

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 81 **Overview of swine industry growth: Packing facilities and production facilities needed to support growth.**

*J. Kerns**, *Kerns and Associates, Ames, IA*

9:05 AM 82 **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 83 **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 84 **Technologies to Reduce the Reliance on Antibiotics.**

*C. Johnson**, *Carthage Veterinary Service, Carlyle, IL*

David Baker Symposium

Sponsor:
1:45 PM - 4:45 PM
Grand Ballroom South

1:45 PM 49 **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*

2:00 PM 50 **Use of Low Protein Diets for Weanling Pigs.**

*M. Nyachoti**, *University of Manitoba, Winnipeg, MB, Canada*

2:15 PM 51 **New Directions and Technologies in AA Research for Livestock .**

*P. J. Moughan**, *Riddet Institute, Massey University, Palmerston North, New Zealand*

2:30 PM 52 **Amino Acid Requirements of Sows Nursing 13 to 14 Piglets.**

*P. K. Theil**, *Aarhus University, Tjele, Denmark*

Graduate Student Oral Competition - MS I

Sponsor:

1:45 PM - 4:45 PM

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1:45 PM 85 **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. Wey¹, C. Zhu¹, M. C. Walsh³, E. Kiarie¹, E. van Heugten², and C. F. M. de Lange¹, ¹Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada, ²North Carolina State University, Raleigh, NC, ³Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, UK, United Kingdom

2:00 PM 86 **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, Ste-Anne De Bellevue, QC, Canada*

2:15 PM 87 **Effect of Diet Complexity and Multicarbohydase on Growth Performance and Intestinal Morphology in Wenaed Pigs.**
B. Koo¹, C. F. M. de Lange², and C. M. Nyachoti¹, ¹University of Manitoba, Winnipeg, MB, Canada, ²Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada

2:30 PM 88 **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. Feuang¹, ¹Mississippi State University Department of Animal and Dairy Sciences, Mississippi State, MS, ²Clemente Associates, Madison, CT

2:45 PM 89 **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, OH*

3:00 PM 90 **Determining the Phosphorus Release for Natuphos E 5,000 G Phytase for Nursery Pigs.**
K. M. Gourley^{}, J. C. Woodworth, J. M. DeRouche, M. D. Tokach, S. S. Dritz, and R. D. Goodband, Kansas State University, Manhattan, KS*

3:15 PM 91 **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, NE*

Graduate Student Oral Competition - PhD

Sponsor:

1:45 PM - 4:45 PM

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1:45 PM 100 **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

2:00 PM 101 **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, SD, ²South Dakota State University, Rapid City, SD, ³University of Nebraska, West Central Research and Extension Center, North Platte, NE, ⁴Texas Tech University, Lubbock, TX

J. P. Holen^{*1}, *Z. J. Rambo*², *A. M. Hilbrands*¹, and *L. J. Johnston*¹, ¹West Central Research and Outreach Center, University of Minnesota, Morris, MN, 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^{*1}, *F. A. Ireland*¹, and *D. W. Shike*², ¹University of Illinois, Urbana, IL, ²University of Illinois at Urbana-Champaign, Urbana, IL

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. Kunze*¹, *K. Domenech-Pérez*¹, *F. A. Ribeiro*¹, *M. D. Chao*², and *C. R. Calkins*¹, ¹University of Nebraska-Lincoln, Lincoln, NE, ²California State University-Chico, Chico, CA

2:45 PM 383 **Effect of Increasing Amount of Amaferm on Animal Performance in Receiving Feedlot Cattle.**

K. Nickles^{*1} and *A. Relling*², ¹The Ohio State University, Columbus, OH, ²Department of Animal Sciences, OSU, Wooster, OH

3:00 PM 384 **Influence of Seminal Additives on Sow Fertility .**

T. Brown^{*1}, *J. Ngula*², *B. Alegre*², *G. Hernandez*¹, *R. N. Kirkwood*³, *R. Manjarin*¹, and *J. C. D. de Tejerina*², ¹California Polytechnic State University, San Luis Obispo, CA, ²Department of Medicine, Surgery and Veterinary Anatomy, University of León, Leon, Spain, ³School of Animal and Veterinary Sciences, University of Adelaide, Roseworthy, Australia

3:15 PM 385 **Neonatal Pig Supplement Effects on Mortality..**

D. B. Scales^{*1} and *M. Schwartz*², ¹Michigan State University, East Lansing, MI, ²Swartz Farms Inc., Sleepy Eye, MN

3:30 PM 386 **Validation of Individual Computerized Sow Feeding Systems in Lactation.**

G. E. Nichols^{*1}, *K. M. Gourley*¹, *J. M. DeRouchey*¹, *J. C. Woodworth*¹, *S. S. Dritz*¹, *R. D. Goodband*¹, and *H. L. Frobose*², ¹Kansas State University, Manhattan, KS, ²Jyga Technologies Inc., Québec City, QC, Canada

3:45 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*, Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR

Undergraduate Student Oral Competition II

Sponsor:

1:45 PM - 4:45 PM

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1:45 PM 388 **Piglet Creching Decreases Protein Content in Colostrum .**

Y. A. Montano^{*1}, *R. Manjarin*¹, *K. Petrovski*², and *R. N. Kirkwood*², ¹California Polytechnic State University, San Luis Obispo, CA, ²School of Animal and Veterinary Sciences, University of Adelaide, 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. Zeng*¹, *G. C. Shurson*¹, *R. Ruan*², *C. Chen*¹, and *P. E. Urriola*³, ¹Department of Animal Sciences, University of Minnesota, St. Paul, MN, ²Department of Biosystems and Bioproducts Engineering, University of Minnesota, St. Paul, MN, ³Department of Animal Science, University of Minnesota, St. Paul, MN

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*, Department of Animal Science, South Dakota State University, Brookings, SD

- 2:30 PM 391 **The Impact of Oregano Essential Oil Supplementation over 2 Complete Reproductive Cycles in Multiparous Sows.**
M. Renken, B. C. Thaler, J. A. Clapper, and C. L. Levesque, South Dakota State University, Brookings, SD*
- 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, MO, ³University of Missouri - Department of Biomedical Sciences, Columbia, MO
- 3:00 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, CA, ²Kansas State University, Manhattan, KS, ³Virginia Polytechnic Institute and State University, Blacksburg, VA*
- 3:15 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. Caton³, ¹Department of Animal Sciences, North Dakota State University, Fargo, ND, ²Central Grasslands REC, North Dakota State University, Streeter, ND, ³Department of Animal Science, North Dakota State University, Fargo, ND*
- 3:30 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*
- 3:45 PM 396 **Dimensional Measurements and Visual Appraisal As Predictors of Liveweight of Finishing Pigs.**
S. Royal¹, J. A. Erceg, J. G. Wiegert, M. T. Knauer, and E. van Heugten, North Carolina State University, Raleigh, NC

Graduate Student Oral Competition - MS II

Sponsor:

1:45 PM - 4:45 PM

202

- 1:45 PM 92 **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, IL*
- 2:00 PM 93 **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 94 **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, TX, ²South Plains College, Lubbock, TX*
- 2:30 PM 95 **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, SD*
- 2:45 PM 96 **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. Pangeni, H. Manu, P. Ren, X. Yang, and S. K. Baidoo, Southern Research and Outreach Center, University of Minnesota, Waseca, MN

