scratches and Skin Elasticity in Cull Sows after Transport to the Abattoir.**
K. Thodberg, K. K. Fogsgaard, C. Gaillard, and M. S. Herskin, Aarhus University, Tjele, Denmark*

10:15 AM 17 **Bio-Pesticide Management of Pasture Flies in the Great Plains via a Push-Pull Strategy.**
*D. J. Boxler*¹, G. J. Brewer², J. Zhu², and R. N. Funston³, ¹University of Nebraska-Lincoln, West Central Research and Extension Center, North Platte, ²University of Nebraska-Lincoln, ³University of Nebraska, North Platte*

10:30 AM 18 **Salivary Cortisol Concentrations of Group-Housed Gestating Sows: Individual vs. Group Samples.**

Y. Li¹, S. Cui¹, X. Yang², B. A. Crooker³, S. K. Baidoo², and L. J. Johnston¹, ¹University of Minnesota, West Central Research and Outreach Center, Morris, ²University of Minnesota, Southern Research and Outreach Center, Waseca, ³University of Minnesota, Department of Animal Sciences, Saint Paul

10:45 AM 19 **The Use of Prepartal Standing Behavior as a Parameter for Early Detection of Subclinical Ketosis in Postpartal Dairy Cows.**

S. Rodriguez-Jimenez^{*1}, K. J. Haerr², J. J. Loor², J. S. Osorio³, and F. C. Cardoso², ¹South Dakota State University, Brookings, ²University of Illinois at Urbana-Champaign, ³South Dakota State University, Dairy and Food Science Department, Brookings

11:00 AM 97 **The Effect of Isoflurane and Meloxicam on Behaviour of Dairy Goat Kids Following Cautey Disbudding.**

M. N. Hempstead^{*1,2}, M. Stewart³, J. R. Waas², V. M. Cave¹, and M. A. Sutherland¹, ¹AgResearch, Hamilton, New Zealand, ²The University of Waikato, Hamilton, New Zealand, ³InterAg, Hamilton, New Zealand

11:15 AM 393 **A Commercially Available Activity Monitor Attached to the Ear Tag Detects Swine Oral-Nasal-Facial Behaviors.**

G. V. Hernandez^{*1}, R. Manjarin¹, Y. Luo², A. N. Schmitz², P. J. VandeVord³, E. M. Fievisohn³, and L. E. Hulbert², ¹California Polytechnic State University, San Luis Obispo, ²Kansas State University, Manhattan, ³Virginia Polytechnic Institute and State University, Blacksburg

Physiology II: Swine

Chair: Tiffany A. Wilmoth, Clemson University

Sponsor:

8:30 AM - 10:30 AM

207

8:30 AM 324 **Diurnal Ambient Temperature Variations in Warm Climate Regions Affect the Serum Concentrations of Free Amino Acids in Growing Pigs.**

A. Morales, N. Ibarra, S. Espinoza, F. Reyes, E. Avelar, R. L. Camacho, and M. Cervantes Ramirez^{*}, Universidad Autónoma de Baja California, Mexicali, Mexico

8:45 AM 325 **Effects of Zinc Amino Acid Complex on Biomarkers of Gut Integrity and Metabolism during Heat Stress and a Following Recovery Period in Growing Pigs.**

E. J. Mayorga^{*1}, S. K. Kvidera¹, E. A. Horst¹, M. A. Al-Qaisi¹, M. J. Dickson¹, J. T. Seibert¹, S. Lei¹, Z. J. Rambo², M. E. Wilson², and L. H. Baumgard¹, ¹Iowa State University, Ames, ²Zinpro Corporation, Eden Prairie, MN

9:00 AM 326 **Evaluation of a QTL for Porcine Circovirus Type 2b (PCV2) Viral Load on Long-Term Growth Performance and Nutrient Digestibility in Inoculated or Vaccinated Pigs for PCV2.**

D. M. van Sambeek^{*}, M. D. Trenhaile-Grannemann, P. S. Miller, and T. E. Burkey, University of Nebraska-Lincoln

9:15 AM 327 **A Humanized Gnotobiotic Piglet Model to Study Host-Microbiota Interactions.**

N. D. Aluthge^{*}, W. Tom, T. E. Burkey, P. S. Miller, D. E. Hostetler, K. D. Heath, C. Kreikemeier, and S. C. Fernando, University of Nebraska-Lincoln

