



**ASAS-CSAS
ANNUAL MEETING
OKLAHOMA CITY, OKLAHOMA
JUNE 26-30, 2022**

Sunday, June 26, 2022

ASAS-NANP Symposium: Mathematical Modeling in Animal Nutrition

Chair: Luis Tedeschi, Texas A&M University

8:30 AM - 5:00 PM

208 A/B

8:30 a.m. 72 **Developing Machine Learning Models When Data Is Limiting**

Luis O. Tedeschi ¹

¹Texas A&M University

8:40 a.m. 75 **The Power of Theoretical and Practical Identifiability Analysis for Modeling (micro-) Biological Processes**

Rafael Muñoz-Tamayo ¹

¹Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants, 75005, Paris, France

9:20 a.m. 74 **Automation, Machine Learning and Computer Vision as Decision Support; Taking What Animal Agricultural Does Well into the Future**

Scott McClain ¹

¹SAS Institute, Inc

10:00 a.m. **ASAS-NANP Symposium Break**

10:10 a.m. 73 **Building Models for Animal Production and Management with System Dynamics**

Benjamin L. Turner ¹

¹Texas A&M University-Kingsville

11:50 a.m. 76 **ASAS-NANP Symposium Roundtable Discussions**

Aline Remus ¹

¹Agriculture and Agri-Food Canada

1:00 p.m. 71 **Agent-based Modeling: A Historical Perspective and Comparison to Other Modeling Techniques**

Karun Kaniyamattam ¹

¹Texas A&M University

2:40 p.m. **ASAS-NANP Symposium Break**

2:55 p.m. 77 **Hands-on: Making Sense of Big Data, Machine Learning, and Modeling**

Jameson R. Brennan ¹, Hector M. Menendez ²

¹South Dakota State University, West River Research and Extension, Department of Animal Science, ²South Dakota State University

4:35 p.m. 70 **ASAS-NANP Symposium Roundtable Discussions**

Hector M. Menendez ¹

¹South Dakota State University

4:55 p.m. **ASAS-NANP Symposium Conclusion**

Triennial Growth Symposium

Chair: Min Du, Washington State University

1:00 PM - 5:30 PM

209 A/B

1:00 p.m. **Triennial Growth Symposium Introduction**

1:05 p.m. 208 **Single cell RNA Sequencing (scRNA-seq) in Studying the Early Embryonic Muscle Development**

Liang Zhao ¹, Min Du ²

¹Department of Animal Sciences, Washington State University, ²Washington State University

1:45 p.m. 209 **A Single-Cell Atlas of Bovine Skeletal Muscle Tissue Reveals Mechanisms Underlying Differences in Quality Between Wagyu and Brahman Beef**

Xing Fu ¹

¹Louisiana State University

2:25 p.m. 213 **From Conception to Birth: The Role of Minerals on Beef Cattle Fetal Programming**

Wellison Diniz ¹, Ana Clara Baião Menezes ², Kacie L. McCarthy ³, Jean A. Hall ⁴, Joel S. Caton ², Carl R. Dahlen ², Alison K. Ward ²

¹Auburn University, ²North Dakota State University, ³University of Nebraska, ⁴Oregon State University

3:05 p.m. **Triennial Growth Symposium Break I**

3:20 p.m. 210 **Restricted Maternal Nutrition: Impacts on Fetal Development and Metabolism in Sheep**

Kristen E. Govoni ¹

¹Dept. of Animal Science, University of Connecticut

4:00 p.m. 211 **Overcoming the Growth Deficits Programmed by Maternofetal Stress**

Dustin T. Yates ¹

¹University of Nebraska-Lincoln

4:40 p.m. 212 **Use of Vitamin A on Developmental Studies in Ruminant Animals**

Marcio M. Ladeira ¹, Jose Maria Oliveira Junior ¹

¹Universidade Federal de Lavras

5:20 p.m. **Triennial Growth Symposium Conclusion**

Monday, June 27, 2022

Poster Session I
7:00 AM - 8:15 AM
Exhibit Hall A

7:00 a.m. PSI-1 **An Evaluation of Functionality of Cryopreserved Sperm Cells Treated with Heifer-plus™**

Heather R. Ruemke¹, Cheyenne L. Runyan¹, Jolena N. Waddell¹, David Roper¹, A. Brant Poe¹, Brad Daigneault²

¹Tarleton State University, ²University of Florida

7:00 a.m. PSI-2 **Analysis of Boar Semen Microbiome and Sperm Quality Parameters**

Brooke E. McAnally¹, Molly S. Smith¹, Jeffrey G. Wiegert¹, Rebecca K. Poole¹

¹Texas A&M University

7:00 a.m. PSI-3 **Balance Between Productivity and Environmental Impacts of Grazed and Hay Fields**

Marina Miquilini¹, Ricardo Ribeiro², Marilia Chiavegato²

¹Ohio State University, ²The Ohio State University

7:00 a.m. PSI-4 **Beef Fat Enriched with Vaccenic Acid and cis9,trans11-conjugated Linoleic Acid Promotes Hepatic Steatosis and Glucose Intolerance in High-fat-fed C57BL/6 Mice**

Yanqing Xu¹, Fawaz Haj¹, Shinichiro Koike¹, Payam Vahmani¹

¹University of California, Davis

7:00 a.m. PSI-5 **Comparison of 7&7 Synch and 7-day Co-synch + CIDR Protocols in a Fixed-time AI System on Beef Cows Using Y-sorted Sex-selected Semen**

Kolton W. Aubuchon¹, John A. Odde², Ashley R. Hartman¹, Michael Semler¹, Kenneth G. Odde¹, Karol E. Fike¹

¹Kansas State University, ²Odde Ranch

7:00 a.m. PSI-7 **Differential Effects of Garlic on the Secretion of Structurally Different Galectins in Sheep Blood**

SreeNavya Inupala¹, Sowmya Jagana¹, Priyanka Pande¹, MD Rasel Uzzaman¹, Mulumebet Worku¹

¹NC A&T State University

7:00 a.m. PSI-8 **Digestible Energy and Metabolizable Energy Prediction Using Chemical Composition of Feces with No Dietary Information**

Jeonghyeon Son¹, Jongkeon Kim¹, Beob G. Kim¹

¹Konkuk University

7:00 a.m. PSI-9 **Disrupting CXCL12-CXCR4 Chemokine Axis at the Fetal-maternal Interface During Implantation Results in Altered Expression of Angiogenic and Insulin-like Growth Factors in Ovine Placenta Midgestation**

Megan E. Wasson¹, Kaitlyn M. Mason¹, Ryan L. Ashley¹

¹New Mexico State University

7:00 a.m. PSI-10 **Effect of Chronic Melatonin Supplementation During Mid to Late Gestation on Performance and Behavioral Responses of Cows Exposed to Summer Heat Stress**

Felix U. Samuel¹, Friday Zakari², Nathaniel Ogunkunle¹, Bobwealth O. Omontese¹
¹Alabama A&M University, ²University of Jos

7:00 a.m. PSI-20 **Effect of Different Forage Allowances During the Middle and Final Thirds of Pregnancy in Nellore Dams Pregnant with Female Calves on Offspring Performance and Milk Yield**

Luciana Melo Sousa¹, Ivanna M. Oliveira², William L. L. Souza³, Karla A. Oliveira⁴, Iorrano A. A. Cidrini⁵, Igor Machado Ferreira⁶, Laura Franco Prados⁷, Flávio Dutra de Resende⁷, Gustavo Rezende Siqueira⁷
¹UNESP / APTA, ²FAZU, ³São Paulo State University, Jaboticabal, Brazil, ⁴Unesp - FCAV, Jaboticabal, SP, Brazil, ⁵Montana State University, ⁶UNESP/APTA, ⁷APTA

7:00 a.m. PSI-11 **Effect of Garlic Barrier on Fecal Egg Count and Protein Secretion in Goats**

Sowmya Jagana¹, SreeNavya Inupala¹, Priyanka Pande¹, MD Rasel Uzzaman¹
¹NC A&T State University

7:00 a.m. PSI-18 **Effect of Heat Processing Methods on Carbohydrate Subfractions and Degradation in Relation to Carbohydrate Molecular Spectral Profile of Barley Grain Using Advanced Molecular Spectroscopy in Ruminants**

Peiqiang Yu¹, Luciana Prates², P. Yu³
¹Department of Animal and Poultry Science, University of Saskatchewan, ²University of Saskatchewan, ³ASAS, CSAS, ADSA

7:00 a.m. PSI-19 **Effect of Increasing Supplementation of Bacillus Spp. on in vitro Ruminal Fermentation and Nutrient Digestibility**

Araceli B. Maderal¹, Ignacio Fernandez Marenchino¹, Wilmer Cuervo¹, Federico Tarnonsky¹, Federico Podversich¹, Juan Vargas¹, Martin Ruiz Moreno¹, Tessa M. Schulmeister¹, Oscar Queiroz², Bruno I. Cappellozza², Nicolas DiLorenzo³
¹University of Florida, ²Chr. Hansen A/S, ³Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

7:00 a.m. PSI-13 **Effect of Targeted Metaphylaxis Using Blood Leukocyte Status on Health, Performance, and Economic Outcomes of Auction-derived Feedlot Heifers**

Chris Johnson¹, Norah Bate², Shaun Sweiger², John T. Richeson¹
¹West Texas A&M University, ²Advanced Animal Diagnostics

7:00 a.m. PSI-17 **Effects of a Supplemental Water Source and Trace-mineral Based Electrolyte Drinking Solution on Intake and Blood Cell Count of Newly Received Feedlot Calves**

Mackenzie M. Smithyman¹, Vinicius N. Gouvea², Dayna L. Campbell¹, Glenn C. Duff¹, Clint A. Loest¹, Mark E. Branine³
¹New Mexico State University, ²Texas A&M AgriLife Research, ³Zinpro Corporation

7:00 a.m. PSI-14 **Effects of Estrus Expression on the Microbial Community Composition of the Uterus in Beef Cows on Day 15 of the Estrous Cycle**

Madison B. B. Walker¹, Matthew P. Holton¹, Jeferson M. Lourenco¹, Pedro L.P. Fontes¹
¹University of Georgia

7:00 a.m. PSI-15 **Effects of Melatonin on Behavioral and Physiological Responses of Weaned Beef Calves**

Nathaniel Ogunkunle ¹, Friday Zakari ², Felix U. Samuel ¹, Bobwealth O. Omontese ¹
¹Alabama A&M University, ²University of Jos

7:00 a.m. PSI-16 **Effects of Melatonin on Physiological Parameters, Chute and Exit Scores in Beef Calves Exposed to Summer Heat Stress**

Friday Zakari ¹, Felix U. Samuel ², Nathaniel Ogunkunle ², Bobwealth O. Omontese ²
¹University of Jos, ²Alabama A&M University

Ruminant Nutrition I: Growth and Efficiency

Chair: Jhones Sarturi, Texas Tech University

8:00 AM - 10:05 AM

301 A/B

8:00 a.m. **Ruminant Nutrition I: Growth and Efficiency Introduction**

8:05 a.m. 326 **Nutritional Grouping and Machine-learning Techniques: Towards a Feed Efficiency Improvement in Beef Cattle Production**

Pablo Guarnido Lopez ¹, Antonio de Vega ², Mohammed Ben Aouda ³, Luis O. Tedeschi ⁴
¹INRA, ²Universidad de Zaragoza-CITA, ³Institut AgroDijon, University Bourgogne, University Bourgogne Franche-Comté, F-21000, Dijon, France, ⁴Texas A&M University

8:20 a.m. 327 **Parameter Updates in the Davis Growth Model for Growth, Intake, and Composition of Modern Angus-cross Cattle**

Meredith Harrison ¹, James W. Oltjen ²
¹UC Davis, ²University of California, Davis

8:35 a.m. 324 **Factors Affecting Growth, Efficiency, and Carcass Quality of Finishing Dairy X Beef Hybrids**

Addie Wommack ¹, Colton A. Robison ¹, Garrett Farran ¹, Blake K. Wilson ¹, Olivia N. Genther Schroeder ², Troy Wistuba ², Paul A. Beck ¹
¹Oklahoma State University, ²Purina Animal Nutrition

8:50 a.m. 322 **The Influence of Previous Plane of Nutrition on Grain or Grass-fed Finished Steers: Water-related Gene Expression in the Kidney**

Aghata Silva ¹, Arturo Macias Franco ², Felipe Henrique De Moura ³, Bradley S. Ferguson ², Mozart A. Fonseca ³
¹Auburn University, ²University of Nevada Reno, ³University of Nevada, Reno

9:05 a.m. 321 **Evaluation of Heifer Forage Efficiency Through RFI and Greenhouse Gas Emissions**

Emma A. Briggs ¹, Kade Horton ¹, Mikayla F. Moore ¹, David Lalman ¹
¹Oklahoma State University

9:20 a.m. 320 **Effect of Breed of Sire and Calving Season on Feedlot Performance and Carcass Characteristics**

Mikayla F. Moore ¹, Emma A. Briggs ¹, Blake K. Wilson ¹, Ryan R. Reuter ¹, Paul A. Beck ¹, Andrew P. Foote ¹, David Lalman ¹
¹Oklahoma State University

9:35 a.m. 325 **Candidate Plasma Biomarkers Associated with Residual Feed Intake in Beef Steers**

Godstime A. Taiwo¹, Modoluwamu Idowu¹, Shelby Collins¹, Taylor S. Sidney¹, Matthew E. Wilson¹, Andres A. Pech-Cervantes², Ibukun M. Ogunade¹

¹West Virginia University, ²Fort Valley State University

9:50 a.m. 323 **CANCELLED: Effects of Slaughter Weight and Sex on Multivariate Fat Allometric Coefficients for Determination of Optimal Slaughter Points on Crossbred Angus X Nellore Steers and Bulls**

Arturo Macias Franco¹, Aghata Silva², Mozart A. Fonseca³, Sebastião de Campos Valadares Filho⁴

¹University of Nevada Reno, ²Auburn University, ³University of Nevada, Reno, ⁴Universidade Federal de Viçosa

Ruminant Nutrition II: Health

Chair: Robin Anderson, USDA/ARS, Southern Plains Agricultural Research Center's Food & Feed Safety Research Unit

8:00 AM - 10:15 AM

301 C/D

8:00 a.m. **Ruminant Nutrition II: Health Introduction**

8:05 a.m. 352 **Awardee Talk: Opportunities for Antioxidants and Plant-derived Polyphenols to Improve Ruminant Health and Productivity**

Frank R. Dunshea¹

¹The University of Melbourne

8:35 a.m. 330 **Developing a Leaky Gut Model in Growing Holstein Heifers Using Feed Restriction Followed by Alimentation to a High Concentrate Diet**

Jeffrey N. Carter¹, Sara K. Linneen², Nielson Baxter¹, Jacob Shields¹, Nathan Augspurger¹, Lance H. Baumgard³

¹MBRD Service Company, LLC, ²Elanco Animal Health, ³Iowa State University

8:50 a.m. 333 **Development of a 4-plex Quantitative PCR Assay for the Detection and Quantification of Species and Subspecies of Fusobacterium Necrophorum and Fusobacterium Varium in Bovine Rumen Fluid**

Alyssa K. Deters¹, T.G. Nagaraja², Jianfa Bai¹, Xiaorong Shi¹, Qing Kang¹

¹Kansas State University, ²Kansas State University College of Veterinary Medicine

9:05 a.m. 331 **Effects of On-arrival Application of a Modified-live Respiratory and Clostridia Vaccination on Health, Growth Performance, and Antibody Titers of Newly-weaned Calves**

Erin R. Gubbels¹, Forest L. Francis¹, Warren C. Rusche¹, Zachary K. Smith¹

¹South Dakota State University

9:20 a.m. **Ruminant Nutrition II: Break**

9:30 a.m. 329 **Effectiveness of Virginiamycin Administration on Animal Health and the Observed Impacts on Growth, Development, and Intake Dynamics in Growing and Finishing Calves**

Luiz Fernando Dias Batista ¹, Madeline E. Rivera ¹, Luis O. Tedeschi ¹

¹Texas A&M University

9:45 a.m. 328 **Effects of Supplemental Zinc Concentration and Source on Performance and Biomarkers of Immune Status in Receiving Steers**

Dathan T. Smerchek ¹, Jodi McGill ¹, Stephanie L. Hansen ¹

¹Iowa State University

10:00 a.m. 332 **Evaluating the Effects of Lactic Acid Adaptation in Beef Cattle Prior to an Acidosis Challenge**

Zachary Buessing ¹, Bree Gaffney ², Jenna McNelis ³, Haley F. Linder ¹, Sara M. Tondini ⁴, Joshua C. McCann ¹

¹University of Illinois at Urbana-Champaign, ²Western Illinois University, ³Illinois State University, ⁴University of Illinois

**Beef Species and Ruminant Nutrition Symposium I:
Historical and Current Estimates of Bovine Composition and Energetics**

Sponsored by Cactus Feeders, Inc.

Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC

8:00 AM - 12:00 PM

Ballroom B

8:00 a.m. **Beef Species and Ruminant Nutrition Symposium I Introduction**

8:05 a.m. 91 **Key Economic and Marketing Trends in Fed Cattle and High-quality Beef**

Katelyn McCulloch ¹, James Robb ¹

¹Livestock Marketing Information Center

8:45 a.m. 89 **Meat Science Perspective, Carcass Composition, and Grid Marketing: Have We Made Any Advances?**

Ty E. Lawrence ¹

¹West Texas A&M University

9:25 a.m. 92 **Management, Technology, and Growth Composition: Have They Affected Carcass End Goals?**

Zachary K. Smith ¹, Warren C. Rusche ¹

¹South Dakota State University

10:05 a.m. **Beef Species and Ruminant Nutrition Symposium I Break**

10:20 a.m. 90 **Evaluating the Difference Between Formulated Dietary Net Energy Values and Net Energy Values Determined from Growth Performance and Estimates of Shrunken Body Weight Gain in Finishing Beef Cattle**

Kristin E. Hales ¹, Michael Galyean ², Zachary K. Smith ³

¹Texas Tech University, ²Texas Tech University Department of Veterinary Medicine, ³South Dakota State University

11:00 a.m. 88 **How Can Industry Use Energy and Body Composition Predictions to Achieve Production Expectations?**

Ben P. Holland ¹
¹Cactus Feeders

11:40 a.m. **Beef Species and Ruminant Nutrition Symposium I Q&A**

Poster Session II-A

8:30 AM - 9:45 AM
Exhibit Hall A

8:30 a.m. PSII-A-1 **A Preliminary Study Examining Supplement and Medication Use in Rodeo Horses**

Jake A. Jenson ¹, Carolyn J. Hammer ², Jennifer M. Young ²
¹North Dakota State University, ²Department of Animal Sciences, North Dakota State University

8:30 a.m. PSII-A-2 **Correlations Between Reactive Oxygen Species and Functional Measurements of Spermatozoa from Beef Bulls**

Ian E. Batey ¹, Ashley R. Hartman ¹, Theresa J. Rathbun ¹, Abby L. Zezeski ², Tom W. Geary ², David M. Grieger ¹, Karol E. Fike ¹
¹Kansas State University, ²USDA-ARS

8:30 a.m. PSII-A-3 **Effect of Beef Breed Type Relative to Feedlot Performance, Feeding Behavior, and Carcass Characteristics**

Lillian L. Okamoto ¹, Caleb C. Reichhardt ¹, Anthony F. Alberto ¹, Laura A. Motsinger ², Sarah A. Bayles ¹, Bryce W. Roholt ¹, Matthew D. Garcia ¹, Kara J. Thornton ¹
¹Utah State University, ²Hill's Pet Nutrition

8:30 a.m. PSII-A-4 **Effects of Beef Cattle Breed Type and Steroid Hormones on Proliferation Rates of Bovine Satellite Cells**

Bailee Brown ¹, Laura A. Motsinger ², Caleb C. Reichhardt ¹, Gordon K. Murdoch ³, Brenda M. Murdoch ⁴, Matthew D. Garcia ¹, Kara J. Thornton ¹
¹Utah State University, ²Hill's Pet Nutrition, ³Washington State University, ⁴University of Idaho

8:30 a.m. PSII-A-5 **Effects of Time Postpartum and Late Gestational Nutrient Restriction on Beef Heifer Colostrum**

Kirby J. Latimer ¹, Abigail R. Rathert-Williams ², Colby A. Redifer ², Alejandro Rodriguez Zamora ¹, Thomas B. McFadden ³, Allison M. Meyer ²
¹Division of Animal Sciences, University of Missouri, ²University of Missouri, ³Division of Animal Science, University of Missouri

8:30 a.m. PSII-A-6 **Evaluation of Maternal Plane of Nutrition and Selenium Supplementation on the Neonatal Fragment Crystallizable Receptor (FcRn) in Ewe Mammary Tissue**

Rachel A. Voigt ¹, Carolyn J. Hammer ², Maverick C. Guenther ¹, Pawel P. Borowicz ¹, Tammi L. Neville ³, Tara J. Swanson ¹, Kimberly A. Vonnahme ⁴, Dale A. Redmer ¹, Larry P. Reynolds ¹, Joel S. Caton ¹
¹North Dakota State University, ²Department of Animal Sciences, North Dakota State University, ³USDA- NIFA, ⁴Zoetis

8:30 a.m. PSII-A-7 **Evaluation of Technician Skill Level Effect on Ultrasonic Estimates of Body Composition in Feedlot Heifers**

Nerissa Bechtol Wuest¹, Noah P. Jesko¹, Tommy L. Perkins¹
¹West Texas A&M University

8:30 a.m. PSII-A-8 **Examining the Effects of Providing Injectable Mineral, Oral Mineral or Both to High-risk Calves Relative to Weight Gain, Ribeye Area and Backfat Thickness**