3:00 PM 97 **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, NC

3:15 PM 98 **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. Crouse¹, 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. Caton³, ¹Department of Animal Sciences, North Dakota State University, Fargo, ND, ²Central Grasslands REC, North Dakota State University, Streeter, ND, ³Department of Animal Science, North Dakota State University, Fargo, ND

3:30 PM 99 **Influence of Thermally Peroxidized Soybean Oil on Growth Performance and Oxidative Status in Growing Pigs.**

S. C. Lindblom*, N. K. Gabler¹, and B. J. Kerr², ¹Iowa State University, Ames, IA, 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 - 11:30 AM

205/206

8:30 AM **Welcoming Remarks.**

8:35 AM 310 **Precision Animal Breeding to Make Genetically Castrated Animals for Improved Animal Welfare and Alternative Breeding Applications .**

T. S. Sonstegard¹, S. C. Fahrenkrug², and D. Carlson³, ¹Recombinetics, Inc., St Paul, MN, ²Recombinetics, Inc, St Paul, MN, ³Recombinetics Inc, St. Paul, MN

9:05 AM 311 **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. White¹, A. T. Desaulniers¹, R. A. Cederberg¹, G. A. Mills¹, and C. A. Lents², ¹University of Nebraska-Lincoln, Lincoln, NE, ²USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE

9:35 AM 312 **MicroRNA and Extracellular Vesicle Mediated Cellular Communication within the Bovine Follicle. .**

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

10:05 AM 313 **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, RI

10:35 AM 314 **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, ¹Department of Animal Science, South Dakota State University, Brookings, SD, ²Department of Animal Science, Iowa State University, Ames, IA, ³USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE

Growth, Development, Muscle Biology, and Meat Science Symposium

Sponsor:
8:30 AM - 11:30 AM
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8:30 AM **Paul Ayers.**

8:45 AM 135 **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, KS*

9:00 AM **Brandon Fields.**

9:15 AM **Steve Larsen.**

Nonruminant Nutrition Symposium

Sponsor:
8:30 AM - 11:30 AM
203/204

8:30 AM 196 **What Are the Nutritional and Metabolic Costs of Immune System Activation in Pigs?.**
*N. K. Gabler**¹, *S. M. Curry*¹, *W. P. Schweer*¹, *S. M. Lonergan*¹, *K. Schwartz*¹, *E. R. Burrough*¹, and *C. L. Loving*², ¹*Iowa State University, Ames, IA*, ²*USDA National Animal Disease Center, Ames, IA*

9:00 AM 197 **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*, *Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada*

9:30 AM 198 **Immune System Stimulation Increases Nursery Pig Maintenance Energy Requirements.**
*N. F. Huntley**¹, *C. M. Nyachoti*², and *J. F. Patience*¹, ¹*Iowa State University, Ames, IA*, ²*University of Manitoba, Winnipeg, MB, Canada*

9:45 AM 199 **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, Urbana, IL*

10:00 AM 200 **Early Changes in the Human Microbiome Alter Immune Function and Immunologically Mediated Disorders.**
*J. Vanderhoof**, *Harvard Medical School, Boston, MA*

10:30 AM 201 **Immune System Stimulation (ISS) Alters the Protein Deposition (PD) and Increases Dietary Threonine Requirements of Growing Pigs .**
*W. S. McGilvray*¹, *C. F. M. de Lange*², *A. R. Pendleton*³, and *A. Rakhshandeh**¹, ¹*Texas Tech University, Lubbock, TX*, ²*Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada*, ³*South Plains College, Lubbock, TX*

10:45 AM 202 **Management of Clinical or Subclinical Immune Activation .**
*E. Merlot*¹, *A. Prunier*², and *N. Le Floch*³, ¹*INRA, Saint-Gilles, France*, ²*PEGASE, Agrocampus Ouest, INRA, Saint-Gilles, France*, ³*INRA-UMR SENAH, 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 - 11:30 AM
210/211

8:30 AM **Welcoming Remarks.**

8:32 AM 53 **Inflammation and Immune Activation during Periods of Stress in Dairy Cattle.**
M. Garcia and B. J. Bradford, Kansas State University, Manhattan, KS*

9:17 AM 54 **Potential Impact of Midwest Dairy Facility Design on Cow Time Budgets.**
J. P. Harner, Department of Biological and Agricultural Engineering, Kansas State University, Manhattan, KS*

10:02 AM 55 **Key Challenges to Dairy Cattle Production in the Midwest Environment: Forage Quality.**
D. K. Combs, University of Wisconsin, Madison, WI*

10:47 AM 56 **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 331 **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, NE*

8:45 AM 332 **Evaluation of 0 or 300 Mg of Optaflexx® on Growth Performance and Carcass Characteristics of Steers Fed to Different Degrees of Finish.**
R. M. Jones, C. J. Bittner¹, F. H. Hilscher¹, M. F. Wilken², and G. E. Erickson¹, ¹University of Nebraska, Lincoln, NE, ²Elanco Animal Health, Greenfield, IN*

9:00 AM 333 **The Evaluation of Brown Midrib Corn Silage Hybrids and Silage Inclusion for Finishing Beef Cattle.**
F. H. Hilscher, C. J. Bittner¹, J. N. Anderson², and G. E. Erickson¹, ¹University of Nebraska, Lincoln, NE, ²Dow AgroSciences, Mycogen Seeds, Indianapolis, IN*

9:15 AM 334 **The Evaluation of Brown Midrib Corn Silage Hybrids in Growing Diets Fed to Beef Steers.**
F. H. Hilscher, C. J. Bittner¹, J. N. Anderson², and G. E. Erickson¹, ¹University of Nebraska, Lincoln, NE, ²Dow AgroSciences, Mycogen Seeds, Indianapolis, IN*

9:30 AM 335 **Effect of Feeding Brown Midrib Corn Silage in Growing Diets for Beef Cattle on Nutrient Digestibility and Ruminal Fermentation Characteristics.**
F. H. Hilscher, M. J. Jolly-Briethaupt¹, J. L. Gramkow¹, M. M. Norman¹, J. N. Anderson², and G. E. Erickson¹, ¹University of Nebraska, Lincoln, NE, ²Dow AgroSciences, Mycogen Seeds, Indianapolis, IN*

9:45 AM 336 **Effects of Using Dried Distiller's Grains Plus Solubles in Post-Partum Diets of Beef Cows on Heifer Offspring Reproductive Performance.**
*E. G. Taylor^{*1}, R. P. Lemenager¹, and K. R. Stewart², ¹Purdue University, West Lafayette, IN, ²Department of Animal Sciences, Purdue University, West Lafayette, IN*

10:00 AM 337 **Evaluation of Corn Distillers Solubles on Finishing Steer Performance.**
B. Hansen^{}, University of Nebraska-Lincoln, Lincoln, NE*