9:30 AM **Break**

9:45AM 328 **Ex-Vivo Translocation of Escherichia coli (E. coli) F18 in Pig Ileum that was Challenged with Norepinephrine (NE) or Adrenocorticotrophic Hormone (ACTH) Compared with Controls.**

S. M. Curry^{*}, E. R. Burrough, and N. K. Gabler, Iowa State University, Ames

10:00 AM 329 **Characterizing the Effects of Acute and Chronic Heat Stress on Porcine Ovarian Function.**

M. J. Dickson^{*}, J. Nteeba, K. L. Bidne, B. J. Hale, C. L. Hager, S. K. Kvidera, J. T. Seibert, L. H. Baumgard, J. W. Ross, and A. F. Keating, Iowa State University, Ames

10:15 AM 330 **Impact of Lawsonia Intracellularis-Mycoplasma Hyopneumoniae Dual Challenge on Growth Performance of Pigs Divergently Selected for Residual Feed Intake.**
E. Helm¹, A. C. Outhouse¹, K. Schwartz¹, J. C. M. Dekkers², S. M. Lonergan¹, and N. K. Gabler¹, ¹Iowa State University, Ames, ²Iowa State University, Department of Animal Science, Ames

Nonruminant Nutrition VI: Grow/Finish Management and Nutrition

Chair: Pedro E. Urriola, University of Minnesota

Sponsor:

8:30 AM - 11:30 AM

214

8:30 AM 272 **The Effects of in-Utero Heat Stress on Fasting Heat Production in Growing Pigs.**
N. M. Chapel¹, C. J. Byrd¹, D. W. Lugar¹, K. R. Stewart², M. C. Lucy³, T. J. Safranski³, L. H. Baumgard⁴, and J. S. Johnson⁵, ¹Purdue University, West Lafayette, IN, ²Purdue University, Department of Animal Sciences, West Lafayette, IN, ³University of Missouri, Columbia, ⁴Iowa State University, Ames, ⁵USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN

8:45 AM 273 **Standardized Ileal Digestible Lysine Requirements for Finishing PIC Pigs Under Commercial Conditions: A Meta-Analysis.**
M. Goncalves, U. Orlando, W. Cast¹, and M. Culbertson, Genus PIC, Hendersonville, TN

9:00 AM 274 **Effects of Various Dietary n-6:n-3 PUFA Ratios on Growth Performance, Carcass Traits, Blood Lipid Profiles and Meat Quality in Finishing Pigs.**
W. C. Liu¹, T. S. Li, J. Yin, H. M. Yun, and I. H. Kim, Dankook University, Department of Animal Resource and Science, Cheonan, The Republic of Korea

9:15 AM 275 **Effects of Kemtrace Cr Level and Feeding Regimen on Finishing Pig Growth Performance and Carcass Characteristics.**
J. T. Gebhardt¹, H. S. Cemin¹, J. C. Woodworth¹, M. D. Tokach¹, S. S. Dritz¹, J. M. DeRouchey¹, J. A. Loughmiller², and R. D. Goodband¹, ¹Kansas State University, Manhattan, ²Kemin Industries, Des Moines, IA

9:30 AM 276 **Evaluation of Standardized Ileal Digestible Tryptophan: Lysine Ratio with and without Ractopamine HCl on Growth Performance and Carcass Characteristics of Finishing Pigs.**
J. A. Soto¹, M. D. Tokach¹, K. J. Touchette², S. S. Dritz¹, J. C. Woodworth¹, J. M. DeRouchey¹, and R. D. Goodband¹, ¹Kansas State University, Manhattan, ²Ajinomoto Heartland, Inc., Chicago, IL

9:45 AM 277 **Effects of Dietary Electrolyte Balance and Crude Protein on Growth Performance and Carcass Characteristics of Finishing Pigs from 110 to 130 Kg.**
J. A. Soto¹, M. D. Tokach, S. S. Dritz, J. C. Woodworth, J. M. DeRouchey, and R. D. Goodband, Kansas State University, Manhattan

10:00 AM 278 **Does Chemical Composition of Dietary Fat Sources Alter mRNA Abundance of Genes Related to Lipid Digestion and Metabolism in Pigs?**
T. A. Kellner¹ and J. F. Patience, Iowa State University, Ames

10:15 AM 279 **Pigs Receiving Daily Tailored Diets Have Different Amino Acid Requirements than Pigs Raised in Conventional Phase Feeding Systems.**
A. Remus^{1,2,3}, M. P. Létourneau Montminy¹, L. Hauschild³, and C. Pomar², ¹Université Laval, Département des Sciences Animales, Québec, QC, Canada, ²Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ³Universidade Estadual Paulista, Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, Brazil