Zachary C. Crump¹, Anthony F. Alberto¹, Bailee Brown¹, Laura A. Motsinger², Caleb C. Reichhardt¹, Bryce W. Roholt¹, Kerry Rood¹, Matthew D. Garcia¹, Brett Bowman¹, Kara J. Thornton¹
¹Utah State University, ²Hill's Pet Nutrition

8:30 a.m. PSII-A-10 **Impact of Altered Photoperiod on Colostral Iga and Lactoferrin in Dairy Cattle**

Andrea Connor¹, Kayla J. Alward¹, Alison Duncan¹, Rebecca Cockrum¹
¹Virginia Tech

8:30 a.m. PSII-A-11 **Suppressing the CXCL12-CXCR4 Chemokine Axis at the Fetal-maternal Interface During Implantation Results in Altered Expression of Inflammatory Cytokines in Ovine Placenta at Midgestation**

Jillian M. Hughes¹, Cael N. Alderete¹, Ryan L. Ashley¹
¹New Mexico State University

Growth and Development

Chair: Steven Zinn, Dept. of Animal Science, University of Connecticut
8:30 AM - 10:20 AM
209 A/B

8:30 a.m. **Growth and Development Introduction**

8:35 a.m. 204 **Awardee Talk: Poor Maternal Nutrition Impacts Metabolic Factors and Glucose Tolerance in Sheep Offspring**

Nicole M. Tillquist¹, Amanda S. Reiter¹, Mia Y. Kawaida¹, Brandon I. Smith¹, Sarah A. Reed², Steven A. Zinn², Kristen E. Govoni²
¹University of Connecticut, ²Dept. of Animal Science, University of Connecticut

9:05 a.m. 206 **Efficacy of Using Ammonium Chloride Supplements During Crisis Management to Stop Growth in Various Ages of Pigs**

Kadence M. Walsh¹, Brittney P. Kokinos¹, Mariola Grez Capdeville¹, Laura A. Amundson¹, Andrew W. Stevens², Jean-Paul Chavas², Thomas D. Crenshaw¹
¹Department of Animal and Dairy Sciences, University of Wisconsin-Madison, ²Department of Agricultural and Applied Economics, University of Wisconsin-Madison

9:20 a.m. 203 **Estradiol Improves Proliferation and Protein Synthesis Rates of Primary Bovine Satellite Cells by Altering mRNA Abundance Related to Amino Acid and Micronutrient Metabolism**

Caleb C. Reichhardt¹, Lillian L. Okamoto², Laura A. Motsinger², Nikole E. Ineck², Kara J. Thornton²
¹University of Hawai'i at Mānoa, ²Utah State University

9:35 a.m. 205 **Exposure to Heat Stress Stimulates Cell Proliferation and Heat Shock Protein Expression in Bovine Primary Satellite Cells**

WonSeob Kim¹, Erika P. Eckhardt¹, Jongkyoo Kim¹

¹Michigan State University

9:50 a.m. 207 **Awardee Talk: The Impact of Disease on Nutrient and Energy Intake and Utilization to Support Lean Tissue Accretion in Growing Pigs**

Nicholas K. Gabler¹

¹Iowa State University

**Physiology and Endocrinology Symposium:
The Paternal Contribution to Development Programming**

Chair: Joel Caton, North Dakota State University

8:30 AM - 11:00 AM

205 A/B

8:30 a.m. **Physiology and Endocrinology Symposium Introduction**

8:35 a.m. 303 **Overview of Paternal Programming in Livestock Species**

Carl R. Dahlen¹, Joel S. Caton¹, Wellison Diniz², Lawrence P. Reynolds¹, Alison K. Ward¹

¹North Dakota State University, ²Auburn University

9:20 a.m. 304 **The Paternal Programming of Periconception Development**

Hannah L. Morgan¹, Adam Watkins¹

¹University of Nottingham

10:05 a.m. **Physiology and Endocrinology Symposium Break**

10:15 a.m. 302 **Implications of the Paternal Environment for Future Generations**

Janice L. Bailey¹

¹Fonds de recherche du Québec - Nature et technologies

Physiology and Endocrinology I: Metabolism, Endocrine, and/or Stress Interactions

Chair: Amy Biddle, University of Delaware

8:30 AM - 11:15 AM

207 A/B

8:30 a.m. **Physiology and Endocrinology I: Metabolism, Endocrine, and/or Stress Interactions Introduction**

8:35 a.m. 278 **Awardee Talk: Progesterone Regulates the Abundance of mRNAs and Proteins Involved in Polyamine Metabolism in the Sheep Endometrium**

Katherine M. Halloran¹, Emily Hoskins¹, Claire Stenhouse¹, Robyn Moses¹, Michael C.

Satterfield¹, Kathrin Dunlap¹, Heewon Seo¹, Greg Johnson¹, Guoyao Wu¹, Fuller W. Bazer¹

¹Texas A&M University

9:05 a.m. 282 **Metabolic and Endocrine Changes in Dairy Cows Fed Different Diets at Dry-off**

Pascaline Jermann¹, Dominik Fritsche¹, Lea Wagner¹, Olga Wellnitz¹, Rupert M. Bruckmaier¹, Josef J. Gross¹

¹Veterinary Physiology, Vetsuisse Faculty, University of Bern

9:20 a.m. 283 **Quercetin Antagonizes Tall Fescue Toxicosis-induced Cardiovascular Toxicity in Lamb (*Ovis Aries*) via Modulating PGC-1 α Mediated Mitochondrial Biogenesis**

Yan Huang¹, Jing Ge², yongjie Wang¹, Sarah Shelby¹, Palika Dias-Morse³, Ken P. Coffey¹

¹University of Arkansas, ²Northeast Agricultural University, ³University of Arkansas Fayetteville

9:35 a.m. 284 **Gut and Skeletal Muscle Control the Effect of Low Protein Diets on Feed Intake and Thermal Radiation of Broilers During Experimentally Induced Heat Stress**

Julia Sutton¹, Mohammad Habibi¹, Cedrick n. Shili¹, Ali Beker¹, Jacob Burch-Konda¹, Janeen L. Salak-Johnson², Andrew P. Foote², Adel Pezeshki¹

¹Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078,

²Oklahoma State University

9:50 a.m. 285 **Effect of Low Protein Diets on Oxidative Stress, Plasma Metabolomics and Cecal Microbiome of Broiler Chickens During Experimentally Induced Heat Stress**

Julia Sutton¹, Mohammad Habibi¹, Cedrick n. Shili¹, Adel Pezeshki¹

¹Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078

10:05 a.m. **Physiology and Endocrinology I: Metabolism, Endocrine, and/or Stress Interactions Break**

10:15 a.m. 280 **The Effect of Bromocriptine Mesylate and Heat Stress on Innate and Adaptive Immune Function in Beef Cattle**

Joshua M. Zeltwanger¹, Eric Bailey¹, Don Spiers¹, Emily A. Petzel¹, Benjamin Nelson², Derek W. Brake¹

¹University of Missouri, ²Animal

10:30 a.m. 279 **Identification of Potential Biomarkers of Reproductive Development in Vaginal Gene Expression Associated with Serum Concentrations of Reproductive Hormones at Key Periods in Gilt Development**

Shannon L. Dierking¹, Jodi Morton², Juan Carlos Pinilla³, Michael Gonda¹, Hossein Rekabdarkolae¹, Jeffrey A. Clapper¹, Crystal L. Levesque¹

¹South Dakota State University, ²Southern University & A&M College, ³PIC North America

10:45 a.m. 281 **The Relationship Between Postnatal Hormone Concentrations and the Development of Boar Taint at Puberty**

Christine Bone¹, E. James Squires¹

¹University of Guelph

11:00 a.m. 277 **Live Animal Mitochondrial Markers During the Feedlot Phase Are Related to Meat Quality in Angus but Not Brahman Steers**

Pier L. Semanchik¹, Lauren T. Wesolowski², Jessica L. Simons¹, Chloey Guy³, Audrey L. Earnhardt-San¹, George A. Perry⁴, Charles R. Long⁵, Dustin Law⁶, Don A. Neuendorff⁶, Ronald D. Randel⁴, Tanner J. Machado⁷, Thomas H. Welsh¹, Sarah H. White-Springer⁸

¹Texas A&M University and AgriLife Research, Department of Animal Science, ²Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research, ³Texas A&M AgriLife Research Center, Overton, ⁴Texas A&M AgriLife Research, Overton, TX, ⁵School of Veterinary Medicine and Biomedical Sciences, Texas A&M University, ⁶Texas A&M AgriLife Research Overton, ⁷Texas A&M University-Kingsville, Department of Animal Science and Veterinary Technology, ⁸Department of Animal Science, Texas A&M University; Texas A&M AgriLife Research

Meat Science and Muscle Biology

Chair: Mahesh Nair, Colorado State University

8:30 AM - 11:45 AM

302A

8:30 a.m. **Meat Science and Muscle Biology Introduction**

8:35 a.m. 224 **Awardee Talk: Investigating Muscle Fiber Hypertrophy during Pre- and Post-natal Growth**

Susan K. Duckett¹, Maslyn A. Greene¹

¹Clemson University

9:05 a.m. 232 **Examination of miRNA Mimics and Inhibitors on Satellite Cell Proliferation in vitro**

Maslyn A. Greene¹, Susan K. Duckett¹

¹Clemson University

9:20 a.m. 234 **MicroRNA-199a-3p Does Not Alter Stearyl-CoA Desaturase Expression In vitro**

Aliute-Nkoyo S. Udoka¹, Susan K. Duckett¹

¹Clemson University

9:35 a.m. 233 **Comparison of Intramuscular Fat Deposition in Different Muscles of Beef Cattle**

Noah P. Jesko¹, John T. Richeson¹, Ty E. Lawrence¹, Tommy L. Perkins¹

¹West Texas A&M University

9:50 a.m. 227 **frizzled7 Mediates Lysine-activated β -catenin to Promote Satellite Cells in Manipulating Skeletal Muscle Growth**

Chenglong Jin¹, Mao Ye², Zhi-wen Song², Chun-qi Gao², Hui-chao Yan², Xiu-qi Wang³

¹#1, No.1 Dafeng Street, Tianhe District, Guangzhou City, Guangdong Province, China,

²College of Animal Science, South China Agricultural University, ³College of Animal Science, South China Agricultural University

10:05 a.m. **Meat Science and Muscle Biology Break**

10:15 a.m. 228 **Metabolite Differences Between the Oxygen-exposed and Non-oxygen Exposed Surfaces of the Longissimus Lumborum Muscle**

Morgan Denzer¹, Morgan Pfeiffer¹, Gretchen G. Mafi¹, Ranjith Ramanathan¹
¹Oklahoma State University

10:30 a.m. 229 **Effects of High-pressure Processing on Cooked Color and Sensory Attributes of Dark-cutting Beef**

Cole Reesman¹, Morgan Denzer¹, Gary Sullivan², Mary-Grace Danao², Morgan Pfeiffer¹, Gretchen G. Mafi¹, Ranjith Ramanathan¹
¹Oklahoma State University, ²University of Nebraska-Lincoln

10:45 a.m. 230 **Association of Lung Health with Carcass Performance**

Becca B. Grimes¹, Travis C. Tennant¹, Ty E. Lawrence¹
¹West Texas A&M University

11:00 a.m. 231 **Electrical Conductivity, Color, and Tenderness Values of Fresh and/or Cooked Beef**

Carolina Mesquita¹, Carl Richardson¹, Christopher Kerth², Pratheesh Sudhakaran¹, Ana Villanueva¹
¹Texas State University, ²Texas A&M University

11:15 a.m. 225 **Effects of Supplementing a Live Yeast Supplement in Pre-weaning and Finishing Diets of Holstein Bull Calves on Meat Production and Quality**

Sarah J. Davies¹, Giulia Esposito², Cletos Mapiye¹, Clothilde Villot³, Eric Chevaux³, Emiliano Raffrenato¹
¹Stellenbosch University, ²Department of Veterinary Medicine, University of Parma, Parma, Italy, ³Lallemand SAS

11:30 a.m. 226 **Proteomic and Metabolomic Profiles Are Associated with Fresh Pork Loin Quality Phenotypes**

Logan Johnson¹, Chaoyu Zhai², Elisabeth Huff Lonergan¹, Ken Prusa¹, Jessica Prenni³, Jacqueline Chaparro³, Steadham Edward¹, Mahesh Nair³, Steven M. Lonergan¹
¹Iowa State University, ²University of Connecticut, ³Colorado State University

Poster Session II-B

8:45 AM - 9:45 AM

Exhibit Hall A

8:45 a.m. PSII-B-18 **açai Seed as Fiber Source on Intake, Digestibility and Ruminant Parameters in Zebu Beef Cattle Fed a High Concentrate Diet**

Rafael Mezzomo¹, Natalia G. Lacerda², Terry E. Engle³, Kaliandra Souza S. Alves⁴, Luis Rennan S. Oliveira², Julian Andrés C. Vargas², Letícia S. Sousa², Kalita Gabrielly S. Coelho², Shara Amélia S. Bisbo², Silvana S. Lima², Mariana Mirtes L. Gama², Daiany I. Gomes⁵
¹Colorado State University, ²Federal Rural University of Amazon, ³Colorado State University, ⁴University of Florida, ⁵Universidade Federal Rural da Amazônia-UFRA

8:45 a.m. PSII-B-19 **Adaptation Periods Protocol for Nellore Cattle in Intensive Pasture Finishing**

Daniel I. C. G. Gouvêa¹, Maria B. Niehues², Alexandre Perdigão³, Victor Valério de Carvalho⁴, Tiago S. S. Acedo⁵, Guilherme S. F. M. Vasconcellos⁶, Gustavo V. Polycarpo⁷, Cyntia L. L. Martins¹, Mário B. D. B. Arrigoni¹

¹São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, ²São Paulo State University, Botucatu, Brazil, ³DSM Nutritional Products Brazil, ⁴dsm-firmenich, ⁵DSM Nutritional Products, ⁶DSM Nutritional Products A.S, SP, Brazil, ⁷São Paulo State University (Unesp), FCAT Dracena, SP, Brazil

8:45 a.m. PSII-B-20 **Altering the Particle Size of Supplemental Zeolite (clinoptilolite) in Finishing Cattle Diets: Manure Characteristics and Ammonia Emissions**

Cheyenne A. Myers¹, Mario de Haro Marti¹, Mireille Chahine¹, Gwinyai E. Chibisa¹
¹University of Idaho

8:45 a.m. PSII-B-12 **Association of Glucose Metabolism with Feed Intake, Growth, and Efficiency of Beef Steers**

Andrew P. Foote¹, Carlee M. Salisbury¹, Matthew R. Beck², Dagan Montgomery¹, Abigail R. Rathert-Williams³, Mindy E. King¹

¹Oklahoma State University, ²USDA-ARS, ³University of Missouri

8:45 a.m. PSII-B-13 **Bacterial Composition of the Rumen Microbiome with a Bacillus Probiotic Added to the Diet of Feedlot Cattle**

Dina A. Linde¹, Lindeque du Toit¹, Dirkjan Schokker², Este van Marle-Koster¹

¹University of Pretoria, ²Wageningen Livestock Research, Wageningen University and Research

8:45 a.m. PSII-B-14 **Combination of Essential Oils, α -amylase and 25-hydroxy-vitamin-d3 Increases Performance by Feedlot Cattle on Adaptation Period**

Maria B. Niehues¹, Alexandre Perdigão², Hugo L. Lenon Correa³, Victor Valério de Carvalho⁴, Guilherme S. F. M. Vasconcellos⁵, Tiago S. S. Acedo⁶, Cyntia L. L. Martins³, Mário B. D. B. Arrigoni³

¹São Paulo State University, Botucatu, Brazil, ²DSM Nutritional Products Brazil, ³São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, ⁴dsm-firmenich, ⁵DSM Nutritional Products A.S, SP, Brazil, ⁶DSM Nutritional Products

8:45 a.m. PSII-B-15 **Composition of Milk as Explained by Rumen Fermentation Parameters, Diet Composition and Combination**

Sathya Sujani¹, Robin R. White²

¹Department of Animal & Poultry Sciences, Virginia Tech, ²Virginia Tech School of Animal Sciences

8:45 a.m. PSII-B-21 **Does Prior Viral Infection Exacerbate the Response to Heat Stress?**

Edith J. Mayorga-Lozano¹, Sonia Rodriguez-Jimenez¹, Lance H. Baumgard¹

¹Iowa State University

8:45 a.m. PSII-B-16 **Effect of Calcium Gluconate Embedded in a Hydrogenated Fat Matrix on Performance and Carcass Characteristics of Finishing Beef Heifers**

Daniel M. Watanabe ¹, John Doelman ², Dave J. Seymour ², M V. Sanz-Fernandez ², Oscar Lopez-Campos ³, Nuria Prieto ⁴, Greg B. Penner ¹

¹Department of Animal and Poultry Science, University of Saskatchewan, ²Trouw Nutrition R&D,

³Agriculture and Agri Food Canada, Science and Technology Branch, ⁴Agriculture and Agri-Food Canada

8:45 a.m. PSII-B-17 **Effect of Corn Grain Processing and Moisture Content in Finishing Diets Formulated to Meet Rumen Degradable Protein Requirements on Feedlot Cattle Performance**

Lucas González ¹, Sergio Viano ², Patricio Davies ³, Daniel G. Méndez ², Gustavo Jaurena ⁴, José Arroquy ⁵, Juan C. Elizalde ⁶, Irene Ceconi ²

¹Instituto Nacional de Tecnología Agropecuaria, Estación Experimental Agropecuaria de General Villegas, Buenos Aires, Argentina; Consejo Nacional de Investigaciones Científicas y Técnicas, Ciudad Autónoma de Buenos Aires, Argentina; Universidad de Buenos Aires, Facultad de Agronomía, Ciudad Autónoma de Buenos Aires, Argentina, ²Instituto Nacional de Tecnología Agropecuaria, Estación Experimental Agropecuaria de General Villegas, Buenos Aires, Argentina, ³Instituto Nacional de Tecnología Agropecuaria, ⁴Universidad de Buenos Aires, Facultad de Agronomía, Ciudad Autónoma de Buenos Aires, Argentina, ⁵Instituto Nacional de Tecnología Agropecuaria; Universidad Nacional del Sur, ⁶Elizalde & Riffel private consultants, Rosario, Santa Fe, Argentina

Small Ruminant Symposium: Current Status of Genomics Research in Sheep

Chair: Raluca G. Mateescu, University of Florida; Christian Posbergh, Montana State University

9:00 AM - 11:00 AM

206 A/B

9:00 a.m. **Small Ruminant Symposium Introduction**

9:05 a.m. 377 **Derivation and Use of Genomic Enhanced Estimated Breeding Values for Selection in Sheep**

Ronald M. Lewis ¹, Daniel J. Brown ²

¹Department of Animal Science, University of Nebraska-Lincoln, ²Animal Genetics and Breeding Unit (A Joint Venture of the NSW Department of Primary Industries and University of New England), University of New England

9:25 a.m. 378 **Characterizing Functional Genetic Regulatory Elements in Sheep Reference Genome**

Brenda M. Murdoch ¹, Kimberly M. Davenport ¹, Shangqian Xie ¹, Mazdak Salavati ², Emily Clark ², Alan Archibald ³, Stephen N. White ⁴, Michelle R. Mousel ⁵, Kim Worley ⁶, Suraj Bhattarai ⁷, Stephanie D. McKay ⁸, Alex Caulton ⁹, Shannon Clarke ⁹, Rudiger Brauning ⁹, Tracy Hadfield ¹⁰, Benjamin D. Rosen ¹¹, Timothy Smith ¹¹, Noelle Cockett ¹⁰

¹University of Idaho, ²The University of Edinburgh, ³University of Edinburgh, ⁴Washington State University, ⁵USDA Agricultural Research Service, Washington State University, ⁶Baylor College of Medicine, ⁷University of Vermont, ⁸Department of Animal and Veterinary Sciences, University of Vermont, United States of America., ⁹University of Otago, New Zealand, ¹⁰Utah State University, ¹¹USDA

9:45 a.m. 379 **Characterization of Genomic Diversity in Sheep Populations Based On Complementary Metrics and Its Implications for Genomic Selection**

Luiz F. Brito ¹

¹Purdue University

10:05 a.m. 376 **Genetic Approaches to Improve Reproductive Performance in the U.S. Sheep Industry**

Tom W. Murphy ¹

¹USDA ARS U.S. Meat Animal Research Center

10:25 a.m. 375 **Genomic Approaches for Feed Efficiency in Sheep**

Christian Posbergh ¹, Daniel Schaub ¹

¹Montana State University

10:45 a.m. **Small Ruminant Symposium Discussion**

Contemporary and Emerging Issues Symposium:

Public Policy: Infrastructure Needs for Advancing Research in Animal Agriculture

Chair: Penny Riggs, Department of Animal Science, Texas A&M University, and Texas A&M AgriLife Research

9:00 AM - 12:00 PM

208 A/B

9:00 a.m. **Contemporary and Emerging Issues Symposium: Public Policy Introduction**

9:05 a.m. 399 **Contemporary and Emerging Issues Symposium: Public Policy Keynote**

Douglas Steele ¹

¹Food, Agriculture, & Natural Resources (FANR)

9:50 a.m. **Contemporary and Emerging Issues Symposium: Public Policy Instructions**

10:00 a.m. **Contemporary and Emerging Issues Symposium: Public Policy Breakout Group 1**

10:30 a.m. **Contemporary and Emerging Issues Symposium: Public Policy Breakout Group 2**

11:00 a.m. **Contemporary and Emerging Issues Symposium: Public Policy Panel Discussion**

Douglas Steele ¹, Kenneth Sewell ², Deb Hamernik ³, Erdogan Memili ⁴, John Blanton ⁵

¹Food, Agriculture, & Natural Resources (FANR), ²Oklahoma State University, ³Institute of Food Production and Sustainability, USDA NIFA, ⁴Prairie View A&M University, ⁵Purdue University