10:15 AM 338 **Evaluation of Protein in Distillers Grains on Site and Extent of Digestion in Finishing Diets.**
*Z. E. Carlson^{*1}, J. L. Gramkow¹, H. C. Hamilton¹, M. J. Jolly-Breithaupt¹, M. K. Luebbe², G. E. Erickson¹, and J. C. MacDonald¹, ¹University of Nebraska, Lincoln, NE, ²University of Nebraska, Scottsbluff, NE*

10:30 AM 339 **Effect of Three Initial Implant Programs with a Common Terminal Revalor[®]-200 on Feedlot Performance and Carcass Traits of Weaned Steers.**
*C. R. Oney^{*1}, A. K. Watson¹, G. E. Erickson¹, M. N. Streeter², R. J. Cooper³, D. J. Jordon³, and B. D. Dicke⁴, ¹University of Nebraska, Lincoln, NE, ²Merck Animal Health, DeSoto, KS, ³Cattlemen's Nutrition Services, LLC, Lincoln, NE, ⁴Dicke Consultin, Lincoln, NE*

10:45 AM 340 **Impact of Corn Oil Removal from Modified Distillers Grains Plus Solubles and Supplemental Corn Oil on Finishing Cattle Performance.**
*J. E. Burhoop^{*1}, C. J. Bittner¹, F. H. Hilscher¹, M. K. Luebbe², J. C. MacDonald¹, and G. E. Erickson¹, ¹University of Nebraska, Lincoln, NE, ²University of Nebraska, Scottsbluff, NE*

11:00 AM 341 **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-Breithaupt², J. L. Gramkow¹, M. K. Luebbe³, J. C. MacDonald¹, and G. E. Erickson¹, ¹University of Nebraska, Lincoln, NE, ²University of Nebraska Lincoln, Lincoln, NE, ³University of Nebraska, Scottsbluff, NE*

11:15 AM 342 **Supplementing Varying Ratios of Modified Distillers Grains and Corn to Growing Beef Steers.**
*C. A. Welchons^{*1}, V. B. Ferrari^{1,2}, R. G. Bondurant¹, F. H. Hilscher¹, G. E. Erickson¹, T. J. Klopfenstein¹, and J. C. MacDonald¹, ¹University of Nebraska, Lincoln, NE, ²University of Sao Paulo, Pirassununga, Brazil*

Ruminant Nutrition II: Beef and General

Chair: Mary E. Drewnoski, University of Nebraska

Sponsor:

8:30 AM - 11:30 AM

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8:30 AM 343 **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, Department of Animal Science, North Dakota State University, Fargo, ND*

9:00 AM 344 **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, NE*

9:30 AM 345 **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, NE*

9:45 AM 346 **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, NE*

10:00 AM 347 **Effect of an Injectable Trace Mineral at the Initiation of a 14 Day CIDR Protocol on Heifer Performance and Reproduction.**

*R. S. Stokes**¹, *A. R. Ralph*¹, *A. J. Mickna*¹, *W. P. Chapple*¹, *A. R. Schroeder*¹, *F. A. Ireland*¹, and *D. W. Shike*²,
¹*University of Illinois, Urbana, IL*, ²*University of Illinois at Urbana-Champaign, Urbana, IL*

10:15 AM 348 **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, NE*

10:30 AM 349 **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 - APTA, Colina, Brazil*, ⁴*Universidade Estadual Paulista, Botucatu, Brazil*

10:45 AM 350 **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**¹, *A. C. Dilger*¹, *D. D. Boler*¹, and *D. W. Shike*², ¹*University of Illinois, Urbana, IL*, ²*University of Illinois at Urbana-Champaign, Urbana, IL*

11:00 AM 351 **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, IA*

11:15 AM 352 **The Effects of Supplementing EPA and DHA during Late Gestation on Lamb Metabolism and Performance.**

*D. N. Coleman**¹, *A. Relling*¹, and *K. C. Rivera-Acevedo*², ¹*Department of Animal Sciences, OSU, Wooster, OH*, ²*University of Puerto Rico at Mayagüez, Mayagüez, Puerto Rico*

Extension - Swine

Sponsor:

8:30 AM - 11:30 AM

207

8:45 AM 71 **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, NC*

9:00 AM 72 **Troubleshooting Poor Litter Size in a Farrow-to-Wean Production System.**

*S. Bloomer**¹, *J. G. Wiegert*¹, *C. Van Genderen*², and *M. T. Knauer*¹, ¹*North Carolina State University, Raleigh, NC*, ²*US Pork Center of Excellence, Clive, IA*

9:15 AM 73 **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. Cabezón*, and *A. P. Schinckel*, *Department of Animal Sciences, Purdue University, West Lafayette, IN*

9:30 AM 74 **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. Cabezón*, *Y. Que*, and *A. P. Schinckel*, *Department of Animal Sciences, Purdue University, West Lafayette, IN*

9:45 AM 75 **Effects of Supplemental Betaine to Semen Extenders on Semen Quality in Boars..**
*D. W. Lugar^{*1}, W. A. Krom¹, J. A. Proctor¹, P. D. Mings¹, and K. R. Stewart², ¹Purdue University, West Lafayette, IN, ²Department of Animal Sciences, Purdue University, West Lafayette, IN*

10:00 AM 76 **Effect of Tail Docking on Welfare and Performance of Pigs during Nursery and Growing-Finishing Periods.**
Y. Li^{} and L. J. Johnston, West Central Research and Outreach Center, University of Minnesota, Morris, MN*

10:15 AM 77 **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, NC*

10:30 AM 78 **Changes in Feet and Leg Joint Angles during First Gestation in Gilts Divergently Selected for Residual Feed Intake .**
*J. D. Stock^{*1}, J. M. Mumm¹, J. C. M. Dekkers¹, A. K. Johnson¹, S. Azarpajouh¹, K. J. Stalder¹, and J. A. Calderon Diaz^{2,3}, ¹Department of Animal Science, Iowa State University, Ames, IA, ²Department of Animal Behaviour and Welfare, Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Jastrzbiec, 05-552 Magdalena, Poland, ³Pig Development, Teagasc Moorepark Grassland Research and Innovation Centre, Fermoy, Co. Cork, Ireland*

10:45 AM 79 **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 80 **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, MN, ²Department of Animal Sciences, University of Minnesota, St. Paul, MN

11:15 AM **19559.**

11:30 AM **19681.**

11:45 AM **19774.**

12:00 PM **19994.**

Breeding and Genetics I

Sponsor:
8:30 AM - 11:30 AM
212

8:30 AM 29 **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, MO, ²Sexing Technologies Inc., DeForest, WI, ³Department of Animal & Veterinary Sciences, University of Idaho, Moscow, ID*

8:45 AM 30 **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, ND*

9:00 AM 31 **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, NC, ²Universidade Federal de Viçosa, Viçosa, Brazil, ³Department of Biological Sciences, North Carolina State University, Raleigh, NC

9:15 AM 32 **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, Viçosa, Brazil, ²North Carolina State University, Raleigh, NC, ³Department of Animal Science, Iowa State University, Ames, IA*

9:30 AM 33 **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, ¹Department of Animal Science, Iowa State University, Ames, IA, ²North Carolina State University, Raleigh, NC, ³ABS Global Inc., DeForest, WI, ⁴Department of Diagnostic Medicine/Pathobiology, Kansas State University, Manhattan, KS, ⁵The Seeing Eye Inc., Morristown, NJ, ⁶USDA ARS BARC APDL, Beltsville, MD*