10:30 AM 280 **Evaluation of Sid Lys:ME Ratios in Grow-Finishing Pigs.**
L. Ochoa¹, A. Graham¹, B. Knopf¹, L. Greiner¹, and J. Connor², ¹Carthage Innovative Swine Solutions, LLC., Carthage, IL, ²Carthage Veterinary Service, Ltd., Carthage, IL

10:45 AM 281 **Impact of Grow-Finish Performance and Carcass Characteristics in Response to an Increased Apparent Health Challenge.**

A. S. Cornelison¹, N. H. Williams², B. Haber², M. A. Berhow³, L. A. Karriker¹, J. Less⁴, and J. F. Patience¹, ¹Iowa State University, Ames, ²Iowa Select Farms, Iowa Falls, ³USDA-ARS, National Center for Agricultural Utilization Research, Peoria, IL, ⁴ADM Animal Nutrition, Decatur, IL

11:00 AM 282 **Effects of High Neutral Detergent Fiber Diets on the N-balance Of Pigs Fed Thr-
limited Diets.**

*J. K. Mathai^{*1}, H. L. Spangler¹, H. H. Stein¹, and K. J. Touchette¹, ¹University of Illinois at Urbana-Champaign, ²Ajinomoto Heartland, Inc., Chicago, IL*

11:15 AM 283 **Effect of Increasing Sid Trp:Lys Ratio on Growth Performance of Grower-Finisher
Pigs.**

*T. C. Tsai^{*1}, H. Kim², X. Wang¹, J. J. Chewning³, J. A. Apple¹, J. E. Thomson⁴, and C. V. Maxwell¹, ¹University of Arkansas, Division of Agriculture, Department of Animal Science, Fayetteville, ²University of Arkansas, Fayetteville, ³Swine Research Services, Inc., Springdale, AR, ⁴Evonik Degussa Corp, Kennesaw, GA*

Breeding and Genetics II

Chair: Jared E. Decker, University of Missouri

Sponsor:

8:30 AM - 11:00 AM

212

8:30 AM 39 **Young Scholar Presentation: Follicle Dynamics and Hormonal Environment in a
Novel High Fecundity Genotype in Cattle.**

*A. Garcia-Guerra^{*1,2}, B. W. Kirkpatrick¹, and M. C. Wiltbank¹, ¹Univeristy of Wisconsin-Madison, ²The Ohio State University, Columbus*

9:00 AM 40 **Impact of Blood Collection on Scoring Temperament in Angus-Based Weaned
Calves Is Negligible.**

*L. L. Hulsman Hanna^{*1}, J. K. Hieber¹, H. Yu¹, C. R. Dahlen¹, S. A. Wagner¹, and D. G. Riley², ¹North Dakota State University, Department of Animal Sciences, Fargo, ²Texas A&M University, Department of Animal Science, College Station*

9:15 AM 41 **Evaluation of Functional Variation in Candidate Genes for Pork Quality.**

*D. J. Nonneman^{*1}, G. A. Rohrer¹, T. S. Kalbfleisch², S. D. Shackelford¹, D. A. King¹, and T. L. Wheeler¹, ¹USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²Intrepid Bioinformatics, Louisville, KY*

9:30 AM 42 **Genome-Wide Association of Myoglobin Concentrations in Pork Loins.**

*A. J. Cross^{*1}, D. A. King², S. D. Shackelford², T. L. Wheeler², J. P. Cassady¹, D. J. Nonneman², and G. A. Rohrer², ¹South Dakota State University, Brookings, ²USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*

9:45 AM **Break**

10:00 AM 43 **Genetic parameters for age at puberty and associated traits in swine.**

G. M. See^{}, N. V. Serão, and M. T. Knauer, North Carolina State University, Raleigh*

10:15 AM 44 **Non-Random Distribution of Runs of Homozygosity Across the Genome of
Landrace X Large White Crossbreds.**

*L. Gomez-Raya^{1,2}, J. R. Dunkelberger^{*1}, J. K. Lunney³, R. R. Rowland⁴, W. M. Rauw^{1,2}, and J. C. M. Dekkers¹, ¹Iowa State University, Department of Animal Science, Ames, ²Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, Departamento de Mejora Genética Animal, Madrid, Spain, ³USDA-ARS, Beltsville Agricultural Research Center, Animal Parasitic Diseases Laboratory, Beltsville, MD ⁴Kansas State University, Department of Diagnostic Medicine/Pathobiology, Manhattan*