Ruminant Nutrition III: Additives

Chair: Jhones Sarturi, Texas Tech University

10:15 AM - 12:20 PM

301 A/B

10:15 a.m. **Ruminant Nutrition III: Additives Introduction**

10:20 a.m. 337 **Effects of Dietary Supplementation of *Saccharomyces Cerevisiae*-based Microbial Additive Containing Fermentation Products on Health, and Performance of Weaned Beef Steers During a 35-d Receiving Period**

Modoluwamu Idowu¹, Godstime A. Taiwo¹, Ibukun M. Ogunade¹, Andres A. Pech-Cervantes²
¹West Virginia University, ²Fort Valley State University

10:35 a.m. 339 **Growth Performance and Carcass Characteristics of Feedlot Beef Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures**

Alejandra M. Lopez¹, Jhones O. Sarturi¹, Darren D. H. Henry², Francine M. Messias Ciriaco², Bradley J. Johnson¹, Dale R. Woerner¹, Kaliu G. Silva¹, Kaue Tonelli Nardi¹, Camron J. Rush¹, Barbara Rodrigues¹, Sarah Peters¹, Mikala Di Manna³, Andrea M. Osorio-Doblado², Kymberly Coello², Angel A. Quijada²

¹Texas Tech University, ²University of Georgia, ³New Mexico State University

10:50 a.m. 340 **Growth Performance and Carcass Characteristics of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System**

Camron J. Rush¹, Jhones O. Sarturi¹, Darren D. H. Henry², Francine M. Messias Ciriaco², Dale R. Woerner¹, Nelson O. Huerta-Leidenz¹, Whitney L. Crossland¹, Alejandra M. Lopez¹, Kaliu G. Silva¹, Kaue Tonelli Nardi¹, Sarah Peters¹, Mikala Di Manna³, Jordan Hinds¹, Yasmim Saes¹, Andrea M. Osorio-Doblado², Kymberly Coello², Angel A. Quijada²

¹Texas Tech University, ²University of Georgia, ³New Mexico State University

11:05 a.m. 342 **Effects of Direct Fed Microbial Mixtures on Beef Cattle Ruminal Fermentation Characteristics, Intake, and Nutrient Digestibility**

Kaliu G. Silva¹, Jhones O. Sarturi¹, Darren D. H. Henry², Bradley J. Johnson¹, Alejandra M. Lopez¹, Barbara Rodrigues¹, Kaue Tonelli Nardi¹, Camron J. Rush¹, Sarah Peters¹, Angela Camarillo¹, Ashleigh Wilson¹

¹Texas Tech University, ²University of Georgia

11:20 a.m. 338 **The Impact of an *Aspergillus Oryzae* Prebiotic on Mineral Bioavailability in Multiparous Beef Cows Supplemented with Vitaferm Concept-aid**

Federico Podversich¹, Tessa M. Schulmeister¹, Federico Tarnonsky¹, Gastón Alfaro², Gleise Da Silva³, Juan Vargas¹, Araceli B. Maderal¹, Angela M. Gonella¹, Ignacio R. Ipharraguerre⁴, Nicolas DiLorenzo⁵

¹University of Florida, ²Auburn University, ³University of Alberta, ⁴Christian Albrechts University of Kiel, ⁵Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

11:35 a.m. 335 **25-hydroxyvitamin D3 Associated with Essential Oils and α -amylase Increases the Performance of Cattle in Intensive Pasture finishing**

Daniel I. C. G. Gouvêa¹, Maria B. Niehues², Alexandre Perdigão³, Victor Valério de Carvalho⁴, Tiago S. S. Acedo⁵, Guilherme S. F. M. Vasconcellos⁶, Gustavo V. Polycarpo⁷, Cyntia L. L. Martins¹, Mário B. D. B. Arrigoni¹

¹São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, ²São Paulo State University, Botucatu, Brazil, ³DSM Nutritional Products Brazil, ⁴dsm-firmenich, ⁵DSM Nutritional Products, ⁶DSM Nutritional Products A.S, SP, Brazil, ⁷São Paulo State University (Unesp), FCAT Dracena, SP, Brazil

11:50 a.m. 341 **Effects of Supplemental Betaine on Protein Deposition and Plasma Amino Acid Concentrations in Growing Steers with Modulated Methyl Group Status**

Madeline S. Grant¹, Jessica M. Marsh², Kathryn J. Hazlewood², Matt D. Miesner³, Evan C. Titgemeyer¹

¹Kansas State University, ²Department of Animal Sciences and Industry, Kansas State University, ³Department of Clinical Sciences, Kansas State University

12:05 p.m. 336 **Anavrin®, Monensin or Both on the Diet of Finishing Steers Fed TMR? Effect on Performance and Rumen Fermentation**

Eliana Y. Ciancio Bruni Falero¹, Álvaro Santana², Hugo Diez¹, Emanuel Longueira¹, Dermidio M. Hernández¹, José Luis Repetto², Cecilia Cajarville³

¹Instituto de Producción Animal, Facultad de Veterinaria, Universidad de la República, Ruta 1 km 42.5, San José, Uruguay, ²Unidad Académica de Bovinos, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay, ³Unidad Académica de Nutrición Animal, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay

Ruminant Nutrition V: Calf Nutrition and Management

Chair: Robin Anderson, USDA/ARS, Southern Plains Agricultural Research Center's Food & Feed Safety Research Unit

10:45 AM - 12:20 PM

301 C/D

10:45 a.m. **Ruminant Nutrition V: Calf Nutrition and Management Introduction**

10:50 a.m. 357 **The Effects of Colostrum Consumption and Feed Restriction on Performance, Energy Balance, and Behavior in Unweaned Male Holstein Calves Being Marketed and Transported**

Lucía Pisoni¹, Maria Devant², Anna Bassols³, Joan Pujols⁴, Yolanda Saco³, Nestor Gomez³, Sonia Marti²

¹IRTA-Ruminant Production, ²IRTA, Ruminant Production, ³UAB- Faculty of Veterinary Science, Department of Biochemistry and Molecular Biology, ⁴IRTA-Animal Health

11:05 a.m. 358 **Gastrointestinal Permeability in Unweaned Male Holstein Calves: Colostrum Consumption and Feed Restriction Matters**

Lucía Pisoni¹, Maria Devant², Anna Bassols³, Joan Pujols⁴, Yolanda Saco³, Nestor Gomez³, Sonia Marti²

¹IRTA-Ruminant Production, ²IRTA, Ruminant Production, ³UAB- Faculty of Veterinary Science, Department of Biochemistry and Molecular Biology, ⁴IRTA-Animal Health

11:20 a.m. 355 **Growth Performance of Neonatal Holstein Heifer Calves Fed Milk Containing Essential Oil Blend And/or Encapsulated Butyrate**

Ting Liu ¹, Luo Zhihao ¹, Peng Li ¹, Jianping Wu ¹, David P. Casper ²

¹Gansu Agricultural University, ²Casper's Calf Ranch

11:35 a.m. 356 **Neonatal Holstein Calves Fed a Pelleted Calf Starter Containing a Botanical Extract and Direct Fed Microbial Alone or in Combination**

David P. Casper ¹, Lydia K. Olagunju ², Uchenna Y. Anele ², Michael Officer ³, Keith Klanderman ⁴

¹Casper's Calf Ranch, ²North Carolina Agricultural and Technical State University, ³Pacer Technology, ⁴Adisseo Inc.

11:50 a.m. 353 **Neonatal Holstein Calves Fed a Pelleted Calf Starter Containing a Botanical Extract and Direct-fed Microbial (DFM) Alone or in Combination Without or with Milk Replacer DFM**

David P. Casper ¹, Lydia K. Olagunju ², Uchenna Y. Anele ², Michael Officer ³, Keith Klanderman ⁴

¹Casper's Calf Ranch, ²North Carolina Agricultural and Technical State University, ³Pacer Technology, ⁴Adisseo Inc.

12:05 p.m. 354 **Evaluation of Protein Encapsulated Fat (PEF) Alternatives for Neonatal Calves**

David P. Casper ¹

¹Casper's Calf Ranch

Poster Session III

12:00 PM - 1:15 PM

Exhibit Hall A

12:00 p.m. PSIII-18 **Effect of Various Adaptogens on the Amino Acid and Fatty Acid Composition of the Longissimus Dorsi Muscle from Kazakh White-headed Bulls**

Jela Tepavcevic ¹, Ruzel Khabibullin ², Irina Mironova ², Ilvir Khabibullin ², Lyudmila Nikolaeva ², Irina Vasilyeva ³

¹University of Belgrade, ²Bashkir State Agrarian University, ³Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University)

12:00 p.m. PSIII-4 **Evaluating Potential Interactive Effects of the IGF2 intron3 g.3072a Substitution and Myostatin Loss-of-function on Growth in Mice**

Xuenan Chen ¹, Anna Dilger ², Jonathan Beever ³

¹University of Illinois, ²University of Illinois at Urbana-Champaign, ³University of Tennessee Institute of Agriculture

12:00 p.m. PSIII-5 **Evaluation of GnRH Administration Day in the 7 & 7 Synch Protocol for Fixed-timed Artificial Insemination in Multiparous Beef Cows**

Wyatt E. Weber¹, Jeremy G. Powell², Brittini P. Littlejohn³, Bernard W. Krumpelman⁴, Nate T. Moss⁵, M. S. Gadberry⁶, Charles R. Looney¹

¹University of Arkansas, ²University of Arkansas System Division of Agriculture, ³University of Arkansas System, Division of Agriculture, Department of Animal Science, ⁴University of Arkansas, Division of Agriculture, Department of Animal Science, ⁵UA Livestock and Forestry Station, ⁶University of Arkansas, Livestock Research and Forestry Station

12:00 p.m. PSIII-6 **Evaluation of Later Timepoints for Fixed-time Artificial Insemination of Beef Heifers When Using Sex-sorted Semen Following the 14-d CIDR®-PG Protocol**

Genevieve VanWye¹, Emily G. Smith¹, Carson M. Oney¹, Christine Spinka¹, Scott E. Pook¹, Jordan M. Thomas¹

¹University of Missouri

12:00 p.m. PSIII-7 **Evaluation of Maternal Selenium Supplementation and Plane of Nutrition During Gestation on the Neonatal Fc Receptor (FcRn) in Lamb Intestinal Tissue**

Maverick C. Guenther¹, Carolyn J. Hammer², Rachel A. Voigt¹, Pawel P. Borowicz¹, Tammi L. Neville³, Kimberly A. Vonnahme⁴, Dale A. Redmer¹, Larry P. Reynolds¹, Joel S. Caton¹

¹North Dakota State University, ²Department of Animal Sciences, North Dakota State University, ³USDA- NIFA, ⁴Zoetis

12:00 p.m. PSIII-8 **Evaluation of Reproductive Efficiency of Holstein Nulliparous Heifers Carrying the SLICK1 Mutation of the Prolactin Receptor (PRLR) Gene**

Allie T. Carmickle¹, Anna C. Denicol¹

¹University of California, Davis

12:00 p.m. PSIII-19 **Growth Performance, Carcass Traits, and Meat Quality of Pigs from Divergent Groups for Pork Loin Tenderness**

Gabryella Luiza F. São José¹, Amoracyr José C. Nuñez¹, Luiz F. Brito², Allan P. Schinckel², Vanessa Liviana A. Pereira¹, Albino Luchiani Filho³, Adriana S. do Carmo¹, Aline Cesar⁴, Vivian V. Almeida¹

¹Department of Animal Science, Federal University of Goiás, Goiânia, GO, Brazil, ²Purdue University, ³LinBife, Piracicaba, SP, Brazil, ⁴Department of Agri-Food Industry, Food and Nutrition, University of São Paulo, Piracicaba, SP, Brazil

12:00 p.m. PSIII-9 **Hempseed Meal as an Effective Protein Supplement for Finishing Wethers**

Mercer Butts¹, Harrison D. Hallmark², Roderick Gonzalez Murray³, Leeroy Lente¹, Octavio Guimaraes¹, Gabriel Garcia¹, meghan P. Thorndyke¹, Jasmine A. Dillon¹, Shawn L. Archibeque¹

¹Colorado State University, ²Colorado State University, Department of Animal Sciences, ³researcher

12:00 p.m. PSIII-1 **Impact of Low Levels of Tannin Supplementation on Enteric Methane Emissions and Performance in Organic Dairy Heifers**

Ashley K. Schilling¹, Lauren K. Newman², Mesa B. Kutz², Samantha M. Clark², Logan R. Thompson¹, Kim R. Stackhouse-Lawson³

¹Colorado State University AgNext, ²Colorado State University, ³AgNext, Colorado State University

12:00 p.m. PSIII-10 **Modified-live Virus Respiratory Vaccines and Bovine Respiratory Disease Influence the Respiratory Microbiome of Cattle**

Taylor McAtee¹, Sherri Powledge¹, Lee Pinnell², Paul Morley², John T. Richeson¹
¹West Texas A&M University, ²Texas A&M University

12:00 p.m. PSIII-12 **Palatability of Hempseed Meal Pellets Compared to Mainstream Feedstuffs in Horses**

Ryon W. Springer¹, Teighlor D. Cross², Cheyenne, A. C. Mason², Kallyn S. Ciesynski², Lillian F. Esterl-Byrne², Caitlan C. Thorne², Kimberly A. Guay¹, Kimberly B. Wellmann¹, Trinetta N. Jones¹

¹Department of Animal Science, Tarleton State University, ²Tarleton State University

12:00 p.m. PSIII-13 **Performance and Resiliency of Lactating Does and Their Kids in Woodlands with Supplemental Feedstuffs or Grazing**

Bhuvan Shrestha¹, Uma Karki¹, Santoshi Chaudhary¹, Anand Tiwari², Lila B. Karki³
¹Tuskegee University, ²University of Maryland, ³University of Maryland Eastern Shore

12:00 p.m. PSIII-14 **Reproductive Microbiome and Cytokine Profiles of Postpartum Beef Cows in Relation to Fertility**

Molly S. Smith¹, Kyle J. Hickman-Brown¹, Brooke E. McAnally¹, Ramiro V. Oliveira¹, Gabriela Dalmaso¹, Ky G. Pohler¹, Rebecca K. Poole¹

¹Texas A&M University

12:00 p.m. PSIII-15 **Standardized Amino Acid Digestibility and Protein Quality of Mealworm-based Ingredients Using the Precision-fed Cecectomized Rooster Assay**

Meredith Smola¹

¹University of Illinois at Urbana-Champaign

12:00 p.m. PSIII-20 **The Effect of Waiting Time at the Lairage of Slaughterhouse of Fattening Bulls After a Long Transport on Animal Behavior, Carcass Quality and Meat Quality**

Denise Pamela Sanchez¹, Joel González González², Guillem De Planell³, Eliseu Isla⁴, Sara Bover⁵, Maria Font², Maria Devant⁶, Sonia Martí⁶

¹IRTA-Ruminant Production, ²IRTA-Food Quality and Technology, ³Grup Viñas, ⁴Cooperativa d'Ivars, ⁵IRTA-Food Safety and Functionality, ⁶IRTA, Ruminant Production

12:00 p.m. PSIII-16 **The Influence of Olive Byproduct Supplementation on American Wagyu Feedlot Performance and Carcass Characteristics**

Briana V. Tangredi¹, Huey Yi Loh¹, meghan P. Thorndyke¹, Octavio Guimaraes¹, Harrison D. Hallmark², Erlene Chek¹, Gabriel Garcia¹, Michaela R. Bigliardi¹, Ryan J. Gifford¹, Allison N. Vautier¹, Devin Osborne¹, Jerica A. Engle³, Sophie M. Zuchegno¹, Courtney M. Athens¹, Sally R. Gallop¹, Miranda L. Zuvich¹, Alexandra C. Miller¹, Terry E. Engle¹

¹Colorado State University, ²Colorado State University, Department of Animal Sciences, ³Researcher

12:00 p.m. PSIII-2 **The MicroRNA Profile of Day 30 Pregnant Ipsilateral or Non-pregnant Bovine Uterus**

Erin M. Amiss¹, Keelee J. McCarty², Nathan Clemson University Long², Nathan Long²

¹Animal and Veterinary Sciences, Clemson University, USA, ²Clemson University

12:00 p.m. PSIII-17 **Transcriptome Response of Granulosa Cells to Seasonal Heat Stress in Beef Cows**

Kamryn Joyce¹, Ahmed Gad², Nico G. Menjivar², Daniella C. Heredia¹, Camila Santos Rojas¹, Dawit Tesfaye², Angela M. Gonella¹

¹University of Florida, ²Colorado State University

Animal Behavior and Well-Being: Swine and Other Species

Chair: Jay Johnson, USDA-ARS Livestock Behavior Research Unit

12:30 PM - 2:20 PM

205 A/B

12:30 p.m. **Animal Behavior and Well-Being: Swine and Other Species Introduction**

12:35 p.m. 1 **Associations Between Resilience to Early-life Stress and Behavior in Finishing Gilts**

Andrea M. Luttman¹, Bora Lee¹, Janice M. Siegford¹, Nancy E. Raney¹, Juan P. Steibel¹, Catherine W. Ernst¹

¹Michigan State University

12:50 p.m. 2 **Vibration Profiles of Commercial Straight-deck Trailers Transporting Market-weight Pigs During Summer**

Daniela A. Alambarrio¹, Benjamin Davis¹, Benjamin Morris¹, John M. Gonzalez¹, Kari K. Turner¹

¹University of Georgia

1:05 p.m. 3 **Towards Automated Behavior Analysis for Individually Housed Piglets – Sampling Considerations**

Tawni N. Williams¹, Angela R. Green-Miller², Ryan N. Dilger³, Jiangong Li¹

¹University of Illinois at Urbana-Champaign, ²University of Illinois, ³University of Illinois Urbana-Champaign

1:20 p.m. 4 **Evaluating the Use of Leukocyte Coping Capacity as a Measure of Acute Stress in Growing Pigs During a Cycling Heating Period**

Mary L. Kasakamu¹, Jennifer M. Young¹, Christopher J. Byrd¹

¹Department of Animal Sciences, North Dakota State University

1:35 p.m. 5 **The Use of Alginate Hydrogel Beads During Pig Transportation**

Emerald Julianna Salinas¹, John J. McGlone¹, Anna K. Johnson², Arlene Garcia¹

¹Texas Tech University, ²Iowa State University

1:50 p.m. 6 **Validation and Application of a Survey of On-farm Worker Attitudes Towards Euthanasia**

Nancy F. Acevedo Leon¹, Arlene Garcia¹, Katy Schroeder¹, Amy Boren¹, Pablo Lamino¹

¹Texas Tech University

2:05 p.m. 8 **Prediction of Culling and Mortality Risks in Group-housed Broilers Using Machine Learning Methods Trained with Time-series Data of Feeding Behavior Traits**
Anderson A. Carvalho Alves ¹, Arthur F. Araujo Fernandes ², Fernando B. Lopes ², Vivian Breen ², Rachel Hawken ², Guilherme J. M. Rosa ³

¹Department of Animal and Dairy Sciences, University of Wisconsin - Madison, ²Cobb-Vantress, Inc., ³University of Wisconsin-Madison

Physiology and Endocrinology II: The Estrous Cycle, Breeding, and Embryo Transfer

Chair: George Perry, Texas A&M AgriLife Research, Overton, TX

12:30 PM - 3:00 PM

301 A/B

12:30 p.m. **Physiology and Endocrinology II: The Estrous Cycle, Breeding, and Embryo Transfer Introduction**

12:35 p.m. 293 **Awardee Talk: Innovations in Bovine Reproductive Management: What the Future Holds**

Ky G. Pohler ¹

¹Texas A&M University

1:05 p.m. 286 **Effects of Presynchronization with Prostaglandin F₂ α and a Progestin, and Delayed Insemination on Pregnancy Rates with Sexed Semen in Replacement Beef Heifers**

Nicky Oosthuizen ¹, Kristina Porter ², Samir Burato ³, Lucas Melo Goncalves ³, Ky G. Pohler ⁴, Pedro L.P. Fontes ³, Cliff C. Lamb ⁴

¹ABS Global, ²Porter Veterinary Service, ³University of Georgia, ⁴Texas A&M University

1:20 p.m. 291 **Synchronization and Seasonality Effects on Follicular Development, Estrus Expression, and Pregnancy in Brahman Females**

Lacey K. Quail ¹, Kaitlin M. Epperson ¹, Jaclyn N. Ketchum ¹, Chloey Guy ², Chalie Long ³, George A. Perry ⁴

¹Department of Animal Science, Texas A&M University, College Station, TX, ²Texas A&M AgriLife Research Center, Overton, ³Texas A&M AgriLife Research, Overton, ⁴Texas A&M AgriLife Research, Overton, TX

1:35 p.m. 292 **Evaluation of Two Beef Cow Fixed-time AI Protocols That Utilize Pre-synchronization**

Jaclyn N. Ketchum ¹, Lacey K. Quail ¹, Kaitlin M. Epperson ¹, Chloey Guy ², Jerica JJ Rich ³, Saulo Menegatti Zoca ⁴, Adalaide Kline ⁴, Taylor N. Andrews ⁵, Julie Walker ⁶, Pedro L.P. Fontes ⁷, Sandy Johnson ⁸, Megan P. Owen ⁹, Kelsey M. Harvey ¹⁰, Adam F. Summers ⁵, George A. Perry ¹¹

¹Department of Animal Science, Texas A&M University, College Station, TX, ²Texas A&M AgriLife Research Center, Overton, ³College of Agriculture, Arkansas State University, ⁴South Dakota State University Department of Animal Science, Brookings, SD, ⁵New Mexico State University, ⁶South Dakota State University, ⁷University of Georgia, ⁸Kansas State University Northwest Research & Extension Center, Colby, KS, ⁹Texas A&M University Commerce, ¹⁰Mississippi State University, ¹¹Texas A&M AgriLife Research, Overton, TX

1:50 p.m. **Physiology and Endocrinology II Break**

2:00 p.m. 288 **Chemical Characterization of the Marking Fluid of Breeding and Non-breeding Male Cheetahs**