9:45 AM 34 **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, NC, ²Smithfield Premium Genetics, Rose Hill, NC*

10:00 AM 35 **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, IA, ²University of Saskatchewan, Saskatoon, SK, Canada, ³Centre de développement du porc du Québec, Québec, QC, Canada, ⁴University of Alberta, Edmonton, AB, Canada, ⁵Department of Animal Science, Iowa State University, Ames, IA*

10:15 AM 36 **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*

10:30 AM 37 **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, IA, ²TriOak Foods, Oakville, IA*

Nonruminant Nutrition I: Minerals

Sponsor:

8:30 AM - 11:30 AM

201

8:30 AM 174 **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, ¹Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain, ²University of Illinois at Urbana-Champaign, Urbana, IL*

8:45 AM 175 **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. DeRouchey¹, M. D. Tokach¹, R. D. Goodband¹, S. S. Dritz¹, and Z. J. Rambo², ¹Kansas State University, Manhattan, KS, ²Zinpro Corporation, Eden Prairie, MN*

9:00 AM 176 **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 177 **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. DeRouchey¹, M. D. Tokach¹, R. D. Goodband¹, S. S. Dritz¹, and J. L. Usry², ¹Kansas State University, Manhattan, KS, ²Micronutrients, Indianapolis, IN*

9:30 AM 178 **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, ²Department of Animal Sciences, Purdue University, West Lafayette, IN*

9:45 AM 179 **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*

10:00 AM 180 **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, Madison, WI, ²Zinpro Corp., Eden Prairie, MN*

10:15 AM 181 **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*

10:30 AM 182 **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, KY, ²Novus International, Inc., St. Charles, MO*

10:45 AM 19562.

Nonruminant Nutrition II: Feed Processing/Ingredients

Sponsor:

8:30 AM - 11:30 AM

202

8:30 AM 183 **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, Urbana, IL, ²Agrifirm Innovation Center, Royal Dutch Agrifirm, Apeldoorn, Netherlands*

8:45 AM 184 **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, Urbana, IL, ²Agrifirm Innovation Center, Royal Dutch Agrifirm, Apeldoorn, Netherlands*

9:00 AM 185 **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, IA*

9:15 AM 186 **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, ¹Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, ²University of Alberta, Edmonton, AB, Canada, ³Alberta Agriculture and Forestry, Edmonton, AB, Canada*

9:30 AM 187 **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 188 **Determination of Optimal Pelleting Parameters to Maximize Pellet Durability of Reduced-Fat DDGS.**

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

10:00 AM 189 **Impact of PRRSV on Digestibility and Endogenous Losses in Pigs Fed High or Low Soybean Meal Diets.**

W. P. Schweer^{}, J. F. Patience, E. R. Burrough, and N. K. Gabler, Iowa State University, Ames, IA*

10:15 AM 190 **Chemical Composition and Amino Acid Digestibility of Soybean Meal Produced in the United States, China, Argentina, Brazil, or India..**

L. V. Lagos^{} and H. H. Stein, University of Illinois at Urbana-Champaign, Urbana, IL*

10:30 AM 191 **Estimation of the Productive Energy Content of Corn Germ Meal Based on a Growth Assay in Wean-to-Finish Pigs..**

*J. E. Estrada^{*1}, M. Ellis¹, O. F. Mendoza², and A. M. Gaines², ¹University of Illinois, Urbana-Champaign, IL, ²The Maschoffs, LLC, Carlyle, IL*

10:45 AM 192 **Assessing the Effects of Medium Chain Fatty Acids and Fat Sources on Pcdv RNA Stability and Infectivity.**

*R. A. Cochrane^{*1}, S. S. Dritzi¹, 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, KS, ²Iowa State University, Ames, IA*

11:00 AM 193 **Estimation of Energy and Nutrient Composition of Food Waste from Different Sources As Potential Use in Swine Diets .**

*L. Fung^{*1}, G. C. Shurson¹, P. E. Urriola¹, and L. Baker², ¹Department of Animal Science, University of Minnesota, St. Paul, MN, ²Department of Bioproducts and Biosystems Engineering, University of Minnesota, St. Paul, MN*

11:15 AM 194 **Growth and Performance of Finishing Pigs Fed Oat Screenings.**

*P. J. Lammers^{*1} and M. S. Honeyman², ¹University of Wisconsin-Platteville, Platteville, WI, ²Iowa State University, Ames, IA*

11:30 AM 195 **Effect of Tail-End Dehulling of Canola Meal on Apparent and Standardized Total Tract Digestibility of Phosphorus When Fed to Growing Pigs.**

G. A. Mejicanos^{}, 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 - 4:45 PM
210/211

1:45 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 Riboni^{*1}, J. R. Roche², and J. J. Loores¹, ¹University of Illinois, Urbana, IL, ²DairyNZ, Hamilton, New Zealand*

2:15 PM 62 **The Transition Period in Dairy Cattle, Physiology and Nutritional Consideration, an Overview .**
F. Cardoso^{}, Department of Animal Sciences, University of Illinois, Urbana, IL*

2:45 PM 63 **Amino Acids for Transition Cows.**
C. G. Schwab^{}, Schwab Consulting, Boscobel, WI*

3:15 PM 64 **Vitamin Supplementation Strategies for Transition Dairy Cows..**
*G. Ferreira^{*1} and B. Weiss², ¹Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, VA, ²The Ohio State University, Wooster, OH*

3:45 PM 65 **New Insights into Calcium Intake in Transition Dairy Cattle.**
L. L. Hernandez^{}, Department of Dairy Science, University of Wisconsin, Madison, WI*

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 38 **Identification of Variants Causing Early Embryonic Loss in Beef Cattle.**
*J. F. Taylor^{*1}, 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, MO, ²University of New England, Armidale, Australia, ³Delta G, Miles City, MT, ⁴Kansas State University, Manhattan, KS, ⁵University of California, Davis, CA*

2:30 PM 39 **Genetic Improvement of Sow Lifetime Productivity.**
*G. A. Rohrer^{*1}, 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, SD*

3:10 PM **Break.**

3:25 PM 40 **The roles of age at puberty and energy restriction in sow reproductive longevity: a genomic perspective.**

4:05 PM 41 **Identification of Gene and Gene Sets Enriched for Heifer Conception Rate in US Holstein Heifers.**

Ruminant Nutrition Symposium

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

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

1:45 PM **Welcoming Remarks.**

1:50 PM 353 **The Genetic Improvement of Feed Efficiency in Beef Cattle.**
*J. F. Taylor^{*1}, J. E. Beever², J. E. Decker¹, H. C. Freetly³, 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, MO, ²University of Illinois at Urbana-Champaign, Urbana, IL, ³USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ⁴Iowa State University, Ames, IA, ⁵Washington State University, Pullman, WA, ⁶American Simmental Association, Bozeman, MT, ⁷College of Veterinary Medicine, Texas A&M University, College Station, TX, ⁸University of Nebraska - Lincoln, Lincoln, NE, ⁹Kansas State University, Manhattan, KS*

2:35 PM 354 **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 355 **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, IA, ²University of Missouri, Columbia, MO*