10:30 AM 45 **Selection for Age at Puberty in Swine: Correlated Boar Response.**
G. M. See, W. L. Flowers, and M. T. Knauer, North Carolina State University, Raleigh*

10:45 AM 104 **Genetic, Heterosis and Maternal Effects on Voluntary Water Consumption in Mice.**
M. T. Haag, K. D. Wells, and W. R. Lamberson, University of Missouri, Division of Animal Sciences, Columbia*

Nonruminant Nutrition VII: Feed Additives/Ingredients

Chair: Tofuko Woyengo, South Dakota State University and Ryan Samuel, Alltech

Sponsor:

8:30 AM - 12:00 AM

216

8:30 AM 284 **Young Scholar Presentation: The Impacts of Dietary Fat Source on Lipid Digestion, Absorption, Deposition and Metabolism in Grow-Finish Pigs.**
T. A. Kellner¹ and J. F. Patience², ¹Iowa State University, Ames, Iowa State University, Department of Animal Science, Ames, IA

9:00 AM 285 **Effects of Prebiotic or Organic Acid Supplementation on Growth Performance, Nutrient Digestibility and Plasma Cytokines of Weaned Pigs Housed Under Poor Sanitary Conditions.**
B. V. Le Thanh¹, J. K. Htoo², L. F. Wang³, and R. T. Zijlstra¹, ¹University of Alberta, Department of Agricultural, Food and Nutritional Science, Edmonton, AB, Canada, ²Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany, ³University of Alberta, Edmonton, AB, Canada

9:15 AM 286 **Effects of a Yeast-Based Feed Additive on Nursery Pig Performance .**
H. E. Williams¹, J. C. Woodworth¹, J. M. DeRouchey¹, S. S. Dritz¹, M. D. Tokach¹, R. E. Musser², and R. D. Goodband¹, ¹Kansas State University, Manhattan, ²NutriQuest, Mason City, IA

9:30 AM 287 **The Effects of Feeding Narasin (Skycis) on Late Finishing Pig Performance.**
M. T. Knauer¹ and R. A. Arentson², ¹North Carolina State University, Raleigh, ²Elanco Animal Health, Greenfield, IN

9:45 AM 288 **Effects of Aminogut and Diet Formulation Approach on Growth Performance in Nursery Pigs.**
M. A. D. Goncalves¹, M. B. Menegat², M. D. Tokach², S. S. Dritz², K. J. Touchette³, J. M. DeRouchey², J. C. Woodworth², and R. D. Goodband², ¹Genus PIC, Hendersonville, TN, ²Kansas State University, Manhattan, ³Ajinomoto Heartland, Inc., Chicago, IL

10:00 AM 289 **Effects of Mannan Oligosaccharides and Lactobacillus Mucosae on the Growth Performance and Immune Response of Weanling Pigs Challenged with Escherichia coli Lipopolysaccharides.**
Y. S. Li, M. D. Trenhaile, D. M. van Sambeek, K. C. Moore, S. M. Barnett, S. C. Fernando, T. E. Burkey, and P. S. Miller, University of Nebraska-Lincoln*

10:15 AM 290 **Effects of Mycotoxin Contaminated High Protein Distillers Dried Grains (HP-DDG) and Mycotoxin Mitigation Additive on Growth Performance and Plasma GLP-1 Concentration of Growing-Finishing Pigs.**
L. Fung, G. C. Shurson, P. E. Urriola, and M. Saqui-Salces, University of Minnesota, Department of Animal Science, Saint Paul*

10:30 AM 291 **Effects of a Multi-Strain Bacillus Spp. Direct-Fed Microbial (DFM) and Protease Combination at Different Doses on Apparent Ileal (AID) and Total Tract Digestibility (ATTD) of Nutrients in Growing Pigs Fed Corn-Soybean Meal-Based Diets: A Combined Analysis of Two Studies.**
M. C. Walsh¹, L. Payling¹, I. H. Kim², and H. H. Stein³, ¹Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, United Kingdom, ²Dankook University, Department of Animal Resource and Science, Cheonan, The Republic of Korea, ³University of Illinois at Urbana-Champaign

10:45 AM 82 **Growth Performance Responses of Growing Pigs When Fed Corn-Soybean Meal Diets with Corn DDGS Treated with Fiber Degrading Enzymes with or without Extended Steeping.**