Giulia Esposito ¹, Alexia Tommasi ², Andreas G.J. Tredoux ³, Jacek A. Koziel ⁴

¹Department of Veterinary Medicine, University of Parma, Parma, Italy, ²Department of Animal Sciences, Faculty of AgriSciences, Stellenbosch University, 7600, Stellenbosch (WC, South Africa), ³Department of Chemistry and Polymer Sciences, Faculty of Science, Stellenbosch University, ⁴Dept. of Agricultural & Biosystems Engineering 4350 Elings Hall, Iowa State University, Ames, IA 50011, USA

2:15 p.m. 290 **Effects of Exogenous Follicle Stimulating Hormone Prior to Embryo Transfer on Beef Cow Recipients**

Jamie E. Larson ¹, Bryan Carter ¹, Tate Johnson ¹, Rebecca M. Swanson ¹, Riley D. Messman ¹, Caleb O. Lemley ¹

¹Mississippi State University

2:30 p.m. 287 **Impact of Pre- and Post-natal Nutritional Extremes on Responsiveness of Ovariectomized, Sexually Mature Heifers to a Neurokinin B Agonist During Progesterone Dominance**

Viviana Garza ¹, Julie I. Kellerman ², Rodolfo C. Cardoso ¹, Gary L. Williams ²

¹Texas A&M University, ²Texas A&M AgriLife Research

2:45 p.m. 289 **Sperm Quality Assessments Using Flow Cytometry Do Not Differ Between Angus and Charolais Breeds of Yearling Bulls Meeting Breeding Soundness Exam Threshold Requirements**

Ashley R. Hartman ¹, Ian E. Batey ¹, Theresa J. Rathbun ¹, Abby L. Zezeski ², Tom W. Geary ², David M. Grieger ¹, Karol E. Fike ¹

¹Kansas State University, ²USDA-ARS

Ruminant Nutrition VI: Nutrition II

Chair: Robin Anderson, USDA/ARS, Southern Plains Agricultural Research Center's Food & Feed Safety Research Unit

1:00 PM - 2:20 PM

207 A/B

1:00 p.m. **Ruminant Nutrition VI: Nutrition II Introduction**

1:05 p.m. 362 **Evaluation of Different Levels of Trace Mineral Supplementation to Calves Prior to Weaning**

Gracia M. P. Hernandez ¹, Derringer Boyd ¹, Julia Livingston ¹, Garrett Gossbodily ¹, David W. Bohnert ², Juliana Ranches ²

¹Oregon State University, ²Oregon State University; EOARC

1:20 p.m. 364 **Comparison of Semi-confined and Pasture-based Fall Calving Beef Cow Systems**

Hannah Speer ¹, Mary E. Drownoski ¹

¹University of Nebraska-Lincoln

1:35 p.m. 363 **In vitro Dry Matter and Fiber Digestibility of Different Varieties of Peanut Tops and Bermuda Grass Forage**

Joseph J. Baloyi ¹, Todd R. Callaway ², Jefferson M. Lourenco ²

¹University of Venda, ²University of Georgia

1:50 p.m. 359 **Using an Extruded 100% Dried Distillers' Grains Cube to Intensify Production in a Stocker Grazing Enterprise on Native Range in Northwestern Oklahoma**
Zane N. Grigsby¹, Stacey A. Gunter², Paul A. Beck¹
¹Oklahoma State University, ²USDA-ARS, Oklahoma and Central Plains Agricultural Research Center

2:05 p.m. 360 **The Ability of an Enhanced Zeolite-based Flow Agent to Mitigate the Effects of Ergot-like Alkaloids Consumed by Beef Cattle**
Joshua M. Zeltwanger¹, Eric Bailey¹, Jerilyn Hergenreder², Landon Canterbury³, Derek W. Brake¹, Emily A. Petzel¹, Benjamin Nelson⁴, Du Xiangwei⁵, Tim Evans⁵
¹University of Missouri, ²Kemin Industries Inc., ³Kemin Industries, ⁴Animal, ⁵College of Vet Med

**Beef Species and Ruminant Nutrition Symposium II:
New Advances in Ruminant Nutrition**

Chair: Andrew Foote, Oklahoma State University; Joel Caton, North Dakota State University
1:00 PM - 4:20 PM
Ballroom B

1:00 p.m. **Beef Species and Ruminant Nutrition Symposium II Introduction**

1:05 p.m. 93 **Predicting Metabolizable Energy from Digestible Energy for Growing and Finishing Beef Cattle and Relationships to Prediction of Methane**
Kristin E. Hales¹, Michael Galyean²
¹Texas Tech University, ²Texas Tech University Department of Veterinary Medicine

1:50 p.m. 95 **Micronutrient Research Needs for the Next Beef NASEM**
Stephanie L. Hansen¹, Mary E. Drewnoski², Dathan T. Smerchek¹
¹Iowa State University, ²University of Nebraska-Lincoln

2:35 p.m. **Beef Species and Ruminant Nutrition Symposium II Break**

2:50 p.m. 94 **The Present and Future of NASEM Beef Nutrient Requirement Modeling**
Robin R. White¹
¹Virginia Tech School of Animal Sciences

3:35 p.m. 93 **Research Needs to Advance Nutrient Requirements for Beef Cattle: Ninth Revised Edition**
Clint Krehbiel¹
¹University of Nebraska-Lincoln

Poster Session IV-A

1:30 PM - 2:45 PM
Exhibit Hall A

1:30 p.m. PSIV-A-1 **Assessment of Equine Acclimation to New Management Using Non-invasive Metrics**
Bethany Baxley¹, Nichole C. Anderson¹
¹Texas Tech University

1:30 p.m. PSIV-A-2 **Beef Genetics in the Dairy Management System: Management System and Maternal Genetic Effects on Calf Growth and Body Measurements**

Luke K. Fuerniss¹, James D. Young¹, Jerica R. Hall¹, Kaitlyn R. Wesley¹, Oscar J. Benitez¹, Ryan R. Rathmann¹, Bradley J. Johnson¹

¹Texas Tech University

1:30 p.m. PSIV-A-3 **Body Temperature Monitoring Using Subcutaneously and Vaginal Sensors in Grazing Cows**

Barbara Roqueto dos Reis¹, Robin R. White²

¹Department of Animal and Poultry Sciences, Virginia Tech, ²Virginia Tech School of Animal Sciences

1:30 p.m. PSIV-A-4 **Characterization of Heat Stress and Recovery on Productive Performance and Physiological Indicators, Blood and Milk Characteristic, and Gene Expression in Early Lactating Holstein Cows**

JangHoon Jo¹, Ghassemi Nejad Jalil², WonSeob Kim³, DongQiao Peng⁴, YongHo Jo¹, Hye Ran Kim⁵, Nam Geon Park⁵, HongGu Lee⁶

¹Department of Animal Science and Technology, Konkuk University, ²Department of Animal Science and Technology, Sanghuh College of Life Science Konkuk University, Seoul 05029, Republic of Korea, ³Michigan State University, ⁴Department of Animal Science, College of Animal Science, Jilin University, 5333 Xi'an Road Changchun City, Jilin Province, 130062, P.R. China, ⁵Animal Nutrition and Physiology Team, National Institute of Animal Science, RDA, Wanju 55365, Republic of Korea, ⁶Department of Animal Science and Technology, Sanghuh College of Life Science, Konkuk University, Seoul 05029, Republic of Korea

1:30 p.m. PSIV-A-5 **Comparison of Left vs Right Body Composition Endpoints in Beef Cattle Using Carcass Ultrasound**

Noah P. Jesko¹, Travis C. Tennant¹, Ty E. Lawrence¹, Tommy L. Perkins¹

¹West Texas A&M University

1:30 p.m. PSIV-A-6 **Computer Vision System to Predict Famacha[®] Degree in Sheep from Ocular Conjunctiva Images**

Luara Freitas¹, Rafael Ferreira², Rodrigo Savegnago³, Joao R. R. Dorea², Guilherme J. M. Rosa², Claudia Paz⁴

¹University of Sao Paulo - University of Wisconsin-Madison, ²University of Wisconsin-Madison, ³Michigan State University, ⁴Animal Science Institute

1:30 p.m. PSIV-A-7 **Decreasing the Frequency of Precalving Protein and Energy Supplementation Impacts Preweaning Growth of Bos Indicus-influenced Beef Offspring but Not Their Dam**

Vinicius de Souza Izquierdo¹, Marcelo Vedovatto¹, Elizabeth A. Palmer¹, Rhaiza Oliveira¹, Joao Vendramini², Philippe Moriel²

¹University of Florida - Range Cattle Research & Education Center, ²University of Florida

1:30 p.m. PSIV-A-8 **Development of Automated Computer Vision Systems for Evaluating Dairy Cow Body Weight and Body Condition Scores**

Ye Bi¹, Robert Kadlec¹, Kayla Castro¹, Sam Indest¹, Sabrina Amorim¹, Gota Morota²

¹Virginia Tech, ²School of Animal Sciences, Virginia Polytechnic Institute and State University

1:30 p.m. PSIV-A-9 **Effect of Three Different Initial Implant Programs on Beef × Dairy Steer Feedlot Performance and Carcass Characteristics**

Kaitlyn R. Wesley¹, Alyssa B. Word², Ben P. Holland², Kendall J. Karr², John P. Hutcheson³, Lee-anne J. Walter³, Bradley J. Johnson¹

¹Texas Tech University, ²Cactus Research, ³Merck Animal Health

1:30 p.m. PSIV-A-10 **Effects of Canola Meal Inclusion in Gestation and Lactation Diets with or Without Probiotic on Sow Performance, Milk Composition and Piglet Performance**

Xiaoxiao Zhang¹, Debora Muratori Holanda¹, Charles Martin Nyachoti¹, Jinyoung Lee¹

¹University of Manitoba

1:30 p.m. PSIV-A-11 **Effects of Supplementing Extruded Dried Distillers' Grains Cubes to Stocker Cattle Grazing Introduced Pastures on Subsequent Feedlot Performance and Carcass Characteristics**

Jordan M. Adams¹, Luis O. Tedeschi¹, Paul A. Beck²

¹Texas A&M University, ²Oklahoma State University

1:30 p.m. PSIV-A-12 **Effects of Treating Primary Bovine Satellite Cells Cultures Inducted to Differentiate with Steroid Hormones, Zinc or Manganese on Creatine Kinase Activity**

Anthony F. Alberto¹, Laura A. Motsinger², Stephanie L. Hansen³, Kara J. Thornton¹, Bailee Brown¹

¹Utah State University, ²Hill's Pet Nutrition, ³Iowa State University

1:30 p.m. PSIV-A-13 **Estimation of Nelore Genetic Contribution over Certified Angus Beef Sold in Brazil**

Cris Luana de Castro Nunes¹, Fabyano Fonseca e Silva¹, Renata Veroneze¹, Marcio de Souza Duarte², Simone Eliza Facioni Guimarães¹, Luiz Antônio Josakian³, Henrique Torres Ventura³, Mario Luiz Chizzotti¹

¹Universidade Federal de Viçosa, ²University of Guelph, ³Brazilian Association of Zebu Breeders, ABCZ

ASAS Diversity, Equity and Inclusion Symposium

Chair: Shawn Archibeque, Colorado State University

1:30 PM - 3:30 PM

201

1:30 p.m. **ASAS Diversity, Equity and Inclusion Symposium Introduction**

1:35 p.m. 401 **Cooperative Extension in Indigenous Communities: Perspectives of 1862 and 1994 Extension Educators**

Katie Hartmann¹

¹Iowa State University

2:15 p.m. 402 **The Silver Linings of a Pandemic**

Olga Bolden -Tiller¹

¹Tuskegee University

2:55 p.m. **ASAS Diversity, Equity and Inclusion Symposium Panel Discussion**

Poster Session IV-B

1:45 PM - 2:45 PM

Exhibit Hall A

1:45 p.m. PSIV-B-19 **Determining the Effect of Zinc Status on Eye Health and Its Relationship with Infectious Bovine Keratoconjunctivitis in Beef Calves**

Reagan N. Cauble¹, Michael Hickinbotham², Beth B. Kegley³, Jeremy G. Powell⁴

¹University of Arkansas, ²University of Arkansas Department of Animal Science, ³University of Arkansas Division of Agriculture, ⁴University of Arkansas System Division of Agriculture

1:45 p.m. PSIV-B-15 **Effects of Different Prenatal Nutrition Strategies on Liver Metabolome of Bulls and Its Correlation with Body and Liver Weight**

Guilherme H. Polizel¹, Evandro Dias¹, Brenda T. Carmona¹, Gianluca C. Santos¹, Isabela Mortari¹, Nara P. Garcia¹, Miguel H. Santana²

¹College of Animal Science and Food Engineering FZEA/USP, ²College of Animal Science and Food Engineering FZEA; São Paulo University - USP

1:45 p.m. PSIV-B-16 **Effects of Replacing Cottonseed Meal with Carinata Meal on Performance, Intake, and Digestibility in Backgrounding Beef Heifers Consuming a Corn Silage-based Diet**

Tessa M. Schulmeister¹, Federico Tarnonsky¹, Federico Podversich¹, Juan Vargas¹, Ignacio Fernandez Marenchino¹, Araceli B. Maderal¹, Wilmer Cuervo¹, Camila Gomez Lopez¹, Angela M. Gonella¹, Jose C. B. Dubeux¹, Nicolas DiLorenzo²

¹University of Florida, ²Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

1:45 p.m. PSIV-B-17 **Effects of Weaning Method on Performance of Crossbred Beef Calves**

Whitney L. Rook¹, Daniel Rivera², Cody Shelton¹, Cyle C. Jones³

¹University of Arkansas, ²University of Arkansas Southwest Research and Extension Center, ³University of Arkansas Division of Agriculture

1:45 p.m. PSIV-B-18 **Effects of Winter Hair Shedding Level and Service Sire Breed on Cow-calf Performance of a Spring-calving Herd in the Southeastern United States**

Emily G. Hayes¹, Kaylee Hurt¹, Maria L. Leite-Browning¹, Richard Browning¹

¹Tennessee State University

1:45 p.m. PSIV-B-14 **Fetal Programming Effects on Weight Gain and Backfat Thickness in Nellore Heifers**

Miguel H. Santana¹, Roberta Cracco², Arícia C. Fernandes², Cynhtia de Carli², Geovana C. Baldin², Guilherme H. Polizel²

¹College of Animal Science and Food Engineering FZEA; São Paulo University - USP, ²College of Animal Science and Food Engineering FZEA/USP

1:45 p.m. PSIV-B-20 **Genome-wide Association Analyses Revealed Potential Molecular Mechanisms Affecting Milk Fever in Dairy Cattle**

Morgan A. Lunn¹, Sydney Gillette², Fernando Campos³, Daniel Peterson³, Kim Sprayberry³, Mehdi Sargolzaei⁴, Gary McArthur⁵, Paul Anderson⁶, Michael La Frano⁷, Siroj Pokharel³, Mohammed Abo-Ismael⁸

¹Cal Poly State University, ²California Polytechnic State University, ³Animal Science Department, Cal Poly State University, ⁴Select Sires, ⁵Swinging Udders Veterinary Service LLC, ⁶Department of Computer Science and Software Engineering, Cal Poly State University, ⁷Cal Poly - San Luis Obispo, ⁸California Polytechnic State University, San Luis Obispo

1:45 p.m. PSIV-B-21 **Genome-wide Association Studies for Ketosis in Dairy Cattle**
Sydney Gillette ¹, Morgan A. Lunn ², Fernando Campos ³, Daniel Peterson ³, Kim Sprayberry ³, Mehdi Sargolzaei ⁴, Gary McArthur ⁵, Paul Anderson ⁶, Michael La Frano ⁷, Siroj Pokharel ³, Mohammed Abo-Ismael ⁸

¹California Polytechnic State University, ²Cal Poly State University, ³Animal Science Department, Cal Poly State University, ⁴Select Sires, ⁵Swinging Udders Veterinary Service LLC, ⁶Department of Computer Science and Software Engineering, Cal Poly State University, ⁷Cal Poly - San Luis Obispo, ⁸California Polytechnic State University, San Luis Obispo

Ruminant Nutrition IV: Nutrition I

Chair: Jhones Sarturi, Texas Tech University

2:00 PM - 4:30 PM

206 A/B

2:00 p.m. **Ruminant Nutrition IV: Nutrition I Introduction**

2:05 p.m. 344 **Impact of Removing 20% Distillers Grains After One-third or Two-thirds of the Feeding Period on Performance of Finishing Yearlings**

Sofia Suarez Lorences ¹, Braden C. Troyer ¹, Mitch M. Norman ¹, Pablo L. Loza ², Rick A. Stock ³, Jim C. MacDonald ³, Galen E. Erickson ³

¹University of Nebraska-Lincoln, ²University of Nebraska Lincoln, ³University of Nebraska-Lincoln

2:20 p.m. 347 **Using Whole Cottonseed to Replace Dried Distillers Grains Plus Solubles and Prairie Hay in Finishing Rations Balanced for Physically Effective Neutral Detergent Fiber**

Kasi N. Schneid ¹, Andrew P. Foote ¹, Paul A. Beck ¹, Blake K. Wilson ¹

¹Oklahoma State University

2:35 p.m. 348 **Including Alfalfa in the Diet of Steers Fed TMR: Effect on Rumen Fermentation and Performance**

Eliana Y. Ciancio Bruni Falero ¹, Álvaro Santana ², Juan E. Dayuto ¹, María J. Ricci ¹, Juan P. Capucho ¹, Ana L. González ¹, Cecilia Cajarville ³, José Luis Repetto ²

¹Instituto de Producción Animal, Facultad de Veterinaria, Universidad de la República, Ruta 1 km 42.5, San José, Uruguay, ²Unidad Académica de Bovinos, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay, ³Unidad Académica de Nutrición Animal, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay

2:50 p.m. 345 **Evaluation of the Effects of Hempseed Cake on Ruminant Fermentation Parameters, Nutrient Digestibility, Nutrient Flow, and Nitrogen Balance in Finishing Steers**

Thomas Winders ¹, Bryan W. Neville ², Kendall C. Swanson ¹

¹North Dakota State University, ²USDA, ARS, U.S. Meat Animal Research Center

3:05 p.m. 346 **Feeding Hempseed Cake Alters the Bovine Gut, Respiratory and Reproductive Microbiota**

Thomas Winders¹, Devin B. Holman², Kaycie N. Schmidt¹, David J. Smith³, Bryan W. Neville⁴, Carl R. Dahlen¹, Kendall C. Swanson¹, Samat Amat⁵

¹North Dakota State University, ²Agriculture and Agri-food Canada, ³U.S. DEPARTMENT OF AGRICULTURE, ⁴USDA, ARS, U.S. Meat Animal Research Center, ⁵North Dakota State University, Department of Microbiological Sciences

3:20 p.m. **Ruminant Nutrition IV: Nutrition I Break**

3:30 p.m. 349 **Dietary Zinc and Ractopamine Elicit Changes in Gene Expression of Zinc Transporters in the Muscle of Finishing Beef Steers**

Erin L. Deters¹, Emma L. Rients¹, Remy Carmichael¹, Olivia N. Genther Schroeder², Stephanie L. Hansen¹

¹Iowa State University, ²Purina Animal Nutrition

3:45 p.m. 343 **Effect of Ruminally-protected Lysine Supplementation to Limit-fed Growing Cattle on Growth and Subsequent Finishing Performance**

Kathryn J. Hazlewood¹, Madeline S. Grant², Dale A. Blasi², Gary A. Ducharme³, Evan C. Titgemeyer²

¹Department of Animal Sciences and Industry, Kansas State University, ²Kansas State University, ³PROJ-X, Inc.

4:00 p.m. 350 **Meta-analysis of the Effects of Dietary Inclusion of Dry Distillers Grains with Solubles (DDGS) on Performance, Fermentation, Carcass Characteristics, and Nitrogen Efficiency in Sheep**

Sai Chandan Chelkapally¹, Thomas H. Terrill¹, Andres A. Pech-Cervantes¹

¹Fort Valley State University

4:15 p.m. 351 **Mycotoxin Trends in US Total Mixed Rations and Corn Silage**

Erin F. Schwandt¹, Paige N. Gott¹, Lan Zheng¹, Ursula Hofstetter-Schähs¹, April W. Levy¹

¹DSM Nutritional Products

Meat Science and Muscle Biology Symposium:

Metabolomics Measurements in Determining Meat Quality

Sponsored by Texas A&M Department of Animal Science:

Safety, Quality, and Nutrition of Food Products Area of Excellence

Chair: Chris Kerth, Texas A&M University

2:00 PM - 4:45 PM

301 C/D

2:00 p.m. **Meat Science and Muscle Biology Symposium Introduction**

2:05 p.m. 237 **Using Metabolomic Approaches to Understand and Reduce Animal Variation in Meat Quality Traits**

Andy King¹, Steven Shackelford², Tommy L. Wheeler³

¹USDA-ARS-US Meat Animal Research Center, ²USDA-ARS_ US Meat Animal Research Center, ³USDA, ARS, U.S. Meat Animal Research Center

2:35 p.m. 235 **Animal Production and Carcass Traits Affect Meat Quality and Flavor Through Metabolomics**

Chris R. Kerth ¹

¹Texas A&M University

3:05 p.m. **Meat Science and Muscle Biology Symposium Break**

3:15 p.m. 238 **Developing Novel Smart-aging Strategies Through Metabolomics Approach**

Brad H. B. Kim ¹

¹Purdue Univ.