4:05 PM 356 **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

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, PA*

2:25 PM 2 **Pharmacological approaches to pain management in cattle.**
H. Coetzee^{}, Kansas State University, Manhattan, KS*

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, 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, ¹SRUC, Edinburgh, United Kingdom, ²Michigan State University, East Lansing, MI*

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, ¹JBS United Animal Health, Sheridan, IN, ²JBS 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, Carlyle, IL

4:40 PM **Panel Discussion.**

Growth, Development, Muscle Biology, and Meat Science

Sponsor:

1:45 PM - 4:45 PM
212

1:45 PM 136 **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, ¹University of Illinois, Urbana, IL, ²University of Guelph, Guelph, ON, Canada

2:00 PM 137 **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, ¹University of Illinois, Urbana, IL, ²Institute of Agriculture & Life Science, Gyeongsang National University, Jinju, Korea, The Republic of, ³Iowa State University, Ames, IA, ⁴USDA - ARS, Ames, IA

2:15 PM 138 **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, ¹University of Illinois, Urbana, IL, ²Smithfield Foods, Denison, IA, ³USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE

2:30 PM 139 **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 Tech, Blacksburg, VA

2:45 PM 140 **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, Urbana, IL

3:00 PM **19524.**

3:15 PM 19596.

3:30 PM 141 **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. Drouillard*¹, *K. A. Jacques*², *T. G. O'Quinn*¹, and *J. M. Gonzalez*¹, ¹*Kansas State University, Manhattan, KS*, ²*Alltech Inc., Nicholasville, KY*

3:45 PM 19768.

Physiology I: General

Chair: Allison M. Meyer, University of Missouri

Sponsor:

1:45 PM - 4:45 PM

207

1:45 PM 315 **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. Busato*², *C. Avaroma*², *K. Linville*³, *E. Trevisi*⁴, *M. Bionaz*¹, and *J. S. Osorio*⁵, ¹*Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, OR*, ²*Escuela Agrícola Panamericana El Zamorano, El Zamorano, Honduras*, ³*Dairy and Food Science Department, South Dakota State University, Brookings, SD*, ⁴*Università Cattolica del Sacro Cuore, Piacenza, Italy*, ⁵*South Dakota State University, Brookings, SD*

2:00 PM 316 **Immunomodulation in Heifers Fed Endophyte-Infected Tall Fescue Seed.**

A. W. Altman^{*1}, *A. A. Adams*², *K. R. McLeod*¹, and *E. S. Vanzant*¹, ¹*University of Kentucky, Lexington, KY*, ²*The Gluck Equine Research Center, University of Kentucky, Lexington, KY*

2:15 PM **Break.**

2:30 PM 317 **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, NE*

2:45 PM 318 **Investigation of Ovarian Reserve Parameters in *Bos Indicus* Cows.**

A. L. Patterson^{*1}, *J. Beard*², *M. C. Herrington*³, *S. L. Rosasco*³, *E. M. Soares*⁴, *E. J. Northrop*⁵, *E. L. Larimore*⁶, *J. J. J. Rich*⁵, *O. L. Amundson*⁶, *A. K. McNeel*¹, *C. C. Chase, Jr.*¹, *G. A. Perry*⁵, *A. F. Summers*³, and *R. A. Cushman*¹, ¹*USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*, ²*New Mexico State University, Las Cruces, NM*, ³*Animal and Range Science Dept., New Mexico State University, Las Cruces, NM*, ⁴*Federal University of Santa Maria, Santa Maria, Brazil*, ⁵*Department of Animal Science, South Dakota State University, Brookings, SD*, ⁶*South Dakota State University, Brookings, SD*

3:00 PM 319 **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, IA*

3:15 PM 19813.

3:30 PM 19809.

Nonruminant Nutrition III: Nursery Pig I

Sponsor:

1:45 PM 225 **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, KS*

2:00 PM 226 **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*, *Southern Research and Outreach Center, University of Minnesota, Waseca, MN*

2:15 PM 227 **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**¹, *X. J. Lei*², *J. W. Park*², *D. H. Baek*², and *I. H. Kim*², ¹*Department of Animal Resource and Science, Dankook University, Cheonan, South Korea*, ²*Department of Animal Resource and Science, Dankook University, Cheonan, Korea, The Republic of*

2:30 PM 19846.

2:45 PM 228 **Effects of Feeding a Finishing Diet Blended with Different Phases of Nursery Diets on Growth Performance of Nursery Pigs. .**
*F. Wu**¹, *K. F. Coble*², *C. W. Hastad*², *J. M. DeRouchey*¹, *M. D. Tokach*¹, *S. S. Dritz*¹, *J. C. Woodworth*¹, and *R. D. Goodband*¹, ¹*Kansas State University, Manhattan, KS*, ²*New Fashion Pork, Jackson, MN*

3:00 PM 229 **Soluble Fiber Improved Growth Performance of Weaned Pigs Challenged with Enterotoxigenic Escherichia coli.**
*Q. Li**¹, *C. L. Loving*², *N. K. Gabler*¹, *E. R. Burrough*¹, and *J. F. Patience*¹, ¹*Iowa State University, Ames, IA*, ²*USDA National Animal Disease Center, Ames, IA*

3:15 PM 230 **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*, *Department of Animal Biosciences, University of Guelph, Guelph, ON, Canada*

3:30 PM 231 **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, NC*

3:45 PM 232 **Use of Wheat Gluten in Nursery Diets.**
*C. M. De Mille**, *M. J. Azain*, *C. R. Dove*, and *A. Yin*, *University of Georgia, Athens, GA*

4:00 PM 233 **Effects of Dietary Standardized Ileal Digestible Ile:Lys Ratio on Growth Performance of 6 to 11 Kg Pigs.**
*A. B. Clark**¹, *M. D. Tokach*¹, *J. M. DeRouchey*¹, *S. S. Dritz*¹, *K. J. Touchette*², *R. D. Goodband*¹, and *J. C. Woodworth*¹, ¹*Kansas State University, Manhattan, KS*, ²*Ajinomoto Heartland, Inc., Chicago, IL*

4:15 PM 234 **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 235 **Effect of a New 6-Phytase, Natuphos E, on Piglet Performance, Ileal Digestibility and Bone Mineralization.**
*D. Torrallardona*¹, *M. Coelho*², and *P. Ader*³, ¹*IRTA, Monogastric Nutrition, Constanti, Spain*, ²*BASF, Humble, TX*, ³*BASF SE, Lampertheim, Germany*

Nonruminant Nutrition IV: Gestation/Lactation

Sponsor:
1:45 PM - 4:45 PM
214

1:45 PM 236 **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 237 **The Effect of Dietary Protein for Lactating Sows on Sow Body Composition and Metabolism.**

*C. F. Hansen¹, T. S. Bruun², A. H. Tauson³, and A. V. Strathe^{*4}, ¹University of Copenhagen, DK-1870 Fredriksberg C, Denmark, ²SEGES Pig Research Centre, Copenhagen V, Denmark, ³University of Copenhagen, 1870 Frederiksberg C, Denmark, ⁴Department of Large Animal Sciences, University of Copenhagen, Copenhagen, Denmark*