*Y. Rho^{*1}, K. Moran², D. Wey¹, C. Zhu¹, M. C. Walsh³, E. Kiarie¹, E. van Heugten², and C. F. M. de Lange¹, ¹University of Guelph, Department of Animal Biosciences, ON, Canada, ²North Carolina State University, Raleigh, ³Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, United Kingdom*

11:00 AM 292 **The Effect of Feeding Ambitine™ FA on Late Finishing Pig Performance.**
*S. A. Crowder^{*1}, T. L. Weeden¹, M. B. Lachmann Sevilla¹, B. De Rodas¹, and T. P. Karnezos², ¹Purina Animal Nutrition LLC., Shoreview, MN, ²PMI Nutritional Additives, Shoreview, MN*

11:15 AM 293 **Impact of a Direct-Fed Microbial at Three Inclusion Rates on Growth Performance in Growing and Finishing Pigs.**
*S. A. Weiland^{*1}, T. Waugh², and J. F. Patience¹, ¹Iowa State University, Ames, ²Kay Dee Feed Company, Sioux City, IA*

11:30 AM 93 **Influence of Ethanol Co-Products and Barley on Growth Performance and Carcass Characteristics of Growing-Finishing Pigs in Liquid or Dry Feeding Systems.**
B. Tostenson^{}, A. Tekeste, D. Pangen, H. Manu, P. Ren, X. Yang, and S. K. Baidoo, University of Minnesota, Southern Research and Outreach Center, Waseca*

11:45 AM 294 **Effect of Feeding Formaldehyde Treated Feed to Pigs Throughout the Growing Period on Amino Acid Utilization from Synthetic Lys or Protein Sources.**
*L. Ochoa^{*1}, R. J. Harrell², A. Graham¹, M. Bienhoff², B. Kremer³, J. A. Loughmiller³, and L. Greiner¹, ¹Carthage Innovative Swine Solutions, LLC., Carthage, IL, ²Professional Swine Management, Carthage, IL, ³Kemin Industries, Inc., Des Moines, IA*

Nonruminant Nutrition VIII: Nursery Pig II

Chair: William Oliver, USDA-ARS, U.S. Meat Animal Research Center

Sponsor:

8:30 AM - 11:30 AM
213

8:30 AM 295 **Effect of Lactose, Inulin, Lactobacillus Acidophilus Fermentation Product or Dietary Antibiotics on Nursery Pig Digestibility and Nitrogen Retention.**
*J. A. Acosta^{*1}, N. K. Gabler¹, J. W. Frank², B. E. Bass², and J. F. Patience¹, ¹Iowa State University, Ames, ²Diamond V, Cedar Rapids, IA*

8:45 AM 296 **Evaluation of a Bio-Processed Soybean Meal on Nursery Pig Performance and Immune Status.**
J. Koepke^{}, C. L. Levesque, W. R. Gibbons, M. Brown, and R. Kaushik, South Dakota State University, Brookings*

9:00 AM 397 **Super Dosing Effects of Corn-Expressed Phytase on Growth Performance, Bone Characteristics and Nutrient Digestibility in Nursery Pigs Fed Diets Deficient in Phosphorus and Calcium.**
J. K. Lee^{}, M. E. Duarte, and S. W. Kim, North Carolina State University, Raleigh*

9:15 AM 398 **Validation of Deuterium Oxide Method for Estimating Milk Intake by Piglets.**
*S. Zhang^{*1}, N. L. Trottier¹, and J. C. Marini², ¹Michigan State University, East Lansing, MI, ²USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX*

9:30 AM 399 **Evaluation of Dietary Electrolyte Balance on Nursery Pig Performance.**
A. M. Jones^{}, J. C. Woodworth, S. S. Dritz, M. D. Tokach, J. M. DeRouchey, and R. D. Goodband, Kansas State University, Manhattan*

9:45 AM 300 **Comparative Analysis of Bacterial Composition in the Ileum of Early Post-Weaned Piglets Fed Microbially Enhanced Soybean Meal and Fishmeal.**
*J. L. Ortman^{*1}, S. M. Sinn¹, B. St-Pierre², and C. L. Levesque¹, ¹South Dakota State University, Brookings, ²South Dakota State University, Animal Science Department, Brookings*

10:00 AM 301 **Evaluation of the Lysine Requirement of 11- to 23-Kg Nursery Pigs.**
*A. Graham^{*1}, B. Knopf¹, L. Greiner¹, M. A. D. Goncalves², U. A. D. Orlando², and J. Connor³, ¹Carthage Innovative Swine Solutions, LLC., Carthage, IL, ²Genus PIC, Hendersonville, TN, ³Carthage Veterinary Service, Ltd., Carthage, IL*