3:45 p.m. 236 **Awardee Talk: Metabolomics and Meat Color: A Novel Approach to Understand Molecular Signatures**

Ranjith Ramanathan ¹

¹Oklahoma State University

4:15 p.m. **Meat Science and Muscle Biology Symposium Discussion**

Ruminant Nutrition VII: Nutrition III

Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC

2:45 PM - 4:05 PM

207 A/B

2:45 p.m. **Ruminant Nutrition VII: Nutrition III Introduction**

2:50 p.m. 365 **Towards the Integration of Microbial Genomic Information into Mechanistic Models of the Rumen Microbiome: A Theoretical Study**

Mohsen Davoudkhani ¹, Francesco Rubino ², Christopher J. Creevey ², Rafael Muñoz-Tamayo ¹

¹Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants, 75005, Paris, France, ²Institute of Global Food Security, School of Biological Sciences, Queen's University Belfast, BT9 5DL, Northern Ireland, UK

3:05 p.m. 366 **Effect of Native Rumen Bacteria Supplementation in Methane Emissions, Growth Performance, and Carcass Characteristics of Feedlot Cattle**

Alejandro Pittaluga ¹, Fan Yang ², Jordan Embree ², Sean Gilmore ², Mallory Embree ², Alejandro E. Relling ¹

¹The Ohio State University, ²Native Microbials

3:20 p.m. 368 **Effects of Rumen Fermentation Parameters and Microbiota of Sanhe Heifers from Different Altitude Regions**

Zhang Xinyu ¹, Shengli Li ²

¹China agricultural university, ²China Agricultural University

3:35 p.m. 369 **Effect of Diet, Rumen Fermentation Parameters and Their Combination on Predicting Milk Production**

Sathya Sujani ¹, Robin R. White ²

¹Department of Animal & Poultry Sciences, Virginia Tech, ²Virginia Tech School of Animal Sciences

3:50 p.m. 367 **Characterization of the Seminal Microbiota in Beef Bulls Subjected to Different Rate of Gains Using 16S rRNA Gene Sequencing and Culturomics**

Emily M. Webb¹, Devin B. Holman², Kaycie N. Schmidt¹, Matthew S. Crouse³, Carl R. Dahlen¹, Robert A. Cushman⁴, Alexandria P. Snider⁵, Kacie L. McCarthy⁶, Samat Amat⁷

¹North Dakota State University, ²Agriculture and Agri-food Canada, ³USDA, ARS, U.S. Meat Animal Research Center, ⁴USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit, ⁵USDA, ARS, U.S. Meat Animal Research Center, Livestock Bio-systems Research Unit, ⁶University of Nebraska, ⁷North Dakota State University, Department of Microbiological Sciences

Poster Session V-A

3:00 PM - 4:15 PM

Exhibit Hall A

3:00 p.m. PSV-A-1 **Estrus Response and Pregnancy Rates of Beef Cows Enrolled in Two Fixed-time Artificial Insemination Protocols, with or Without Pre-synchronization**

Stefania Pancini¹, Nicholas W. Dias¹, John Currin¹, Sherrie Clark-Deener¹, Jamie L. Stewart¹, Vitor R.G R. G. Mercadante¹

¹Virginia Tech

3:00 p.m. PSV-A-2 **Evaluation of Immune Performance of Calves Born to Cows Vaccinated with a Lifetime Regimen of a Modified-live or Killed Viral Vaccine When Challenged with Bovine Viral Diarrhea Virus**

Emily A. Melchior-Tiffany¹, Collin Anderson¹, Shad H. Cox², Richard L. Dunlap², Shanna L. Ivey¹, John C. Wenzel¹, Eric J. Scholljegerdes¹

¹New Mexico State University, ²Corona Range and Livestock Research Center

3:00 p.m. PSV-A-3 **Insulin in Sheep Under Different Patterns of Heat Stress**

Barbara Roqueto dos Reis¹, T. Nguyen¹, Robin R. White²

¹Department of Animal and Poultry Sciences, Virginia Tech, ²Virginia Tech School of Animal Sciences

3:00 p.m. PSV-A-4 **Novel Method to Identify Cattle Predisposed to Severe Cases of Bovine Respiratory Disease**

Victor V. Flores¹, Jennifer A. Hernandez Gifford¹, Blake K. Wilson², Craig A. Gifford¹

¹New Mexico State University, ²Oklahoma State University

3:00 p.m. PSV-A-5 **One-carbon Metabolite Supplementation Influences Pancreatic α -amylase Activity and Protein Concentration in a Dose-dependent Manner in Beef Heifers**

Ronald J. Trotta¹, Harvey Freetly², Robert A. Cushman³, William T. Oliver⁴, Amanda Lindholm-Perry⁵, Joel S. Caton⁶, Alison K. Ward⁶, Matthew S. Crouse²

¹University of Kentucky, ²USDA, ARS, U.S. Meat Animal Research Center, ³USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit, ⁴USDA ARS, ⁵USDA MARC, ⁶North Dakota State University

3:00 p.m. PSV-A-6 **Poor Maternal Nutrition During Gestation Decreases Shear Force and Alters Gene Expression Related to Fibrogenesis**

Mia Y. Kawaida¹, Daniela A. Alambarrio², John M. Gonzalez³, Nicole M. Tillquist¹, Amanda S. Reiter¹, Brandon I. Smith¹, Steven A. Zinn⁴, Kristen E. Govoni⁴, Sarah A. Reed⁴

¹University of Connecticut, ²University of Georgia, ³University of Georgia, ⁴Dept. of Animal Science, University of Connecticut

3:00 p.m. PSV-A-7 **Quality Assessments of Sperm from GnRH-ii Receptor Knockdown (KD) Boars**

Caitlin E. Ross¹, Ginger A. Mills¹, Amy T. Desaulniers², Clay A. Lents³, Brett R. White²
¹Department of Animal Science, University of Nebraska, ²University of Nebraska-Lincoln, ³USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit

3:00 p.m. PSV-A-8 **Reduced Daylength Pre-calving Increases Milk Production Post-calving**

Kayla J. Alward¹, Rebecca Cockrum¹, Alison Duncan¹
¹Virginia Tech

3:00 p.m. PSV-A-9 **Reduction of Salmonella Reading Using a Dairy-originated Probiotic Bacterium, Propionibacterium Freudenreichii in Combination with a Live Attenuated Salmonella Typhimurium Vaccine in Growing Turkeys**

Claire Peichel¹, Shijinarah Manjankattil¹, Grace Dewi¹, Luna Akhtar¹, Peter Bina¹, Medora Creek¹, Kerem Deniz¹, John Hobbs¹, Elaina Wichmann¹, Emma Feist¹, Mikayla Schlosser¹, Timothy J. J. Johnson¹, Sally Noll¹, Anup Kollanoor Johny¹
¹University of Minnesota

3:00 p.m. PSV-A-10 **Single-cell Atlas of Bovine Skeletal Muscle Identifies Mechanisms Regulating Intramuscular Adipogenesis and Fibrogenesis**

Leshan Wang¹, Chaoyang Li¹, Qianglin Liu¹, Yuxia Li¹, Peidong Gao¹, Xujia Zhang¹, Matthew Welborn¹, Xing Fu¹
¹Louisiana State University

3:00 p.m. PSV-A-11 **The Effect of Days on Feed for Feedyard Performance, Health, Carcass, and Organ Characteristics of Angus X Holstein Heifers**

Taylor C. Husz¹, Alyssa B. Word², Kendall J. Karr², Ben P. Holland², Ty E. Lawrence¹, Lee-
anne J. Walter³, John P. Hutcheson³
¹West Texas A&M University, ²Cactus Research, ³Merck Animal Health

3:00 p.m. PSV-A-12 **The Influence of Calcium Dose and Olive Meal on in-vitro Rumen Fermentation Characteristics**

Huey Yi Loh¹, Briana V. Tangredi¹, meghan P. Thorndyke¹, Octavio Guimaraes¹, Devin Osborne¹, Sophie M. Zuchegno¹, Miranda L. Zuvich¹, Courtney M. Athens¹, Jerica A. Engle², Ryan J. Gifford¹, Terry E. Engle¹
¹Colorado State University, ²Researcher

3:00 p.m. PSV-A-13 **Using Canine Olfaction to Detect Bovine Respiratory Disease: An Analysis of Two Dogs' Performance**

Aiden E. Juge¹, Nathaniel Hall², John T. Richeson³, Courtney L. Daigle⁴
¹Texas A&M University, ²Department of Animal Science, Texas Tech University, ³West Texas A&M University, ⁴Department of Animal Science, Texas A&M University

**Animal Behavior and Well-Being Symposium:
Animal Production Practices and Greenhouse Gasses**

Chair: Brenda Alexander, University of Wyoming

3:00 PM - 5:45 PM

205 A/B

3:00 p.m. **Animal Behavior and Well-Being Symposium I Introduction**

3:05 p.m. 9 **Is a Climate Neutral Animal Agriculture Possible?**

Ermias Kebreab¹, Eleanor Pressman¹

¹UC Davis

3:50 p.m. 11 **Balancing Beneficence and Autonomy in Animal Agriculture with a Warming World**

Adam Feltz¹, Silke Feltz¹

¹University of Oklahoma

4:35 p.m. **Animal Behavior and Well-Being Symposium Break**

4:45 p.m. 10 **Conservation Planning for Greenhouse Gases in Animal Agriculture**

Greg Zwicke¹, Allison Costa¹

¹USDA-NRCS

5:30 p.m. **Animal Behavior and Well-Being Symposium Q&A**

Physiology and Endocrinology III: Pregnancy and Fetal Programming

Chair: Alan Ealy, Virginia Polytechnic Institute and State University

3:15 PM - 5:30 PM

301 A/B

3:15 p.m. **Physiology and Endocrinology III: Pregnancy and Fetal Programming Introduction**

3:20 p.m. 294 **Awardee Talk: Porcine Sperm Storage in the Oviduct before Fertilization: A Sweet Spot**

David J. Miller¹

¹University of Illinois

3:50 p.m. 296 **Ergot Alkaloid Consumption Alters Serotonin Receptor-induced Vasoactivity in Ovine Umbilical Vasculature**

James L. Klotz¹, Susan K. Duckett², Jessi Britt², Maslyn A. Greene², John G. Andrae²

¹USDA-ARS Forage-Animal Production Research Unit, ²Clemson University

4:05 p.m. 297 **Maternal Nutrient Restriction and Melatonin Supplementation Alter Neurotransmitter Profiles in Bovine Fetal and Placental Tissues**

Allison R. Harman¹, Zully E. Contreras-Correa¹, Rebecca M. Swanson¹, Mackenzie Ripper¹, Thomas H. Duncan¹, Caleb O. Lemley¹

¹Mississippi State University

4:20 p.m. 301 **Effect of Maternal Supplementation of *Saccharomyces Cerevisiae* Var. *Boulardii* During Late-gestation and Lactation on Progeny Immune Status from Birth to 35 Days-of-age**

Lily P. Hernandez¹, Cassidy C. Reddout², Janeen L. Salak-Johnson¹

¹Oklahoma State University, ²Oklahoma State University- Dept. of Animal and Food Sciences

4:35 p.m. **Physiology and Endocrinology III: Pregnancy and Fetal Programming Break**

4:45 p.m. 295 **Effects of Prenatal Testosterone Excess on Puberty Attainment of First-generation Ewe Lambs**

Sara C. Gurule¹, Jessica F. Sustaita-Monroe¹, Renata Landers¹, Leslie King¹, Viviana Garza¹, Sarah Bynum¹, Dylan Arrott¹, Vasantha Padmanabhan², Rodolfo C. Cardoso¹

¹Texas A&M University, ²University of Michigan

5:00 p.m. 298 **Late Gestational Nutrient Restriction of Primiparous Beef Heifers Decreases Neonatal Calf Body Weight and Organ Mass**

Colby A. Redifer¹, Abigail R. Rathert-Williams¹, Shelby L. Davies², Remie M. Johnson³, Pamela R. Adkins³, Allison M. Meyer¹

¹University of Missouri, ²Division of Animal Sciences, University of Missouri, ³College of Veterinary Medicine, University of Missouri

5:15 p.m. 299 **Differences in Microbial Community Composition Between Uterine Horns Ipsilateral and Contralateral to the Corpus Luteum in Beef Cows on Day 15 of the Estrous Cycle**

Madison B. B. Walker¹, Matthew P. Holton¹, Jeferson M. Lourenco¹, Pedro L.P. Fontes¹

¹University of Georgia

Poster Session V-B

3:15 PM - 4:15 PM

Exhibit Hall A

3:15 p.m. PSV-B-14 **Bovine Luteal Cell Apoptosis Following Administration of a Commercial Inactivated or Modified-live Virus Vaccine at Time of AI**

Kaitlin M. Epperson¹, Lacey K. Quail¹, Jerica JJ Rich², Saulo Menegatti Zoca³, Taylor N. Andrews⁴, Adalaide Kline⁵, Frank White⁶, Russell F. Daly⁷, George A. Perry⁸

¹Department of Animal Science, Texas A&M University, College Station, TX, ²College of Agriculture, Arkansas State University, ³South Dakota State University, ⁴New Mexico State University, ⁵South Dakota State University Department of Animal Science, Brookings, SD, ⁶Elanco Animal Health, Greenfield, IN, ⁷South Dakota State University Department of Veterinary & Biomedical Sciences, Brookings, SD, ⁸Texas A&M AgriLife Research, Overton, TX

3:15 p.m. PSV-B-15 **Comparison of the 7-day Cosynch and 8-day Estradiol-based Protocols for Synchronization of Ovulation and Timed Artificial Insemination in Suckled *Bos Taurus* Cows**

Alejandro M. Rodriguez¹, Sebastian Maresca², Sebastian O. López-Valiente³, Maria G. Bilbao⁴, Karen D. Moran⁴, Julián A. Bartolome⁵, Nathan Clemson University Long⁶, Nathan Long⁶

¹Instituto Nacional de Tecnología Agropecuaria, Argentina, ²INTA, ³Instituto Nacional de Tecnología Agropecuaria, Argentina, ⁴Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina. Facultad de Ciencias Veterinarias, Universidad Nacional de La Pampa, Argentina, ⁵Facultad de Ciencias Veterinarias Universidad Nacional de La Pampa, Argentina., ⁶Clemson University

3:15 p.m. PSV-B-16 **Correlation Between Plasma, Uterine, and Vaginal Cytokine Concentrations in Postpartum Beef Cows Prior to Artificial Insemination**

Kyle J. Hickman-Brown¹, Molly S. Smith¹, Brooke E. McAnally¹, Ramiro V. Oliveira¹, Gabriela Dalmaso¹, Ky G. Pohler¹, Rebecca K. Poole¹

¹Texas A&M University

3:15 p.m. PSV-B-17 **Effect of Dietary Supplementation with Vitamins/minerals And/or Energy on Fetoplacental Vascularity in Crossbred Angus Heifers**

Bethania J. Davila Ruiz¹, Carl R. Dahlen¹, Jennifer L. Hurlbert¹, Friederike Baumgaertner¹, Kerri A. Bochantin¹, Ana Clara B. Menezes¹, Wellison Jarles j. Da Silva Diniz², James D. Kirsch¹, Pawel P. Borowicz¹, Sebastian Canovas³, Larry P. Reynolds¹

¹North Dakota State University, ²Auburn University, ³Universidad de Murcia

3:15 p.m. PSV-B-19 **Effect of Phi-chrome on Beef Cattle Feedlot Performance in Commercial Conditions in Mexico**

Milton Gorocica¹, Aaron Meza¹, Eduardo Martinez¹, Jorge Hidalgo²

¹Phibro Animal Health Corporation, Guadalajara, JA 44130, Mexico, ²University of Georgia

3:15 p.m. PSV-B-20 **Effect of Physically Effective Neutral Detergent Fiber, and Undigested Neutral Detergent Fiber on Eating Behavior, Ruminal Ph, Ruminal Motility, and Total Tract Permeability for Finishing Cattle**

Murillo C. Pereira¹, Aniele B. Franceschi², Katharine M. Wood³, Wenzhu Yang⁴, Karen A. Beauchemin⁵, Timothy A. McAllister⁴, Greg B. Penner⁶

¹Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada S7N 5A8, ²São Paulo State University (UNESP), College of Technology and Agricultural Sciences, ³University of Guelph, ⁴Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, ⁵Agriculture and Agri-Food Canada, ⁶Department of Animal and Poultry Science, University of Saskatchewan

3:15 p.m. PSV-B-18 **Effect of Puberty Induction on Embryonic Loss in Precocious Nellore Heifers**

Marcelo baggio¹, José paulo P. R. Barroso¹, Leticia Carolina Bortolanza Soares¹, Josiane F Lages¹, Joel G Oliveira Junior¹, Mariana Jeronymo¹, Natasha B Petrenko¹, Evandro Maia M. Ferreira¹, Alexandre Vaz Pires¹

¹ASAS

3:15 p.m. PSV-B-21 **Genome-wide Analysis of Sheep Artificially or Naturally Infected with Gastrointestinal Nematodes**

Jacob W. Thorne¹, Reid Redden², Scott A. Bowdridge³, Gabrielle M. Becker¹, Morgan R. stegemiller⁴, Brenda M. Murdoch¹

¹University of Idaho, ²Texas A&M AgriLife Extension, ³West Virginia University, ⁴Department of Animal, Veterinary, and Food Sciences, University of Idaho

Small Ruminant

Chair: Raluca G. Mateescu, University of Florida; Christian Posbergh, Montana State University
4:15 PM - 5:35 PM
207 A/B

4:15 p.m. **Small Ruminant Introduction**

4:20 p.m. 370 **Effects of the Vasoactive Intestinal Polypeptide (VIP) for the Efficient Ruminant Product**

Md Golam Kafi Afrose Mia¹, Emma Hawley², Mustapha Yusuf², Glenn Dorsam², Kendall C. Swanson²

¹Department of Animal Science, North Dakota State University., ²North Dakota State University

4:35 p.m. 373 **Growth Performance, Efficiency of Dietary Net Energy Utilization, and Carcass Traits of Lambs Supplemented Encapsulated Butyric Acid and Zinc Abruptly Transitioned to a Finishing Diet**

Forest L. Francis¹, Thiago Lauro Maia Ribeiro¹, Erin R. Gubbels¹, Doug LaFleur², Jerilyn Hergenreder², Zachary K. Smith¹

¹South Dakota State University, ²Kemin Industries Inc.

4:50 p.m. 371 **Influence of Breeding Season Lameness on Reproductive Performance in Meat Goat Does**

Richard Browning¹, Ahmad Alghamdi¹, Maria L. Leite-Browning¹

¹Tennessee State University

5:05 p.m. 372 **Selecting Goats for Juniper Consumption Increases Pentobarbital-induced Sleep Time**

John Walker¹, Brian Shoemake², Danilo G. Quadros³, Jacob W. Thorne³, Noah Cahill²

¹Texas A&M AgriLife Research and Extension Center, ²Texas A&M University, ³Texas A&M AgriLife Research

5:20 p.m. 374 **The Effects of Zinc Sulfate on the in vitro Feed Digestibility in White-tailed Deer**

Reese J. Thibodeaux¹, Phil M. Urso¹, Stanley F. Kelley¹, Marcy M. Beverly¹, Chris R. Stewart¹

¹Sam Houston State University

Poster Session VI

5:15 PM - 6:15 PM

Exhibit Hall A

5:15 p.m. PSVI-14 **Effect of Morphometric Traits upon Social Hierarchy of Dorper Rams from Northern Mexico**

MA ANGELES DE SANTIAGO¹, Francisco Gerardo Véliz-Deras², Andrea González-Tavizón², Pablo I. Sifuentes Lamont¹, Cesar Alberto Meza-Herrera³, RAFAEL RODRIGUEZ MARTINEZ¹, GERARDO ARELLANO RODRÍGUEZ¹

¹UAAAN, ²Universidad Autónoma Agraria Antonio Narro, ³Universidad Autónoma Chapingo

5:15 p.m. PSVI-17 **Effect of Post-ruminal Amino Acid Supply on Organ Mass and Small Intestinal Length in Holstein Bull Calves Fed a Starch-based Milk Replacer**

Emily A. Petzel¹, Subash Acharya¹, Eric Bailey¹, Setsabile Shiba¹, Derek W. Brake¹
¹University of Missouri

5:15 p.m. PSVI-18 **Effect of Processing Method and Severity for Hybrid Fall Rye on Dry Matter Intake, Ruminal Fermentation, and Apparent Total Tract Nutrient Digestibility in Ruminally Cannulated Beef Heifers**

Murillo C. Pereira¹, Jordan A. Johnson², Rebecca S. Brattain³, Herman Wehrle⁴, Greg B. Penner⁵

¹Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada S7N 5A8, ²Government of Saskatchewan, Ministry of Agriculture, ³KWS Cereals USA, LLC., ⁴KWS CEREALS USA, LLC., ⁵Department of Animal and Poultry Science, University of Saskatchewan

5:15 p.m. PSVI-19 **Effect of Processing Methods and Inclusion Level of Dried Raw Garlic on in vitro Fermentation Profile and Methane Production in a Corn Silage-based Diet**

Juan Vargas¹, Federico Tarnonsky¹, Araceli B. Maderal¹, Ignacio Fernandez Marenchino¹, Federico Podversich¹, Wilmer Cuervo¹, Camila Gomez Lopez¹, Tessa M. Schulmeister¹, Nicolas DiLorenzo²

¹University of Florida, ²Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

5:15 p.m. PSVI-20 **Effect of Skin Thickness and Rumen-protected Methionine on Body Temperature of Nelore Cows Keep on Tropical Environment**

Cassio Cassal Brauner¹, Matheus Barbosa², Vinicius de Souza Izquierdo³, Jordani Cardoso², Fernanda Lopes⁴, Marcio Nunes Corrêa¹, Eduardo Schmitt⁵

¹NUPEEC - UFPEL, ²Universidade Federal de Pelotas, ³University of Florida - Range Cattle Research & Education Center, ⁴ADISSEO LATIN AMERICA ADISSEO BRASIL NUTRIÇÃO ANIMAL LTDA., ⁵Federal University of Pelotas

5:15 p.m. PSVI-8 **Effect of Social Hierarchy upon Reproductive Traits of Dorper Rams from Northern Mexico**