2:15 PM 238 **Increased Dietary Protein for Lactating Sows Improved Sow and Litter Performance.**

*A. V. Strathe^{*1}, T. S. Bruun², N. Geertsens³, and C. F. Hansen⁴, ¹Department of Large Animal Sciences, University of Copenhagen, Copenhagen, Denmark, ²SEGES Pig Research Centre, Copenhagen V, Denmark, ³Danbred International, Copenhagen, Denmark, ⁴University of Copenhagen, DK-1870 Fredriksberg C, Denmark*

2:30 PM 239 **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, NC*

2:45 PM 240 **Effect of Sow Lactation Crate Size on Litter Performance and Survivability .**

*L. L. Thomas^{*1}, 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, KS, ²New Fashion Pork, Jackson, MN*

3:00 PM 241 **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, KS*

3:15 PM 242 **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 243 **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 244 **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. Trottier¹, ¹Michigan State University, East Lansing, MI, ²Ajinomoto Heartland, Inc., Chicago, IL*

4:00 PM 245 **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, NC*

4:15 PM 246 **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, ¹Department of Animal Sciences, Purdue University, West Lafayette, IN, ²Universidad Austral de Chile, Valdivia, Chile, ³USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN,*

Nonruminant Nutrition V: Enzymes

Sponsor:

1:45 PM - 4:45 PM

216

- 1:45 PM 247 **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}, ¹IRTA, Monogastric Nutrition, Constanti, Spain, ²BASF SE, Lampertheim, Germany, ³BASF, Humble, TX*
- 2:00 PM 248 **Evaluating the Effect of Superdosing Natuphos E 5,000 G Phytase on Nursery Pig Performance.**
K. M. Gourley^{}, J. C. Woodworth, J. M. DeRouche, M. D. Tokach, S. S. Dritz, and R. D. Goodband, Kansas State University, Manhattan, KS*
- 2:15 PM 249 **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, NC*
- 2:30 PM 250 **Effects of Feeding Corn-Expressed Phytase on the Live Performance, Bone Characteristics, and Phosphorus Digestibility of Nursery Pigs..**
*J. N. Broomhead^{*1}, 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 251 **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^{*1}, J. Zhu², C. Chen¹, P. E. Urriola³, and G. C. Shurson³, ¹Department of Animal Sciences, University of Minnesota, St. Paul, MN, ²Department of Animal Science, University of Minnesota, Saint Paul, MN, ³Department of Animal Science, University of Minnesota, St. Paul, MN*
- 3:00 PM 252 **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^{*1}, G. C. Shurson², C. Chen¹, and P. E. Urriola², ¹Department of Animal Sciences, University of Minnesota, St. Paul, MN, ²Department of Animal Science, University of Minnesota, St. Paul, MN*
- 3:15 PM 253 **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, ¹School of Agriculture and Food Science, University College Dublin, Belfield, Dublin, Ireland, ²Pig Development Department, Animal and Grassland Research and Innovation Centre, Teagasc, Moorepark, Fermoy, Ireland, ³Department of Science, Waterford Institute of Technology, Waterford, Ireland, ⁴IRTA, Monogastric Nutrition, Constanti, Spain*
- 3:30 PM 254 **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, IA*
- 3:45 PM 255 **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. Arent*², and *M. C. Walsh*¹, ¹*Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, UK, United Kingdom*, ²*Dupont, Industrial Biosciences, Brabrand, Denmark*

4:00 PM 256 **Porcine In Vitro Degradation and Fermentation Characteristics of Canola Co-Products without or with Fiber-Degrading Enzymes .**

J. W. Lee^{*1}, *R. Patterson*², and *T. A. Woyengo*¹, ¹*South Dakota State University, Brookings, SD*, ²*Canadian Biosystems, Calgary, AB, Canada*

4:15 PM 257 **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. Kim*², *X. Wang*¹, *J. J. Chewning*³, *J. A. Apple*⁴, *J. R. Bergstrom*⁵, and *C. V. Maxwell*¹, ¹*Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville, AR*, ²*University of Arkansas, Fayetteville, AR*, ³*Swine Research Services, Inc., Springdale, AR*, ⁴*Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR*, ⁵*DSM 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 142 **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, Urbana, IL*

9:25 AM 143 **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 144 **Where Are We Going As Cattle Get Bigger?.**

K. W. Bruns^{*1}, *R. H. Pritchard*², *J. C. MacDonald*³, *R. G. Bondurant*⁴, and *R. N. Funston*⁵, ¹*University of Nebraska-Lincoln, West Central Research & Extension Center, North Platte, NE*, ²*South Dakota State University, Brookings, SD*, ³*University of Nebraska-Lincoln, Lincoln, NE*, ⁴*University of Nebraska, Lincoln, NE*, ⁵*University of Nebraska, North Platte, NE*

10:55 AM 145 **Beef Yield Grading: History, Issues, and Opportunities.**

T. E. Lawrence^{*}, *West Texas A&M University, Canyon, TX*

Animal Behavior, Housing and Well-Being

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. Schinckel*¹, *J. N. Marchant-Forde*², *J. S. Johnson*², and *R. M. Stwalley*³, ¹*Department of Animal Sciences, Purdue University, West Lafayette, IN*, ²*USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN*, ³*Department of Agricultural Biological Engineering, Purdue University, 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*, *Agricultural and Biosystems Engineering, Iowa State University, Ames, IA*

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. Stock*¹, *K. J. Stalder*¹, *A. K. Johnson*¹, *A. Ramirez*², *S. Azarpajouh*¹, and *J. A. Calderon Diaz*^{3,4},
¹*Department of Animal Science, Iowa State University, Ames, IA*, ²*Iowa State University, Ames, IA*, ³*Pig Development, Teagasc Moorepark Grassland Research and Innovation Centre, Fermoy, Co. Cork, Ireland*, ⁴*Department of Animal Behaviour and Welfare, Institute of Genetics and Animal Breeding, Polish Academy of Sciences, Jastrzębiec, 05-552 Magdalenka, Poland*

9:30 AM 15 **Do Pigs Form Social Structures: An Application of Social Network Analysis?.**
*Y. Li*¹, *H. Zhang*¹, *L. J. Johnston*¹, and *W. Martin*², ¹*West Central Research and Outreach Center, University of Minnesota, Morris, MN*, ²*University of Minnesota Extension, St Paul, MN*

9:45 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*

10:00 AM 17 **Bio-Pesticide Management of Pasture Flies in the Great Plains Via a Push-Pull Strategy .**
*D. J. Boxler**¹, *G. J. Brewer*², *J. Zhu*², and *R. N. Funston*³, ¹*University of Nebraska-Lincoln, West Central Research & Extension Center, North Platte, NE*, ²*University of Nebraska-Lincoln, Lincoln, NE*, ³*University of Nebraska, North Platte, NE*

10:15 AM 18 **Salivary Cortisol Concentrations of Group-Housed Gestating Sows: Individual Vs. Group Samples.**
*Y. Li*¹, *S. Cui*¹, *X. Yang*², *B. A. Crooker*³, *S. K. Baidoo*², and *L. J. Johnston*¹, ¹*West Central Research and Outreach Center, University of Minnesota, Morris, MN*, ²*Southern Research and Outreach Center, University of Minnesota, Waseca, MN*, ³*Dept. of Animal Science, University of Minnesota, St Paul, MN*

10:30 AM 19 **The Use of Prepartal Standing Behavior As a Parameter for Early Detection of Subclinical Ketosis in Postpartal Dairy Cows.**
*S. Rodríguez-Jiménez**¹, *K. J. Haerr*², *J. J. Loor*², *J. S. Osorio*³, and *F. C. Cardoso*², ¹*South Dakota State University, Brookings, SD*, ²*University of Illinois, Urbana, IL*, ³*Dairy and Food Science Department, South Dakota State University, Brookings, SD*

10:45 AM 19388.