10:15 AM 302 **Evaluation of Elarom SES in Nursery Pig Diets with or without the Inclusion of High Zinc Oxide or Feed Antimicrobials .**
*H. E. Williams^{*1}, J. C. Woodworth¹, J. M. DeRouchey¹, S. S. Dritz¹, M. D. Tokach¹, K. Hogan², and S. R. Webster², ¹Kansas State University, Manhattan, ²Trouw Nutrition USA, LLC., Highland, IL*

10:30 AM 303 **Effect of Natural Feed Additives as Alternatives to in-Feed Antibiotics on the Performance of Nursery Pigs.**
*S. M. Mendoza^{*1}, G. R. Murugesan¹, E. Hendel¹, E. Kadas-Toth², and A. Kovacs², ¹Biomim America Inc., San Antonio, TX, ²Biomim Holding GmbH, Getzersdorf, Austria*

10:45 AM 304 **Effect of Particle Size of Soy Protein Concentrate on Amino Acid Digestibility and Concentration of Metabolizable Energy and Effects of Soy Protein Concentrate on Growth Performance of Weanling Pigs.**
*G. A. Casas^{*1,2}, C. Huang³, and H. H. Stein², ¹Universidad Nacional de Colombia, Bogota, Colombia, ²University of Illinois at Urbana-Champaign, ³Beijing TongLiXingKe Agriculture Science & Technology Co. Ltd, Beijing, China*

11:00 AM 305 **A Review and Evaluation of Antibiotic Alternatives in the Literature.**
*W. P. Schweer^{*1}, J. F. Patience¹, K. Schwartz¹, D. Linares¹, C. Rademacher¹, H. K. Allen², C. L. Loving², A. Ramirez¹, and N. K. Gabler¹, ¹Iowa State University, Ames, ²USDA National Animal Disease Center, Ames, IA*

11:15 AM 306 **Effect of Lactose, Inulin, Lactobacillus Acidophilus Fermentation Product or Dietary Antibiotics on Intestinal Function of Nursery Pigs.**
*J. A. Acosta^{*1}, N. K. Gabler¹, J. W. Frank², B. E. Bass², and J. F. Patience¹, ¹Iowa State University, Ames, ²Diamond V, Cedar Rapids, IA*

Ruminant Nutrition III: Dairy

Chair: Kristin Hales, USDA-ARS, U.S. Meat Animal Research Center

Sponsor:

8:30 AM - 11:30 AM

210/211

8:30 AM 372 **Young Scholar Presentation: Intestinal Barrier Function Involvement in Inefficient Nutrient Partitioning.**
S. K. Kvidera^{} and L. H. Baumgard, Iowa State University, Ames*

9:00 AM 373 **Young Scholar Presentation: Making Something Out of Nothing: The Potential of Calcium Hydroxide Treated Corn Stover for Dairy Cows.**
B. A. Casperson^{} and S. S. Donkin, Purdue University, West Lafayette, IN*

9:30 AM 374 **Growth Performance of Dairy Heifers Fed Carinata Meal.**
*K. Rodriguez-Hernandez^{*1,2} and J. L. Anderson¹, ¹South Dakota State University, Dairy Science Department, Brookings, ²CIRNOC-INIFAP, Matamoros, Mexico*

9:45 AM 375 **Young Scholar Presentation: Effects of Dietary Factors and Rumen pH on Rumen Biohydrogenation Pathways and Risk of Milk Fat Depression.**
Y. Sun^{}, M. Allen, and A. Lock, Michigan State University, East Lansing*

10:15 AM 376 **Young Scholar Presentation: Manipulating Early Lactation Energy and Protein Balances Using Canola Meal As a Protein Source.**
*S. A. E. Moore^{*1} and K. F. Kalscheur², ¹University of Wisconsin-Madison, ²USDA-ARS, U.S. Dairy Forage Research Center, Madison, WI*

10:45 AM 377 **In-Vitro Analysis of Rumen Microbial Fermentation at Different Temperatures.**
K. Linville, D. P. Casper, and J. S. Osorio, South Dakota State University, Dairy and Food Science Department, Brookings*

11:00 AM 378 **Young Scholar Presentation: Feeding Peripubertal Dairy Heifers Diets High in Distillers Grains with Varying Forage to Concentrate Ratios.**
*A. K. Manthey^{*1} and J. L. Anderson², ¹South Dakota State University, Dairy Science Department, Brookings, ²South Dakota State University, Brookings*

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