Viridiana Contreras-Villarreal¹, Andrea González-Tavizón², Cesar Alberto Meza-Herrera³, Fernando Arellano-Rodríguez², Dalia Ivette Carrillo-Moreno², Guadalupe Calderón-Leyva², Oscar Ángel-García², Francisco Gerardo Véliz-Deras²

¹Universidad Autónoma Agraria Antonio Narro, ²Universidad Autónoma Agraria Antonio Narro, ³Universidad Autónoma Chapingo

5:15 p.m. PSVI-9 **Effect of Supplementing Confined Goats with Cucumis Melo During the Peripartum Period**

Leticia Gaytán Alemán¹, Oscar Ángel-García¹, Viridiana Contreras Villarreal¹, Dalia Ivette Carrillo-Moreno¹, Francisco Gerardo Véliz-Deras¹, Guadalupe Calderón-Leyva¹, Alan Sebastian Alvarado Espino², Angeles De Santiago Miramontes²

¹Universidad Autónoma Agraria Antonio Narro, ²Universidad Autónoma Agraria Antonio Narro

5:15 p.m. PSVI-15 **Effects of Different Dietary Sources of Lipids for Lactating Ewes**
Adrielly S a Silva ¹, Paulo cesar G Dias Junior ¹, Matheus Carlis ², Nathalia R Ackermann ¹,
Thamires U Sturion ¹, Terezinha T Souza ¹, Janaina S S. Biava ¹, Evandro Maia M. Ferreira ¹,
Daniel M M. Polizel ¹, Bruno Ieda Cappelloza ¹, Alexandre Vaz Pires ¹
¹ASAS, ²FZEA-USP

5:15 p.m. PSVI-11 **Effects of Levels of Minerals of a Natural Source of Brackish Water and Nacl on Digestion and Ruminant Methane Emission by Different Breeds of Goats and Hair Sheep**
Luana Ribeiro ¹, Ryszard Puchala ², Arthur L. Goetsch ²
¹American Institute for Goat Research, Langston University, ²Langston University

5:15 p.m. PSVI-1 **Effects of Rumen-protected Methionine on Reproduction and Body Temperature of Nelore Cows in Hot and Humid Environments**
Vinicius de Souza Izquierdo ¹, Fernanda Lopes ², Bernardo Da Silva Menezes ³, Edgard Gonçalves Malaguez ⁴, Marcio Nunes Corrêa ⁴, Philippe Moriel ⁵, Cassio Cassal Brauner ⁴, Eduardo Schmitt ⁶
¹University of Florida - Range Cattle Research & Education Center, ²ADISSEO LATIN AMERICA ADISSEO BRASIL NUTRIÇÃO ANIMAL LTDA., ³NUPEEC, ⁴NUPEEC - UFPeI, ⁵University of Florida, ⁶Federal University of Pelotas

5:15 p.m. PSVI-12 **Ghrelin Plasm Concentrations Are Greater in High- vs Low-rfi Hampshire Male Lambs Within a Transient Surge of Secretion Just Before a Scheduled Meal Feeding**
José G. Pérez-Álvarez ¹, José A. Martínez-Quintana ², Francisco J. Jahuey-Martínez ¹, Agustín Corral-Luna ², Joel Domínguez-Viveros ¹, Ana A. Sifuentes-Rincón ³, Felipe A. Rodríguez-Almeida ²
¹Universidad Autónoma de Chihuahua, Facultad de Zootecnia y Ecología, ²Universidad Autónoma de Chihuahua, ³Instituto Politécnico Nacional-Centro de Biotecnología Genómica

5:15 p.m. PSVI-21 **Including Gene-edited Individuals in Genetic Evaluations Can Bias the Estimated Breeding Values of Their Progeny**
Leticia P. Sanglard ¹, Garret See ¹, Matthew L. Spangler ²
¹University of Nebraska - Lincoln, ²University of Nebraska-Lincoln

5:15 p.m. PSVI-13 **Nutritional Supplementation with Leftover Food of Dairy Cows upon Reproductive Response of Goats**
MA ANGELES DE SANTIAGO ¹, MARIA G. MACHADO ¹, Dalia Ivette Carrillo-Moreno ², Fernando Arellano-Rodríguez ², JUAN M. GUILLEN ¹, Viridiana Contrearras ¹, Francisco Gerardo Véliz-Deras ²
¹UAAAN, ²Universidad Autónoma Agraria Antonio Narro

5:15 p.m. PSVI-7 **Postmortem in vitro Culture of Cells from Visceral Organs Stored at 4°C in Small Ruminants**
Mahipal Singh ¹, Arunachala Shiv Kumar Reddy Kutagulla ¹
¹Fort Valley State University

5:15 p.m. PSVI-6 **Predicting Fecal Composition Using near Infrared Spectroscopy (NIRS): Expanding the Calibration to Include Grazing Beef Samples**

Jenilee F. Peters ¹, Mary Lou Swift ², Greg B. Penner ³, Bart Lardner ⁴, Timothy A. McAllister ⁵, Gabriel O. Ribeiro ³

¹Trouw Nutrition / University of Saskatchewan, ²Trouw Nutrition, ³Department of Animal and Poultry Science, University of Saskatchewan, ⁴University of Saskatchewan, ⁵Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

5:15 p.m. PSVI-10 **Preliminary Evaluation of Small Ruminant Production Systems in Mississippi and the Southern US**

Lindsey N. Dearborn ¹, Leyla Rios ², Rocky Lemus ³, Laura Downey ⁴, Gina Rico-Mendez ⁵, Joshua Maples ⁶, Michael Pesato ⁷, Jessica Graves ⁸

¹Animal and Dairy Sciences Department, Mississippi State University, ²Mississippi State University, ³Department of Plant and Soil Sciences, Mississippi State University, ⁴School of Human Sciences, ⁵Social Science Research Center, ⁶Department of Agricultural Economics, ⁷College of Veterinary Medicine, Mississippi State University, ⁸University Academic Advising Center

5:15 p.m. PSVI-2 **Relationship of Sperm Plasma Serine Protease Inhibitor (SERPINA5) and Dystroglycan (DAG1) Proteins with Dairy Bull Fertility**

Saulo Menegatti Zoca ¹, Julie Walker ¹, Adalaide Kline ², Taylor N. Andrews ³, Jerica JJ Rich ⁴, Kaitlin M. Epperson ⁵, Jessica N. Nora Drum ⁶, M. Sofia Ortega ⁶, George A. Perry ⁷

¹South Dakota State University, ²South Dakota State University Department of Animal Science, Brookings, SD, ³New Mexico State University, ⁴College of Agriculture, Arkansas State University, ⁵Department of Animal Science, Texas A&M University, College Station, TX, ⁶University of Missouri, ⁷Texas A&M AgriLife Research, Overton, TX

5:15 p.m. PSVI-3 **Reproductive Performance of Gilts Enrolled in the Batch Farrowing Ovugel Program Compared with Normal Breeding on Estrus Expression**

Mike E. Johnston ¹, Christopher L. Anderson ¹, Mark E. Swanson ¹, Stephen K. Webel ¹

¹United Animal Health

5:15 p.m. PSVI-4 **Serum Metabolomic Characterization of Birth Weight and Neonatal Nutrient Restriction on Piglet Growth and Development**

Michael O. Wellington ¹, Lucas A. Rodrigues ², Melissa A. Quinn ³, Josiane C. Panisson ¹, David P. Ferguson ³, Daniel A. Columbus ¹

¹Prairie Swine Centre, Inc., ²Prairie Swine Center, ³Michigan State University

5:15 p.m. PSVI-16 **The Essential Oil of Arnica Montana Positively Modulates the Fatty Acid Profile of Lamb Meat**

Paulo Cesar G Dias ¹, Evandro Maia M. Ferreira ¹, Isabela Jorge Santos ¹, Matheus Carlis ², Ana Carolina S Vicente ¹, Adrielly S a Silva ¹, Rhaissa G Assis ¹, Jamily H Comelli ¹, Janaina S S. Biava ¹, Leticia Carolina Bortolanza Soares ¹, Alexandre Vaz Pires ¹

¹ASAS, ²FZEA-USP

5:15 p.m. PSVI-5 **Treatment of Flunixin Meglumine and Prostaglandin E2 Had No Effect on Corpora Lutea of Beef Cows**

Jamie E. Larson ¹, Tate Johnson ¹, Rebecca M. Swanson ¹, Riley D. Messman ¹, Caleb O. Lemley ¹

¹Mississippi State University

Tuesday, June 28, 2022

Poster Session VII

7:00 AM - 8:00 AM

Exhibit Hall A

7:00 a.m. PSVII-1 **Effect of the Sequence of Feeding Forage and Concentrate-based Diets on Dry Matter Intake and Average Daily Gain of Growing Angus Bulls**

Carlee M. Salisbury¹, Abigail R. Rathert-Williams², Amanda Holder³, David Lalman¹, Andrew P. Foote¹

¹Oklahoma State University, ²University of Missouri, ³College of the Ozarks

7:00 a.m. PSVII-2 **Effects of Feeding a Starch or Pectin Supplement on Ruminant Parameters and Gas Production of Grazing Young Bulls**

Andressa S. Scholz Berca¹, Abmael Da Silva Cardoso², Natalia Vilas Boas Fonseca³, Ricardo Reis⁴, Luis O. Tedeschi⁵

¹Department of Animal Science/Texas A&M University, ²University of Florida, ³Universidade Estadual Paulista - Unesp, ⁴Sao Paulo State University (UNESP), ⁵Texas A&M University

7:00 a.m. PSVII-3 **Effects of Feeding Direct-fed Microbials on Digestibility and Rumen Fermentation Characteristics of Finishing Bos Indicus Cattle**

Bruno Garcia de Carvalho Dias¹, Murilo A. Meschiatti², Bárbara Brixner¹, Alecsander Almeida¹, Bruno I. Cappelozza³, Giuseppe Copani³, Paulo Ferreira⁴, Oscar Queiroz³, Flavio Santos¹

¹Department of Animal Science, "Luiz de Queiroz" College of Agriculture, University of São Paulo (USP), Piracicaba, SP, ²Inpasa Brasil, ³Chr. Hansen A/S, ⁴Chr Hansen BR

7:00 a.m. PSVII-4 **Effects of Feeding Direct-fed Microbials on Performance and Carcass Traits of Finishing Bos Indicus Cattle**

Bruno Garcia de Carvalho Dias¹, Murilo A. Meschiatti², Bárbara Brixner¹, Alecsander Almeida¹, Bruno I. Cappelozza³, Giuseppe Copani³, Paulo Ferreira⁴, Oscar Queiroz³, Flavio Santos¹

¹Department of Animal Science, "Luiz de Queiroz" College of Agriculture, University of São Paulo (USP), Piracicaba, SP, ²Inpasa Brasil, ³Chr. Hansen A/S, ⁴Chr Hansen BR

7:00 a.m. PSVII-5 **Effects of Hops Treatment on Nitrogen Retention of Composted Poultry Litter and Subsequent Rumen Fermentation**

YAMICELA CASTILLO-CASTILLO¹, Robin C. Anderson², MICHAEL E. HUME³, DAVID J. NISBET³, MICHAEL Flythe³, CLAUDIO ARZOLA-ALVAREZ¹, Claudio Angulo-Montoya⁴, Jaime Salinas-Chavira⁵, FRANCISCO CASTILLO-RANGEL¹, MONSERRATH FELIX-PORTILLO¹, MARINA ONTIVEROS-MAGADAN⁶, Oscar Ruiz-Barrera⁷

¹UNIVERSIDAD AUTONOMA DE CHIHUAHUA, ²USDA/ARS, Southern Plains Agricultural Research Center's Food & Feed Safety Research Unit, ³USDA/ARS, ⁴Universidad Autonoma de Sinaloa, ⁵Universidad Autonoma de Tamaulipas, ⁶UNIVERSIDAD AUTONOMA DE CIUDAD JUAREZ, ⁷Universidad Autónoma de Chihuahua

7:00 a.m. PSVII-6 **Effects of Hydroponically Sprouted Cereal Grains on Feedlot Performance, Blood Serum Chemistry, and Apparent Nutrient Digestibility in Beef Cattle**

Emmalee E. Slack¹, Duane E. Tidemann¹, Shawn Jenkins¹

¹HydroGreen Global

7:00 a.m. PSVII-7 **Effects of Minerals Source Supplementation on Performance and Carcass Production by Feedlot Cattle**

Maria B. Niehues¹, Alexandre Perdigão², Isabelle Errobidarte de Matos³, Daniel I. C. G. Gouvêa⁴, Victor Valério de Carvalho⁵, Tiago S. S. Acedo⁶, Luis Tamassia⁷, Cyntia L. L. Martins⁴, Mário B. D. B. Arrigoni⁴, Vinicius N. Gouvea⁸

¹São Paulo State University, Botucatu, Brazil, ²DSM Nutritional Products Brazil, ³Federal University of Mato Grosso do Sul, Campo Grande, Brazil, ⁴São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, ⁵dsm-firmenich, ⁶DSM Nutritional Products, ⁷DSM Nutritional Products Switzerland, ⁸Texas A&M AgriLife Research

7:00 a.m. PSVII-8 **Effects of Processed Saccharina Latissima and Ascophyllum Nodosum on Ruminant Fermentation and Methane Production in Continuous Culture**

Ashley W. Driemel¹, Lauren M. Baker¹, Miriam A. Snider¹, Kevin Posman², Charlotte Quigley², Nichole N. Price², Sabrina L. Greenwood¹

¹University of Vermont, ²Bigelow Laboratory for Ocean Sciences

7:00 a.m. PSVII-9 **Effects of Roughage Level on Animal behavior in Nelore Cattle Receiving a High Concentrate Diet Under Tropical Conditions**

Filipe Mendonca¹, Rodrigo Goulart², Matheus C. Garcia¹, Pedro Veiga Rodrigues Paulino³, Paulo Bortoleto Junior², Gustavo Seronni⁴, Julio C. Balieiro⁵, Dante Lanna⁶

¹Luiz de Queiroz College of Agriculture, ²FZEA-USP, ³Cargill, ⁴ESALQ/USP, ⁵FZEA/USP, ⁶University of São Paulo

7:00 a.m. PSVII-10 **Effects of Supplementing a Standardized Plant-derived Feed Additive Containing Isoquinoline Alkaloids on Rumen Lesions in Feedlot Cattle**

Rogelio Gómez Alarcón¹, Rafael Ruíz Arellano¹, Alejandro Piña², Gabriela Castellanos³, Cleverson De Souza³, Lucas Rigolin³, Santiago Bas³, Jorge Gómez Madrid², Flavio Ribeiro⁴

¹Rogan Soluciones Ganaderas, ²GABSA, ³Phytobiotics, ⁴Phytobiotics North America, LLC

7:00 a.m. PSVII-11 **Effects of Wheat Cultivars on Chemical Composition, in vitro Digestibility, and Rumen Fermentation Characteristic of Sprouted Grains**

seungmin Jeong¹, youngho joo², myeongji seo², seongshin Lee³, samchul kim²

¹Gyeongsang National University, ²Gyongsang National University, ³Korean National Institute of Animal Science

7:00 a.m. PSVII-12 **Efficacy of Formic Acid as a Silage Preservative on Dairy Cattle Performance**

Guilherme L. Menezes¹, Alan Oliveira², Lúcio Gonçalves², Luiz Ferraretto¹, João Dorea¹, Diogo Jayme²

¹University of Wisconsin, ²Federal University of Minas Gerais

7:00 a.m. PSVII-13 **Evaluation of Ginkgo Leaf as a Feed for Ruminants by Using in vitro Gas Production Technique**

Lin Wang¹, Miao Lin¹, Yuwei Yang¹, Dalin Liu¹, Guoqi Zhao¹

¹Yangzhou University

7:00 a.m. PSVII-14 **Evaluation of Precision Feeding on Production Efficiency Responses in Finishing Beef Cattle**

Warren C. Rusche¹, Zachary K. Smith¹, Santana Hanson¹

¹South Dakota State University

7:00 a.m. PSVII-15 **Evaluation of the Effects of Hormonal Implants on Efficiency, and Water Footprint of Feedlot Steers**

Tio Brody¹, Arturo Macias Franco², Aghata Silva³, Mozart A. Fonseca¹

¹University of Nevada, Reno, ²University of Nevada Reno, ³Auburn University

7:00 a.m. PSVII-16 **Evaluation of the Population Profile of Methanogenic Microorganisms in Animals Treated with the Additive Fator P**

Luis Ferreira¹, Andre Daurea¹, Wellington Araújo¹, Lauriston Bertelli¹, Felipe Nishimura², Ana Saltoratto²

¹Premix Company, ²Ribeirão Preto University

7:00 a.m. PSVII-17 **Feeding Behavior of Beef Feedlot Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures**

Alejandra M. Lopez¹, Jhones O. Sarturi¹, Darren D. H. Henry², Bradley J. Johnson¹, Kaliu Gabriel Scaranto Silva¹, Kaue Tonelli Nardi¹, Camron J. Rush¹, Barbara Rodrigues¹, Sarah Peters¹

¹Texas Tech University, ²University of Georgia

7:00 a.m. PSVII-18 **Feeding Behavior of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System**

Camron J. Rush¹, Jhones O. Sarturi¹, Darren D. H. Henry², Francine M. Messias Ciriaco², Nelson O. Huerta-Leidenz¹, Alejandra M. Lopez¹, Kaliu Gabriel Scaranto Silva¹, Kaue Tonelli Nardi¹, Sarah Peters¹, Mikala Di Manna³, Andrea M. Osorio-Doblado², Kymberly Coello², Angel A. Quijada², Jordan Hinds¹, Yasmim Saes¹, Whitney L. Crossland¹

¹Texas Tech University, ²University of Georgia, ³New Mexico State University

7:00 a.m. PSVII-19 **Feeding Behavior of Feedlot Beef Steers Consuming Finishing Diets with an Added Nutritional Packet**

Kaue Tonelli Nardi¹, Kaliu Gabriel Scaranto Silva¹, Jhones O. Sarturi¹, Darren D. H. Henry², Whitney L. Crossland¹, Luis O. Tedeschi³, Egleu D. M Mendes⁴

¹Texas Tech University, ²University of Georgia, ³Texas A&M University, ⁴Texas A&M University / Department of Animal Science

7:00 a.m. PSVII-20 **Hepatic Mrna Expression of Nutrient and Mitochondrial Energy Metabolism Genes in Beef Steers Selected for Low or High Residual Feed Intake**

Godstime A. Taiwo¹, Modoluwamu Idowu¹, Andres A. Pech-Cervantes², Zaira M. Estrada-Reyes³, Ibukun M. Ogunade¹

¹West Virginia University, ²Fort Valley State University, ³North Carolina A & T University

CSAS Graduate Student Oral Competition: MS

Chair: Obioha Durunna, Department of Applied Research, Lakeland College Vermilion

8:00 AM - 11:45 AM

302A

8:00 a.m. 154 **Supplementation of Late Gestation Metabolizable Energy in Beef Cows Reduces Mobilization of Body Reserves Prepartum**

Emily Croft¹, Koryn S. Hare², Katharine M. Wood¹, Greg B. Penner³, Michael A. Steele⁴

¹University of Guelph, ²Department of Animal Bioscience, University of Guelph, ³Department of Animal and Poultry Science, University of Saskatchewan, ⁴Department of Animal Biosciences, University of Guelph

8:15 a.m. 153 **Phenotypic Selection of Efficient Beef Cows and Differences in Digestive Physiology**

Justin J. Delver¹, John J. McKinnon², Herbert A. Lardner², Gabriel O. Ribeiro², Greg B. Penner²

¹University of Saskatchewan, ²Department of Animal and Poultry Science, University of Saskatchewan

8:30 a.m. 147 **The Effects of Creatine Monohydrate and Guanidinoacetic Acid Supplementation on Bovine Satellite Cells**

Erika P. Eckhardt¹, WonSeob Kim¹, Jongkyoo Kim¹

¹Michigan State University

8:45 a.m. 148 **Effect of Increasing Sodium Sulfate in Water on Intake on Ruminal Fermentation and the in vitro Effect of Bismuth Subsalicylate on Gas Production and NDF Digestibility**

Mikaela G. Evans¹, Gabriel O. Ribeiro², Darren D. H. Henry³, Jordan A. Johnson⁴, John R. Campbell⁵, Cheryl Waldner⁶, Greg B. Penner²

¹Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, ²Department of Animal and Poultry Science, University of Saskatchewan, ³University of Georgia, ⁴Government of Saskatchewan, Ministry of Agriculture, ⁵Department of Large Animal Clinical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, ⁶Western College of Veterinary Medicine, University of Saskatchewan

9:00 a.m. 159 **Effect of Dry or Temper Rolling of High or Low Protein Wheat and Its Impact on Rumen Parameters, Liver Abscesses, and Growth Performance of Feedlot Cattle**

Amanda C. Meadows¹, Stephanie A. Terry², Greg B. Penner³, Tim A. McAllister⁴, Gabriel O. Ribeiro³

¹University of Saskatchewan, ²Agriculture and Agri-Food Canada, ³Department of Animal and Poultry Science, University of Saskatchewan, ⁴Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

9:15 a.m. 155 **Effect of Forage Inclusion Strategy on Finishing Beef Cattle Performance and Liver Abscesses**

Tyen J. Paterson¹, Greg B. Penner², Herbert A. Lardner², Emma Stephens³, Robert J. Gruninger⁴, Wenzhu Yang⁴, Karen A. Beauchemin³, Tim A. McAllister⁴, Gabriel O. Ribeiro²

¹University of Saskatchewan, ²Department of Animal and Poultry Science, University of Saskatchewan, ³Agriculture and Agri-Food Canada, ⁴Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

9:30 a.m. 158 **Predicting Intake and Digestibility of Nutrients in Beef Cattle Fed High Forage Diets Using near Infrared Spectroscopy (NIRS) of Feces and Internal Markers**