11:00 AM 19970.

Physiology II: Swine

Chair: Tiffany A Wilmoth, Clemson University

Sponsor:

8:30 AM - 11:30 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 Ramírez*, ICA - 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, IA, 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^{*1}, M. D. Trenhaile-Grannemann¹, P. S. Miller², and T. E. Burkey², ¹University of Nebraska, Lincoln, NE, ²University of Nebraska-Lincoln, Lincoln, NE

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, Lincoln, NE

9:30 AM 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, IA

9:45 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, IA

10:00 AM 330 **Impact of Lawsonia Intracellularis-Mycoplasma Hyopneumoniae Dual Challenge on Growth Performance of Pigs Divergently Selected for Residual Feed Intake.**
E. Helm^{*1}, A. C. Outhouse¹, K. Schwartz¹, J. C. M. Dekkers², S. M. Lonergan¹, and N. K. Gabler¹, ¹Iowa State University, Ames, IA, ²Department of Animal Science, Iowa State University, Ames, IA

Nonruminant Nutrition VI: Grow/Finish Management and Nutrition

Sponsor:
8:30 AM - 11:30 AM
214

8:30 AM 275 **The Effects of in Utero Heat Stress on Fasting Heat Production in Growing Pigs.**
N. M. Chapel^{*1}, 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, ²Department of Animal Sciences, Purdue University, West Lafayette, IN, ³University of Missouri, Columbia, MO, ⁴Iowa State University, Ames, IA, ⁵USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN

8:45 AM 276 **Standardized Ileal Digestible Lysine Requirements for Finishing PIC Pigs Under Commercial Conditions: A Meta-Analysis.**
M. Goncalves, U. Orlando, W. Cast*, and M. Culbertson, Genus PIC, Hendersonville, TN

9:00 AM 277 **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. Liu^{*1}, T. S. Li¹, J. Yin², H. M. Yun², and I. H. Kim², ¹Department of Animal Resource and Science, Dankook University, Cheonan, South Korea, ²Department of Animal Resource and Science, Dankook University, Cheonan, Korea, The Republic of

9:15 AM 278 **Effects of Kemtrace Cr Level and Feeding Regimen on Finishing Pig Growth Performance and Carcass Characteristics.**

*J. T. Gebhardt¹, H. S. Cemin^{*1}, J. C. Woodworth¹, M. D. Tokach¹, S. S. Dritz¹, J. M. DeRouche¹, J. A. Loughmiller², and R. D. Goodband¹, ¹Kansas State University, Manhattan, KS, ²Kemin Industries, Des Moines, IA*

9:30 AM 279 **Evaluation of Standardized Ileal Digestible Tryptophan: Lysine Ratio with and without Ractopamine HCl on Growth Performance and Carcass Characteristics of Finishing Pigs .**
*J. A. Soto^{*1}, M. D. Tokach¹, K. J. Touchette², S. S. Dritz¹, J. C. Woodworth¹, J. M. DeRouche¹, and R. D. Goodband¹, ¹Kansas State University, Manhattan, KS, ²Ajinomoto Heartland, Inc., Chicago, IL*

9:45 AM 280 **Effects of Dietary Electrolyte Balance and Crude Protein on Growth Performance and Carcass Characteristics of Finishing Pigs from 110 to 130 Kg.**
J. A. Soto², M. D. Tokach, S. S. Dritz, J. C. Woodworth, J. M. DeRouche, and R. D. Goodband, Kansas State University, Manhattan, KS

10:00 AM 281 **Does Chemical Composition of Dietary Fat Sources Alter mRNA Abundance of Genes Related to Lipid Digestion and Metabolism in Pigs?.**
T. A. Kellner³ and J. F. Patience, Iowa State University, Ames, IA

10:15 AM 282 **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, ¹Département des sciences animales, Université Laval, Québec, QC, Canada, ²Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ³FCAV/UNESP, Jaboticabal, Brazil*

10:30 AM 283 **Evaluation of Sid Lys:ME Ratios in Grow-Finishing Pigs.**
*L. Ochoa^{*1}, 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 284 **Impact of Grow-Finish Performance and Carcass Characteristics in Response to an Increased Apparent Health Challenge.**
*A. S. Cornelison^{*1}, N. H. Williams², B. Haber², M. A. Berhow³, L. A. Karkiker¹, J. Less⁴, and J. F. Patience¹, ¹Iowa State University, Ames, IA, ²Iowa Select Farms, Iowa Falls, IA, ³USDA, ARS, NCAUR, Peoria, IL, ⁴ADM Animal Nutrition, Decatur, IL*

11:00 AM 285 **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. Stein², and K. J. Touchette³, ¹University of Illinois, Urbana, IL, ²University of Illinois at Urbana-Champaign, Urbana, IL, ³Ajinomoto Heartland, Inc., Chicago, IL*

11:15 AM 286 **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. Apple⁴, J. E. Thomson⁵, and C. V. Maxwell¹, ¹Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville, AR, ²University of Arkansas, Fayetteville, AR, ³Swine Research Services, Inc., Springdale, AR, ⁴Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR, ⁵Evonik Degussa Corp, Kennesaw, GA*

Breeding and Genetics II

Sponsor:

8:30 AM - 11:30 AM
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8:30 AM 42 **Young Scholar Presentation: Follicle Dynamics and Hormonal Environment in a Novel High Fecundity Genotype in Cattle.**
*A. Garcia-Guerra^{*1,2}, B. W. Kirkpatrick³, and M. C. Wiltbank⁴, ¹Univeristy of Wisconsin-Madison, Madison, WI, ²The Ohio State University, Columbus, OH, ³University of Wisconsin-Madison, Madison, WI, ⁴University of Wisconsin, Madison, WI*

- 8:45 AM 43 **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, ¹Department of Animal Sciences, North Dakota State University, Fargo, ND, ²Department of Animal Science, Texas A&M University, College Station, TX*
- 9:00 AM 44 **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*
- 9:15 AM 45 **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, SD, ²USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*
- 9:30 AM 46 **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, NC*
- 9:45 AM 47 **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, ¹Department of Animal Science, Iowa State University, Ames, IA, ²Departamento de Mejora Genética Animal, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, Madrid, Spain, ³USDA ARS BARC APDL, Beltsville, MD, ⁴Department of Diagnostic Medicine/Pathobiology, Kansas State University, Manhattan, KS*
- 10:00 AM 48 **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, NC*

10:15 AM 19945.