Jenilee F. Peters¹, Mary Lou Swift², Greg B. Penner³, Herbert A. Lardner³, Timothy A. McAllister⁴, Gabriel O. Ribeiro³

¹Trouw Nutrition / University of Saskatchewan, ²Trouw Nutrition, ³Department of Animal and Poultry Science, University of Saskatchewan, ⁴Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

9:45 a.m. **CSAS Graduate Student Oral Competition: MS Break**

10:00 a.m. 152 **Effect of Continuous or Intermittent Feeding of Ergot Contaminated Grain in a Mash or Pelleted Form on the Performance of Backgrounding Beef Steers**

Matthew R. Reynolds ¹, Kim Stanford ², Daniela M. Meléndez ³, Karen S. Schwartzkopf-Genswein ³, Timothy A. McAllister ³, Barry R. Blakley ⁴, John J. McKinnon ⁵, Gabriel O. Ribeiro ⁵

¹University of Saskatchewan, ²Biological Sciences Department, University of Lethbridge,

³Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada,

⁴Department of Veterinary Biomedical Sciences, University of Saskatchewan, ⁵Department of Animal and Poultry Science, University of Saskatchewan

10:15 a.m. 157 **Comparison of Reproductive and Early Growth Performance of an F1 USDA Prime Yield Grade One Carcass Clone Sire and an Industry-leading Purebred Sire in the Beef X Dairy Production System**

Katylyn J. Richardson ¹, David G. Lust ¹, Ty E. Lawrence ¹, Tommy L. Perkins ¹

¹West Texas A&M University

10:30 a.m. 156 **Effect of Increasing Levels of Ergot Alkaloids in the Diet of Feedlot Cattle**

Jenna M. Sarich ¹, Kim Stanford ², Karen S. Schwartzkopf-Genswein ³, Tim A. McAllister ³, Barry R. Blakley ⁴, Greg B. Penner ⁵, Gabriel O. Ribeiro ⁵

¹University of Saskatchewan, ²Biological Sciences Department, University of Lethbridge,

³Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada,

⁴Department of Veterinary Biomedical Sciences, University of Saskatchewan, ⁵Department of Animal and Poultry Science, University of Saskatchewan

10:45 a.m. 146 **Effect of Short-term Nutritional Increase 30 Days Prior to Artificial Insemination on ADG and Reproductive Efficiency in Beef Heifer Development Systems**

Landon F. Tadich ¹, Rick N. Funston ¹

¹University of Nebraska, West Central Research and Extension Center, North Platte 69101

11:00 a.m. 150 **Effects of Annual and Perennial Forage Systems on Forage Biomass and Quality, Grazing Animal Performance, and Enteric Methane Emissions**

Megan Wasden ¹, Gabriel O. Ribeiro ², Daalkhajav Damiran ¹, Bill Biligetü ³, Kathy A. Larson ⁴, Herbert A. Lardner ²

¹Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK,

Canada, S7N 5A8, ²Department of Animal and Poultry Science, University of Saskatchewan,

³Department of Plant Sciences, University of Saskatchewan, ⁴Department of Agricultural and Resource Economics, University of Saskatchewan

11:15 a.m. 149 **Differences in Gene Expression Following Natural Exposure to Gastrointestinal Parasites Between Sheep Selected for High Innate Responses and High Antibody-mediated Adaptive Immune Responses**

Olivia B. Willoughby ¹, Emma Borkowski ², Samantha Dixon ³, Samla M F Cunha ¹, Victoria Asselstine ³, Andrew S. Perergrine ², Paula I. Menzies ⁴, Niel A. Karrow ¹, Angela Cánovas ¹

¹Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada, ²Ontario Veterinary College, University of Guelph, Department of Pathobiology, ³Department of Animal Biosciences, University of Guelph,

⁴Ontario Veterinary College, University of Guelph, Department of Population Medicine

11:30 a.m. 151 **Energy Metabolism, Digestive and Absorptive Capacity, and Fecal Microbiome of Nursery Piglets Selected for Feed Efficiency**

Yujia Wu ¹, Paula Azevedo ², Shunshun Jin ³, Xiaoya Zhao ³, Haoxiang Xu ², Huaigang lei ⁴, Argenis Rodas-Gonzalez ⁵, Charles Martin Nyachoti ⁵, chengbo Yang ⁶

¹The University of Manitoba, Department of Animal Science, ²Department of Animal Science, University of Manitoba, ³University of Manitoba, Department of Animal Science, ⁴Topigs Norsvin Canada Inc., ⁵University of Manitoba, ⁶Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

**Beef Species and Ruminant Nutrition Symposium III:
Implications of Gut Health in Ruminant Nutrition**

Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC
8:00 AM - 12:00 PM
Ballroom B

8:00 a.m. **Beef Species and Ruminant Nutrition Symposium III Introduction**

8:05 a.m. 99 **Why Should the Beef Industry Be Concerned About Gut Health?**

Greg B. Penner ¹

¹Department of Animal and Poultry Science, University of Saskatchewan

8:45 a.m. 100 **Gut Inflammation: Fanning Non-specific Flames That Impact Health and Performance**

Megan A. Abeyta ¹, Lance H. Baumgard ¹, Todd R. Callaway ²

¹Iowa State University, ²University of Georgia

9:25 a.m. 97 **Immunology and the Gut: The Key to Animal Health**

Chris Chase ¹

¹South Dakota State University

10:05 a.m. **Beef Species and Ruminant Nutrition Symposium III Break**

10:20 a.m. 98 **Gut Microbiome: Implications on Gut Health**

T.G. Nagaraja ¹

¹Kansas State University College of Veterinary Medicine

11:00 a.m. 101 **Intestinal Barrier Dysfunction: Causes and Metabolic Consequences**

Sara K. Kvidera ¹

¹Elanco Animal Health

11:40 a.m. **Beef Species and Ruminant Nutrition Symposium III Q&A**

Poster Session VIII

8:15 AM - 9:15 AM

Exhibit Hall A

8:15 a.m. PSVIII-9 **Effect of Garlic Extracts on Galectin Protein Secretion in St. corix Sheep Blood**

SreeNavya Inupala ¹, Sowmya Jagana ¹, Priyanka Pande ¹, MD Rasel Uzzaman ¹, Mulumebet Worku ¹

¹NC A&T State University

8:15 a.m. PSVIII-1 **Hy-d Increases Ca, P and Serum Metabolites Related to Growth in Grazing Animals Receiving a P Deficient Supplement**

Fernanda Simões Mudado ¹, Alexandre Perdigão ², Melissa Barreto Silveira ¹, Isabelle Errobidarte de Matos ³, Aline Gomes da Silva ³, Henrique Jorge Fernandes ³, Tiago S. S. Acedo ⁴, Victor Valério de Carvalho ⁵

¹Federal University of Mato Grosso do Sul, ²DSM Nutritional Products Brazil, ³Federal University of Mato Grosso do Sul, Campo Grande, Brazil, ⁴DSM Nutritional Products, ⁵dsm-firmenich

8:15 a.m. PSVIII-2 **Hy-d Increases Performance of Grazing Nellore Young Bulls Receiving Protein Supplement in the Growing Phase**

Melissa Barreto Silveira ¹, Fernanda Simões Mudado ¹, Alexandre Perdigão ², Isabelle Errobidarte de Matos ³, Aline Gomes da Silva ³, Henrique Jorge Fernandes ³, Victor Valério de Carvalho ⁴, Tiago S. S. Acedo ⁵

¹Federal University of Mato Grosso do Sul, ²DSM Nutritional Products Brazil, ³Federal University of Mato Grosso do Sul, Campo Grande, Brazil, ⁴dsm-firmenich, ⁵DSM Nutritional Products

8:15 a.m. PSVIII-3 **Hy-d Increases Performance of Nellore Cattle Finished on Pastures with Protein-energetic Supplement**

Diego Magnum Maifrede dos Santos ¹, Thomas Henrique Roque da Silva ¹, Alexandre Perdigão ², Isabelle Errobidarte de Matos ³, Victor Valério de Carvalho ⁴, Aline Gomes da Silva ³, Henrique Jorge Fernandes ³, Tiago S. S. Acedo ⁵

¹State University of Mato Grosso do Sul, ²DSM Nutritional Products Brazil, ³Federal University of Mato Grosso do Sul, Campo Grande, Brazil, ⁴dsm-firmenich, ⁵DSM Nutritional Products

8:15 a.m. PSVIII-4 **Impact of Different Forage Allowances During the Middle and Late Thirds of Pregnancy of Nellore Dams Pregnant with Female Calves on Dam Performance**

Luciana Melo Sousa ¹, Ivanna M. Oliveira ², William L. L. Souza ³, Karla A. Oliveira ⁴, Iorrano A. A. Cidrini ⁵, Henrique R. Nogueira ⁶, Laura Franco Prados ⁷, Flávio Dutra de Resende ⁷, Gustavo Rezende Siqueira ⁷

¹UNESP / APTA, ²FAZU, ³São Paulo State University, Jaboticabal, Brazil, ⁴Unesp - FCAV, Jaboticabal, SP, Brazil, ⁵Montana State University, ⁶Cargill, ⁷APTA

8:15 a.m. PSVIII-5 **Impact of Forage Allowance During Mid- to Late-gestation on the Performance of the Cow/calf Pair**

William L. L. Souza ¹, Luciana Melo Sousa ², Iorrano A. A. Cidrini ³, German Ramirez-Zamudio ⁴, Laura Franco Prados ⁵, Ivanna M. Oliveira ⁶, Gustavo Rezende Siqueira ⁵, Flávio Dutra de Resende ⁵

¹São Paulo State University, Jaboticabal, Brazil, ²UNESP / APTA, ³Montana State University, ⁴Universidade Federal de Lavras, Brazil, ⁵APTA, ⁶PhD, Teacher FAZU - Faculdades Associadas de Uberaba

8:15 a.m. PSVIII-6 **Impact of Naturally Occurring Water with High Sulfate Concentration on Feed and Water Intake, Growth, and Trace Mineral Status of Beef Cattle**
Murillo C. Pereira ¹, Catherine M. Lang ², Dwayne Summach ², Jordan A. Johnson ³, Greg B. Penner ⁴

¹Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada S7N 5A8, ²Saskatchewan Ministry of Agriculture, ³Government of Saskatchewan, Ministry of Agriculture, ⁴Department of Animal and Poultry Science, University of Saskatchewan

8:15 a.m. PSVIII-7 **Impact of Virginiamycin on Rumen Fermentation and Methane Production in a Lactation Diet**

Yun Jiang ¹, Brooke Humphrey ², Miriam Garcia ³

¹Kentucky State University, ²Phibro Animal Health Corporations, ³Phibro Animal Health

8:15 a.m. PSVIII-8 **Impacts of Phosphorus Intake on Beef Heifer Growth Performance and Conception Rates**

Robin A. Cheek ¹, Beth B. Kegley ², Jeremy G. Powell ¹, Kirsten A. Midkiff ¹, Jana L. Reynolds ¹, Benjamin P. Shoulders ¹, Haley Hilfiker ³

¹University of Arkansas System Division of Agriculture, ²University of Arkansas Division of Agriculture, ³University of Missouri

8:15 a.m. PSVIII-10 **In vitro Incubation with a Bacillus-based Direct-fed Microbial Improves Forage Digestibility Parameters**

Liyi Pan ¹, Karen Harper ², Bruno I. Cappelozza ³, Giuseppe Copani ³, Oscar Queiroz ³

¹University of Queensland, ²The University of Queensland, ³Chr. Hansen A/S

8:15 a.m. PSVIII-11 **In vitro Incubation with a Bacillus-based Direct-fed Microbial Improves Starch Digestibility**

Liyi Pan ¹, Karen Harper ², Bruno I. Cappelozza ³, Giuseppe Copani ³, Oscar Queiroz ³

¹University of Queensland, ²The University of Queensland, ³Chr. Hansen A/S

8:15 a.m. PSVIII-12 **Influence of Colostrum Insulin Supplementation on Brush Border Carbohydrase Activity in Neonatal Holstein Bulls**

Mustapha Yusuf ¹, Koryn S. Hare ², Michael Nagorske ³, Katharine M. Wood ⁴, Michael A. Steele ⁵, Kendall C. Swanson ¹

¹North Dakota State University, ²Department of Animal Bioscience, University of Guelph, ³The Saskatoon Colostrum Company Ltd., ⁴University of Guelph, ⁵Department of Animal Biosciences, University of Guelph

8:15 a.m. PSVIII-13 **Influence of Propionibacteria Acidipropionici on Short Chain Fatty Acid and Methane Production in Fistulated Beef Steers**

Jonah R. Levenson ¹, Roderick Gonzalez Murray ², Gabriel Garcia ¹, Evo Davila ², Miranda L. Zuvich ¹, Ryan J. Gifford ¹, ryne haggard ², Erlene Chek ¹, meghan P. Thorndyke ¹, Octavio Guimaraes ¹, Harrison D. Hallmark ³, Huey Yi Loh ¹, Briana V. Tangredi ¹, John J. Wagner ¹, Terry E. Engle ¹, Richard Goodall ⁴

¹Colorado State University, ²researcher, ³Colorado State University, Department of Animal Sciences, ⁴sponcer

8:15 a.m. PSVIII-14 **Investigating Variability of Spent Craft Microbreweries Grains for Classification and Incorporation into Diet Formulation Through Multivariate Analyses**

Macy L. Rockwell¹, Arturo Macias Franco², Aghata Silva³, Mozart A. Fonseca¹

¹University of Nevada, Reno, ²University of Nevada Reno, ³Auburn University

8:15 a.m. PSVIII-15 **Is There Any Relationship Between Metabolize Energy and Fecal Starch in Nelore Cattle Under High Grain Finishing Diets?**

Filipe Mendonca¹, Matheus Carlis², Matheus C. Garcia¹, Rafael Afonso³, Joao Leone³, Rodrigo Goulart², Dante Lanna⁴

¹Luiz de Queiroz College of Agriculture, ²FZEA-USP, ³ESALQ/USP, ⁴University of São Paulo

8:15 a.m. PSVIII-16 **Metagenomic Analyses of Microbial and Carbohydrate-active Enzymes in the Rumen of Holstein Steers Supplemented with Seeds of Pharbitis Nil**

Rajaraman Bharanidharan¹, Jun Suk Byun², Kyoung Hoon Kim³

¹College of Agriculture and Life Sciences, Seoul National University, ²Graduate School of International Agricultural Technology, Seoul National University, ³Seoul National University

8:15 a.m. PSVIII-21 **Modulation of Goat Plasma Proteins Using Different Preparations of Garlic**

Sowmya Jagana¹, SreeNavya Inupala¹, Priyanka Pande¹, MD Rasel Uzzaman¹, Mulumebet Worku¹

¹NC A&T State University

8:15 a.m. PSVIII-17 **Nutrient Digestibility of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System**

Camron J. Rush¹, Jhones O. Sarturi¹, Darren D. H. Henry², Francine M. Messias Ciriaco², Nelson O. Huerta-Leidenz¹, Whitney L. Crossland¹, Alejandra M. Lopez¹, Kaliu Gabriel Scaranto Silva¹, Kaue Tonelli Nardi¹, Andrea M. Osorio-Doblado², Sarah Peters¹, Mikala Di Manna³, Jordan Hinds¹, Yasmim Saes¹, Barbara Rodrigues¹, Angel A. Quijada², Kymberly Coello²

¹Texas Tech University, ²University of Georgia, ³New Mexico State University

8:15 a.m. PSVIII-18 **Nutrient Digestibility of Feedlot Beef Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures**

Alejandra M. Lopez¹, Jhones O. Sarturi¹, Darren D. H. Henry², Francine M. Messias Ciriaco², Bradley J. Johnson¹, Kaliu Gabriel Scaranto Silva¹, Kaue Tonelli Nardi¹, Camron J. Rush¹, Barbara Rodrigues¹, Sarah Peters¹, Mikala Di Manna³

¹Texas Tech University, ²University of Georgia, ³New Mexico State University

8:15 a.m. PSVIII-20 **Patatin-like Phospholipase Domain-containing Protein 3 Abundance Is Affected by Knockdown of Sterol Regulatory Element-binding Protein 1c but Not of Carbohydrate Response Element Binding Protein**

Sophia J. Kendall¹, Heather M. White¹

¹University of Wisconsin-Madison

8:15 a.m. PSVIII-19 **Predict Indigestible Fiber Fraction of Barley Plant Silage by Using Non-destructive Mid-ir vs Near-ir Spectroscopic Techniques**

B. Refat¹, P. Yu²

¹CSAS, ASAS, ²ASAS, CSAS, ADSA

Cell Biology Symposium: Cellular and Molecular Effects of Heat Stress

Chair: Kristen Govoni, Dept. of Animal Science, University of Connecticut; Sarah Potts,
University of Maryland Extension

8:30 AM - 11:00 AM

205 A/B

8:30 a.m. **Cell Biology Symposium Introduction**

8:35 a.m. 102 **Insights Into the Molecular Underpinnings of Disrupted Mammary Development and Function Arising from Late-Gestation Heat Stress**

Jimena Laporta ¹

¹University of Wisconsin-Madison

9:20 a.m. 103 **Genetic Dissection of Host Response to Heat Stress in Poultry: an “omic” Approach**

Huaijun Zhou ¹

¹University of California, Davis

10:05 a.m. 400 **Improving Heat Stress Resilience to Reduce the Negative Effects of Pre- and Postnatal Heat Stress in Swine**

Jay S. Johnson ¹, Luiz F. Brito ², Christian Maltecca ³, Francesco Tiezzi ⁴

¹USDA-ARS Livestock Behavior Research Unit, ²Purdue University, ³Department of Animal Science, North Carolina State University, Raleigh, USA, ⁴North Carolina State University

10:50 a.m. **Cell Biology Symposium Q&A**

Animal Breeding and Genetics: Recent Advances

Chair: Christine Baes, Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Institute of Genetics, Vetsuisse Faculty, University of Bern, Bern, Switzerland

8:30 AM - 12:00 PM

301 A/B

8:30 a.m. **Animal Breeding and Genetics: Recent Advances Introduction**

8:35 a.m. 41 **Awardee Talk: Synergistic Power of Genomic Selection, Assisted Reproductive Technologies, and Gene Editing to Drive Genetic Improvement of Cattle**

Maci L. Mueller ¹, Alison L. Van Eenennaam ²

¹University of California, Davis, ²University of California, Davis Department of Animal Science

9:05 a.m. 31 **Genotype Concordance Between SNP Chip and Imputed Low-pass Whole-genome Sequence in Beef Cattle**

Leticia P. Sanglard ¹, Larry A. Kuehn ², Warren M. Snelling ³, Matthew L. Spangler ⁴

¹University of Nebraska - Lincoln, ²U.S. Meat Animal Research Center, ³USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center, ⁴University of Nebraska-Lincoln

9:20 a.m. 40 **The Impact of Sire EBV for Growth and Feed Intake on Pig Activity Level Using Nutrack**

Dalton R. Obermier¹, Tom Rathje², Ty B. B. Schmidt³, Benny E. Mote⁴

¹University of Nebraska - Lincoln, ²DNA Swine Genetics, ³University of Nebraska-Lincoln,

⁴Department of Animal Science, University of Nebraska – Lincoln

9:50 a.m. 38 **Effect of Breed Composition and Genome-wide Association Study on Epidermis Thickness in a Multibreed Angus-brahman Population**

Andrea N. Nunez Andrade¹, Aakilah Hernandez¹, Eduardo E. Rodriguez¹, Kaitlyn M. Sarlo Davila², Raluca G. Mateescu¹, Eduardo Rodriguez¹

¹University of Florida, ²ORISE/NADC

10:05 a.m. **Animal Breeding and Genetics: Recent Advances Break**

10:15 a.m. 42 **Awardee Talk: Utilizing Genomics to Understand Skeletal and Mammary Development in Pigs**

Gary A. Rohrer¹, Hiruni R. Wijesena¹, Brittney N. Keel¹, Warren M. Snelling², Clay A. Lents³

¹USDA, ARS, U.S. Meat Animal Research Center, ²USDA, ARS, Roman L Hruska U.S. Meat Animal Research Center, ³USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit

10:45 a.m. 36 **Exploring the Statistical Nature of Independent Chromosome Segments**

Mary Kate Hollifield¹, Matias Bermann¹, Daniela Lourenco¹, Ignacy Misztal¹

¹University of Georgia

11:00 a.m. 39 **Genetic Associations Between Feeding Behavior and Economic Interest Traits in Group-housed Broilers**

Anderson A. Carvalho Alves¹, Arthur F. Araujo Fernandes², Fernando B. Lopes², Vivian Breen², Rachel Hawken², Guilherme J. M. Rosa³

¹Department of Animal and Dairy Sciences, University of Wisconsin - Madison, ²Cobb-Vantress, Inc., ³University of Wisconsin-Madison

11:15 a.m. 33 **Genetic Evaluation of Show Jumping Performance in the Irish Sport Horse**

Jennifer L. Doyle¹, Alan G. Fahey¹

¹University College Dublin

11:30 a.m. 34 **A Comparison of International Genetic Evaluations of Show Jumping in Sport Horses**

Jennifer L. Doyle¹, Christopher Carroll¹, Alison Corbally², Alan G. Fahey¹

¹University College Dublin, ²Horse Sport Ireland

11:45 a.m. 37 **Associations Among Individual Gilt Birth Weight with Subsequent Weights, Selection Rates, and Age to Reach 135 Kg**

Gefferson Silva¹, Carine M. Vier², Amanda P. Siqueira¹, Ray Gonsalves¹, Fernanda Almeida³, Vanderlei Zappani⁴, Evandro Beraldin⁴, Geraldo C. Alberton⁵, Daiane Donin⁶, Ning Lu⁷, Steve Dritz², Uislei A. Orlando²

¹Agroceres PIC, ²PIC North America, ³UFMG, ⁴Lar Cooperativa Agroindustrial, ⁵Federal University of Parana (Campus Palotina), ⁶UFPR, ⁷PIC China

**Comparative Gut Physiology Symposium:
Redefining Gut Barrier Function in Animal Biosciences**

Chair: Michael Steele, Department of Animal Biosciences, University of Guelph
8:30 AM - 12:00 PM
206 A/B

8:30 a.m. **Comparative Gut Physiology Symposium Introduction**

8:35 a.m. 139 **Calcium-sensing Receptor and the Regulation of Nutrient Absorption and Gut Health in Pigs**

chengbo Yang¹, Xiaoya Zhao²

¹Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada,

²University of Manitoba, Department of Animal Science

9:10 a.m. 140 **Redefining Gut Barrier Function for Beef and Dairy Cattle**

Greg B. Penner¹

¹Department of Animal and Poultry Science, University of Saskatchewan

9:45 a.m. **Comparative Gut Physiology Symposium Break**

10:00 a.m. 136 **Intestinal Barrier Function: Physiological Regulation, Injury, and Repair in Horses and Swine**

Anthony T. Blikslager¹

¹North Carolina State University College of Veterinary Medicine

10:35 a.m. 138 **Age-dependent Intestinal Barrier Repair in Suckling Pigs: A Comparative Model to Improve Neonatal Gastrointestinal Health Across Species**

Amanda L. Ziegler¹

¹North Carolina State University

11:10 a.m. 137 **Standing in the Gap of Neonatal Microbe-host Barrier Function**

Douglas Burrin¹, Valeria Melendez Heib²

¹USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine, ²Baylor College of Medicine

11:45 a.m. **Comparative Gut Physiology Symposium Q&A**

Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition

Chair: Charles Aldrich, Kansas State University

9:30 AM - 12:15 PM

301 C/D

9:30 a.m. **Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition Introduction**

9:45 a.m. 131 **Rendering Effects on Pet Food Ingredients**

David L. Meeker¹

¹North American Renderers Association

10:15 a.m. 129 **Protein and Amino Acid Modifications During Extrusion**

Guido Bosch ¹

¹Wageningen University & Research

10:45 a.m. **Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition Break**

11:00 a.m. 130 **The Raw Truth: Feeding Zoo-Housed Carnivores**

Katherine Kerr ¹, Mathew Brooks ²

¹Comparative Nutritionist, ²Animals Nutrition Consulting, LLC; NomNomNow, Inc.