Nonruminant Nutrition VII: Feed Additives/Ingredients

Sponsor:

8:30 AM - 11:30 AM

216

- 8:30 AM 287 **Young Scholar Presentation: The Impacts of Dietary Fat Source on Lipid Digestion, Absorption, Deposition, and Metabolism in Grow-Finish Pigs.**
*T. A. Kellner^{*1} and J. F. Patience², ¹Iowa State University, Ames, IA, ²Department of Animal Science, Iowa State University, Ames, IA*
- 8:45 AM 288 **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 Thanh^{*1}, J. K. Htoo², L. F. Wang³, and R. T. Zijlstra¹, ¹Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, ²Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany, ³University of Alberta, Edmonton, AB, Canada*
- 9:00 AM 289 **Effects of a Yeast-Based Feed Additive on Nursery Pig Performance .**
*H. E. Williams^{*1}, J. C. Woodworth¹, J. M. DeRouchey¹, S. S. Dritz¹, M. D. Tokach¹, R. E. Musser², and R. D. Goodband¹, ¹Kansas State University, Manhattan, KS, ²NUTRIQUEST, Mason City, IA*
- 9:15 AM 290 **The Effects of Feeding Narasin (Skycis) on Late Finishing Pig Performance.**
*M. T. Knauer^{*1} and R. A. Arentson², ¹North Carolina State University, Raleigh, NC, ²Elanco Animal Health, Greenfield, IN*
- 9:30 AM 291 **Effects of Aminogut and Diet Formulation Approach on Growth Performance in Nursery Pigs.**

M. A. D. Goncalves¹, M. B. Menegat^{*2}, M. D. Tokach², S. S. Dritz², K. J. Touchette³, J. M. DeRouche², J. C. Woodworth², and R. D. Goodband², ¹Genus PIC, Hendersonville, TN, ²Kansas State University, Manhattan, KS, ³Ajinomoto Heartland, Inc., Chicago, IL

9:45 AM 292 **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^{*1}, M. D. Trenhaile¹, D. M. van Sambeek¹, K. C. Moore¹, S. M. Barnett¹, S. C. Fernando¹, T. E. Burkey², and P. S. Miller², ¹University of Nebraska, Lincoln, NE, ²University of Nebraska-Lincoln, Lincoln, NE

10:00 AM 293 **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, Department of Animal Science, University of Minnesota, St. Paul, MN

10:15 AM 294 **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. Walsh^{*1}, L. Payling¹, I. H. Kim², and H. H. Stein³, ¹Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, UK, United Kingdom, ²Department of Animal Resource, and Science, Dankook University, Cheonan, South Korea, ³University of Illinois at Urbana-Champaign, Urbana, IL

10:30 AM **19445.**

10:45 AM 295 **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

11:00 AM 296 **Impact of a Direct-Fed Microbial at Three Inclusion Rates on Growth Performance in Growing and Finishing Pigs.**
S. A. Weiland¹, T. Waugh², and J. F. Patience¹, ¹Iowa State University, Ames, IA, ²Kay Dee Feed Company, Sioux City, IA

11:15 AM **19932.**

11:30 AM 297 **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. Bienhoff³, B. Kremer⁴, J. A. Loughmiller³, and L. Greiner¹, ¹Carthage Innovative Swine Solutions, LLC, Carthage, IL, ²Professional Swine Management, Carthage, IL, ³Kemin Industries, Des Moines, IA, ⁴Kemin Industries, Inc., Des Moines, IA

Nonruminant Nutrition VIII: Nursery Pig II

Sponsor:
8:30 AM - 11:30 AM
213

8:30 AM 298 **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, IA, ²Diamond V, Cedar Rapids, IA

8:45 AM 299 **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, SD

- 9:00 AM 300 **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, NC*
- 9:15 AM 301 **Effect of Lactose, Inulin, Lactobacillus Acidophilus Fermentation Product, or Dietary Antibiotics on Intestinal Function of Nursery Pigs..**
*J. A. Acosta**¹, *N. K. Gabler*¹, *J. W. Frank*², *B. E. Bass*², and *J. F. Patience*¹, ¹*Iowa State University, Ames, IA*, ²*Diamond V, Cedar Rapids, IA*
- 9:30 AM 302 **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, KS*
- 9:45 AM 303 **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. Sinn*¹, *B. St-Pierre*², and *C. L. Levesque*¹, ¹*South Dakota State University, Brookings, SD*, ²*Animal Science Department, South Dakota State University, Brookings, SD*
- 10:00 AM 304 **Evaluation of the Lysine Requirement of 11- to 23-Kg Nursery Pigs.**
*A. Graham*¹, *B. Knopf*¹, *L. Greiner*¹, *M. A. D. Goncalves*², *U. A. D. Orlando*², and *J. Connor*³, ¹*Carthage Innovative Swine Solutions, LLC, Carthage, IL*, ²*Genus PIC, Hendersonville, TN*, ³*Carthage Veterinary Service, Ltd, Carthage, IL*
- 10:15 AM 305 **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. Woodworth*¹, *J. M. DeRouchey*¹, *S. S. Dritz*¹, *M. D. Tokach*¹, *K. Hogan*², and *S. R. Webster*², ¹*Kansas State University, Manhattan, KS*, ²*Trouw Nutrition USA, LLC., Highland, IL*
- 10:30 AM 306 **Effect of Natural Feed Additives As Alternatives to in-Feed Antibiotics on the Performance of Nursery Pigs.**
*S. M. Mendoza*¹, *G. R. Murugesan*¹, *E. Hendel*¹, *E. Kadas-Toth*², and *A. Kovacs*², ¹*BIOMIN America Inc., San Antonio, TX*, ²*BIOMIN Holding GmbH, Getzersdorf, Austria*
- 10:45 AM 307 **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. Huang*³, and *H. H. Stein*⁴, ¹*Universidad Nacional de Colombia, Bogota, Colombia*, ²*University of Illinois, Urbana, IL*, ³*Beijing TongLiXingKe Agriculture Science & Technology Co. Ltd, BEIJING, China*, ⁴*University of Illinois at Urbana-Champaign, Urbana, IL*
- 11:00 AM 308 **A Review and Evaluation of Antibiotic Alternatives in the Literature.**
*W. P. Schweer*¹, *J. F. Patience*¹, *K. Schwartz*¹, *D. Linhares*¹, *C. Rademacher*¹, *H. K. Allen*², *C. L. Loving*², *A. Ramirez*¹, and *N. K. Gabler*¹, ¹*Iowa State University, Ames, IA*, ²*USDA National Animal Disease Center, Ames, IA*
- 11:15 AM 309 **Validation of Deuterium Oxide Method for Estimating Milk Intake By Piglets.**
*S. Zhang*¹, *N. L. Trottier*¹, and *J. C. Marini*², ¹*Michigan State University, East Lansing, MI*, ²*USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX*

Ruminant Nutrition III: Dairy

Chair: Tara L. Felix, Pennsylvania State University

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, IA*

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. Casperson³ 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, ¹Dairy Science Department, South Dakota State University, Brookings, SD, 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, MI*

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, WI, ²USDA-ARS, US 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, Dairy and Food Science Department, South Dakota State University, Brookings, SD*

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, ¹Dairy Science Department, South Dakota State University, Brookings, SD, ²South Dakota State University, Brookings, SD*