11:30 a.m. 399 **Introduction to Freeze Drying**

Jared Ducklow ¹, Gerrit Meidl ¹

¹Parker Freeze Dried

12:00 p.m. **Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition Discussion**

Poster Session IX

12:00 PM - 1:00 PM

Exhibit Hall A

12:00 p.m. PSIX-19 **Characterizing Apical-out Chicken Intestinal Organoids Grown in a Microcavity Culture Plate**

Lorik Tamazian ¹, Liang-en Yu ¹, Yihang Li ¹, Erin E. Connor ¹

¹University of Delaware

12:00 p.m. PSIX-20 **nrf2 Pathway Mediates Resistance to Weaning Stress-induced Intestinal Injury in Piglets of Different Breeds**

Ying-chao Qin ¹, Geng-xiu Zan ¹, Su-juan Ding ², Chun-qi Gao ¹, Hui-chao Yan ¹, Xiang-feng Kong ², Xiu-qi Wang ³

¹College of Animal Science, South China Agricultural University, ²Hunan Provincial Key Laboratory of Animal Nutritional Physiology and Metabolic Process, ³College of Animal Science, South China Agricultural University

12:00 p.m. PSIX-1 **Predicting Beef Cattle Dry Matter Intake**

Nathan Blake ¹, Matthew Walker ¹, Ida Holaskova ¹, Jason Hubbart ¹, Domingo Mata-Padrino ¹, Ibukun M. Ogunade ¹, Kelsie Sanders ¹, Tylor J. Yost ¹, Matthew E. Wilson ¹

¹West Virginia University

12:00 p.m. PSIX-2 **Residual Effect of Narasin on Ruminal Fermentation Characteristics in Steers**

Leticia Carolina Bortolanza Soares ¹, Daniel M M. Polizel ¹, Marcelo baggio ¹, Paulo Cesar G Dias ¹, Joel G de Oliveira Junior ¹, Gustavo Mendonça ¹, Mariana Jeronymo ¹, Evandro Maia M. Ferreira ¹, Isabela Jorge Santos ¹, Natasha B Petrenko ¹, Alexandre Vaz Pires ¹

¹ASAS

12:00 p.m. PSIX-3 **Rumen bacteria Composition Between Pre-weaning and Post-weaning Dairy Calves**

Zhang Xinyu ¹, Shengli Li ²

¹China agricultural university, ²China Agricultural University

12:00 p.m. PSIX-4 **Rumen Microbial Meta-proteome and Milk Whey Proteome in Holstein Cows Fed with High Starch and Low Fiber Diet**

Bharath Mulakala ¹, Katherine Smith ², Miriam A. Snider ³, Mallory Honan ⁴, Ariel Ayers ¹, Sabrina L. Greenwood ³

¹The University of Vermont, ²William H. Miner Agricultural Research Institute, ³University of Vermont, ⁴University of California

12:00 p.m. PSIX-5 **Ruminal Papillae Morphology and Volatile Fatty Acid Profile of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System**

Sarah Peters ¹, Jhones O. Sarturi ¹, Camron J. Rush ¹, Luana Felizari ¹, Darren D. Henry ¹, Nelson O. Huerta-Leidenz ¹, Dale R. Woerner ¹, Barbara Rodrigues ¹, Alejandra M. Lopez ¹, Kaliu Gabriel Scaranto Silva ¹, Kaue Tonelli Nardi ¹, Katherine Wilkes ¹

¹Texas Tech University

12:00 p.m. PSIX-6 **Ruminal Tissue Morphology of Beef Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures**

Alejandra M. Lopez ¹, Katherine Wilkes ¹, Jhones O. Sarturi ¹, Darren D. H. Henry ², Bradley J. Johnson ¹, Kaliu Gabriel Scaranto Silva ¹, Camron J. Rush ¹, Barbara Rodrigues ¹, Sarah Peters ¹, Angela Camarillo ¹

¹Texas Tech University, ²University of Georgia

12:00 p.m. PSIX-7 **Sorghum Silage: Effects of Processing on Performance of Backgrounding Beef Cattle**

Leandro O. Abdelhadi ¹, Guillermo Mattioli ², Nicolas DiLorenzo ³

¹FCV-UNLP, UF-NFREC, ²Universidad Nacional de La Plata, ³Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

12:00 p.m. PSIX-8 **Supplementing a Natural Citrus Flavonoid Extract (Bioflavex) to Finishing Cattle**

Melina Silvero ¹, Francisco Crespo ², Maria del Mar Serra Pesquer ², Elisa Perez Bayo ², Igor Fernández Peñarrubia ², Alejandro Palladino ³, Rodolfo Fattore ³, Rafael A. Palladino ⁴

¹Facultad de Agronomía UBA, ²HealthTech Bio Actives, S.L.U., ³Eurotec Nutrition Argentina, ⁴CONICET

12:00 p.m. PSIX-9 **The Effect of Endophyte-infected Tall Fescue Seed Consumption on Gut and Satiety Hormones Related to Intake in Holstein Steers**

Mindy E. King ¹, Hannah M. Herzing ², Kyle R. McLeod ³, James L. Klotz ⁴, David L. Harmon ³

¹Oklahoma State University, ²University of Kentucky, ³University of Kentucky Department of Animal & Food Sciences, ⁴Forage-Animal Production Research Unit, USDA-ARS

12:00 p.m. PSIX-10 **The Effect of NDF from Forage Levels on Metabolize Energy Intake and Fecal Starch in Nelore Cattle**

Filipe Mendonca ¹, Matheus Carlis ², Guilherme Zulim ³, Leonardo Ferreira ³, Joao Ventorin ³, Matheus C. Garcia ¹, Paulo Bortoleto Junior ², Victor Aguiar ³, Dante Lanna ⁴

¹Luiz de Queiroz College of Agriculture, ²FZEA-USP, ³ESALQ/USP, ⁴University of São Paulo

12:00 p.m. PSIX-11 **The Effect of Probiotic Supplementation on the Alpha Diversity and Proteobacteria Ratio in South African Feedlot Cattle in the Finisher Phase**

Dina A. Linde ¹, Lindeque du Toit ¹, Dirkjan Schokker ², Este van Marle-Koster ¹

¹University of Pretoria, ²Wageningen Livestock Research, Wageningen University and Research

12:00 p.m. PSIX-12 **The Effects of Feeding Chromium Propionate to Yearling Steers in a Commercial Feedyard on Growth Performance, Carcass Characteristics and Health**

Sara J. Trojan¹, Tony C. Bryant², Jenny S. Jennings³, Darryl Clark⁴, Doug LaFleur⁵, Landon Canterbury⁴, Jerilyn Hergenreder⁵

¹Peak Beef Cattle Nutrition and Management Consulting LLC, ²Five Rivers Cattle Feeding, ³Five Rivers Cattle Feeding, ⁴Kemin Industries, ⁵Kemin Industries Inc.

12:00 p.m. PSIX-13 **The Impact of Saccharomyces Cerevisiae Fermentation Product on in-vitro Rumen Fermentation Characteristics, Gas Production, and Ruminal Microbiome Composition**

Rafael Mezzomo¹, Zack Burcham², meghan P. Thorndyke³, Huey Yi Loh³, Briana V. Tangredi³, Harrison D. Hallmark², Ryan J. Gifford³, Jessica Metcalf², Brad Morgan², Keith Belk², Trevor Tuell⁴, Octavio Guimaraes³, Terry E. Engle³

¹Colorado State University, ²Colorado State University, Department of Animal Sciences, ³Colorado State University, ⁴Diamond V

12:00 p.m. PSIX-14 **The Influence of Previous Plane of Nutrition on Feedlot Performance, Water Intake and Carcass Characteristics of Beef Steers**

Abigail L. Barney¹, Arturo Macias Franco², Aghata Silva³, Felipe Henrique De Moura¹, Mozart A. Fonseca¹

¹University of Nevada, Reno, ²University of Nevada Reno, ³Auburn University

12:00 p.m. PSIX-15 **The Influence of Trace Mineral Source on Reproductive Performance in Recipient Multiparous Beef Cows**

Tyler A. Thomas¹, Briana V. Tangredi¹, Harrison D. Hallmark², meghan P. Thorndyke¹, Octavio Guimaraes¹, Sara Crane¹, Terry E. Engle¹

¹Colorado State University, ²Colorado State University, Department of Animal Sciences

12:00 p.m. PSIX-16 **Urine Metabolome and Whole Blood Transcriptome of Beef Steers with Low or High Residual Feed Intake**

Godstime A. Taiwo¹, Modoluwamu Idowu¹, Domingo Mata-Padrino¹, James Denvir², Ibukun M. Ogunade¹

¹West Virginia University, ²Marshall University

12:00 p.m. PSIX-17 **Use of mycotoxin Deactivator Increases Productive Performance by Feedlot Cattle Fed a Natural Contaminated Diet**

Daniel I. C. G. Gouvêa¹, Maria B. Niehues², Isabelle Errobidarte de Matos³, Alexandre Perdigão⁴, Victor Valério de Carvalho⁵, Tiago S. S. Acedo⁶, Tyler Turner⁷, Cyntia L. L. Martins¹, Mário B. D. B. Arrigoni¹

¹São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, ²São Paulo State University, Botucatu, Brazil, ³Federal University of Mato Grosso do Sul, Campo Grande, Brazil, ⁴DSM Nutritional Products Brazil, ⁵dsm-firmenich, ⁶DSM Nutritional Products, ⁷DSM Nutritional Products Switzerland

12:00 p.m. PSIX-18 **Use of Feed Additives to Improve the Recovery of Unweaned Calves After Transportation**

Sonia Marti¹, Marta Blanch², Marta Terre¹, Maria Devant¹

¹IRTA, Ruminant Production, ²Lucta S.A.

ASAS-ASN Symposium: Animal–Sourced Foods for Global Health

Chair: Anna Dilger, University of Illinois at Urbana-Champaign; Ryan Dilger, University of Illinois
Urbana-Champaign
1:00 PM - 4:00 PM
Ballroom B

1:00 p.m. **ASAS-ASN Symposium Introduction**

1:05 p.m. 68 **Nutritional Importance of Animal-Sourced Foods in a Healthy Diet**

Teresa A. Davis ¹

¹USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine

1:35 p.m. 67 **Importance of Animal-Sourced Foods and Barriers To Their Adoption Globally**

Adegbola T. Adesogan ¹

¹Food Systems Institute, University of Florida

2:05 p.m. **ASAS-ASN Symposium Break**

2:15 p.m. 66 **Environmental Impacts of Animal-Sourced Foods: Historical Trends and Future Opportunities**

Robin R. White ¹

¹Virginia Tech School of Animal Sciences

2:45 p.m. 65 **The Role of Livestock as Up-cyclers of Food By-products and Waste**

Kim H. Ominski ¹, Tim A. McAllister ², Kim Stanford ³, Genet Mengistu ¹, Kebebe E. Gunte ¹,
Marcos Marcos ¹, Karin Wittenberg ¹, Faith Omonijo ⁴, Jaime White ⁵, Getahun Legesse ⁶

¹University of Manitoba, ²Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, ³Biological Sciences Department, University of Lethbridge, ⁴McGill University, ⁵Loop Resources, ⁶Manitoba Agriculture

3:15 p.m. 69 **Animal Sourced Foods Role in Sustainable Nutrition**

Greg Thoma ¹, Daesoo Kim ¹

¹University of Arkansas

3:45 p.m. **ASAS-ASN Symposium Conclusion**

Nonruminant Nutrition II

Chair: Jason Woodworth, Kansas State University

1:00 PM - 4:00 PM

302A

1:00 p.m. **Nonruminant Nutrition II Introduction**

1:05 p.m. 273 **Awardee Talk: A Perspective on Calcium and Phosphorus Nutrition: Where We Are and the Opportunities Ahead**

Olayiwola Adeola ¹

¹Purdue University

1:35 p.m. 264 **Evaluation of In-barn Feeder Management Prior to Marketing to Reduce Feed Cost and Improve Carcass Yield and Economic Return**

Hilario M. Cordoba¹, Joel M. DeRouche¹, Robert D. Goodband¹, Mike D. Tokach¹, Jason C. Woodworth¹, Jordan T. Gebhardt¹

¹Kansas State University

1:50 p.m. 268 **Effect of Functional Amino Acid Supplementation in Low and Normal Birth Weight Pigs on Performance and Immune Status During Subsequent Salmonella Challenge**

Lucas A. Rodrigues¹, Josiane C. Panisson², Agbee L. Kpogo³, John K. Khun Kyaw Htoo⁴, Andrew G. Van Kessel³, Daniel A. Columbus⁵

¹Prairie Swine Center, ²Prairie Swine Centre, ³University of Saskatchewan, ⁴Evonik, ⁵Prairie Swine Centre, Inc.

2:05 p.m. 272 **Effects of a Probiotic *Bacillus* Strain on Ileal Digestibility of Crude Protein, Starch, Energy and Fat and Total Tract Digestibility of Energy and Dietary Fiber in Diets Fed to Weanling Pigs**

Maryane Sespere Faria de Oliveira¹, Guillermo Jimenez², Hans H. Stein¹

¹University of Illinois at Urbana-Champaign, ²Rubinum, S.A.

2:20 p.m. 270 **Effects of Different Watering Options on Standardized Ileal Digestibility of Amino Acids and Net Energy in Diets Fed to Growing Pigs**

Su A Lee¹, Diego A. Rodriguez¹, Hans H. Stein¹

¹University of Illinois at Urbana-Champaign

2:35 p.m. **Nonruminant Nutrition II Break**

2:45 p.m. 274 **Effects of Feeding Levels in Early Gestation on PIC Camborough Sows and Litter Performance**

Ning Lu¹, Jorge Estrada², Andrea Hanson³, Carine M. Vier⁴, Jose A. Soto⁵, Gustavo Silva⁶, Beau Peterson⁷, Eric Parr⁷, Michael Welsch⁷, Steve Dritz⁴, Ron Navales⁸, Wayne R. Cast⁴, Uislei A. Orlando⁴

¹PIC China, ²Carthage Veterinary Service, ³Carthage Vet Services, ⁴PIC North America, ⁵Ajinomoto Heartland, ⁶Iowa State University, ⁷Carthage Innovative Swine Solutions, ⁸Genus PIC

3:00 p.m. 271 **Effects of Increasing Lactation Dietary Energy Concentration by Adding Fat During the Summer Period on Sow and Litter Performance**

Jorge Estrada¹, Carine M. Vier², Andrea Hanson³, Ning Lu⁴, Julia A. Calderon Diaz⁵, Denise Van De Stroet², Luis E. Zaragoza⁶, Beau Peterson⁷, Eric Parr⁷, Steve Dritz², Ron Navales⁶, Wayne R. Cast², Uislei A. Orlando²

¹Carthage Veterinary Service, ²PIC North America, ³Carthage Vet Services, ⁴PIC China, ⁵PIC Europe, ⁶Genus PIC, ⁷Carthage Innovative Swine Solutions

3:15 p.m. 266 **Effects of Lactobacillus Fermentate on Modulation of Mucosa-associated Microbiota in Relation to Intestinal Health of Nursery Pigs Challenged with F18+ Escherichia coli**

Marcos Elias Duarte¹, Xiangyi Xu¹, Sung Woo Kim²

¹North Carolina State University, ²NC State University

3:30 p.m. 265 **Effects of Non-starch Polysaccharide Degrading Enzymes + Lysophospholipids in Feeds with Varied ME Contents on Growth Performance and Nutrient Utilization of Pigs from 25 to 75 Kg BW**

Jonathan T. Baker¹, Sung Woo Kim²

¹North Carolina State University, ²NC State University

3:45 p.m. 275 **Effects of Reduced Metabolizable Energy by Reducing Fat Supplementation on Growth Performance and Intestinal Health of Nursery Pigs**

Jonathan T. Baker¹, Marcos Elias Elias Duarte¹, Sung Woo Kim²

¹North Carolina State University, ²NC State University

Nonruminant Nutrition I

Chair: Jean-Yves Dourmad, INRAE

1:00 PM - 5:15 PM

Ballroom A

1:00 p.m. **Nonruminant Nutrition I Introduction**

1:05 p.m. 249 **Awardee Talk: Swine Nutrient Requirements: Past, Present, and Future**

Phillip S. Miller¹

¹University of Nebraska-Lincoln

1:35 p.m. 251 **A Combination of Dietary Isoleucine and Valine Above Recommended Levels Improves the Growth and Alters the Metabolites Profile in Pigs Fed with Very Low Protein Diets**

Parniyan Goodarzi¹, Mohammad Habibi¹, Matthew W. Gorton¹, Firoozeh Tarkesh¹, Katherine Walsh¹, Mallory Fuhrig¹, Adel Pezeshki¹

¹Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078

1:50 p.m. 258 **A Survey of Added Vitamin Levels in Diets Utilized in the U.S. Swine Industry**

Jamil Faccin¹, Mike D. Tokach¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Jordan T. Gebhardt¹

¹Kansas State University

2:05 p.m. 250 **Effect of Dietary Zinc and Copper Supplements on Digestibility of Minerals in Growing Pigs**

Mohamed Ali Ketata¹, Frédéric Guay², Marie-Pierre Létourneau-Montminy²

¹Animal sciences department- Faculty of Agriculture and Food Sciences- Laval university (FSAA), ²Université Laval

2:20 p.m. 256 **Effect of Functional Amino Acid Supplementation in Salmonella-challenged Weaned Pigs Fed Either Animal- or Plant-based Nursery Diets**

Lucas A. Rodrigues¹, Josiane C. Panisson², Andrew G. Van Kessel³, Daniel A. Columbus⁴

¹Prairie Swine Center, ²Prairie Swine Centre, ³University of Saskatchewan, ⁴Prairie Swine Centre, Inc.

2:35 p.m. 262 **Effect of Isoleucine and Added Valine on Performance, and Gut Microbiota Composition of Pigs Fed with Very Low Protein Diets**

Parniyan Goodarzi ¹, Caitlyn M. M. Wileman ¹, Mohammad Habibi ¹, Katherine Walsh ¹, Julia Sutton ¹, Cedrick n. Shili ¹, Jianmin Chai ², Jiangchao Zhao ², Adel Pezeshki ¹

¹Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078,

²Department of Animal Science, University of Arkansas, Fayetteville, AR, 72701

2:50 p.m. 257 **Effect of the Essential Amino Acid-nitrogen to Total Nitrogen Ratio on Lysine Requirement for Nitrogen Retention in Growing Pigs**

Carley M. Camire ¹, Lucas A. Rodrigues ², Josiane C. Panisson ³, Anna Kate K. Shoveller ⁴, Daniel A. Columbus ⁵

¹University of Saskatchewan, ²Prairie Swine Center, ³Prairie Swine Centre, ⁴University of Guelph, ⁵Prairie Swine Centre, Inc.

3:05 p.m. **Nonruminant Nutrition I Break**

3:15 p.m. 254 **Effects of Increasing Daily Dietary Standardized Ileal Digestible Lysine Intake of Gilts and Sows During Day 35-to-112 of Gestation on Reproductive Performance**

Ning Lu ¹, Carine M. Vier ², Jose A. Soto ³, Danielle Wilson-Wells ², Denise Van De Stroet ², Luis E. Zaragoza ⁴, Beau Peterson ⁵, Eric Parr ⁵, Steve Dritz ², Ron Navales ⁴, Wayne R. Cast ², Uislei A. Orlando ²

¹PIC China, ²PIC North America, ³Ajinomoto Heartland, ⁴Genus PIC, ⁵Carthage Innovative Swine Solutions

3:30 p.m. 261 **Effects of Soy Protein Concentrate Replacing Animal Protein Supplements on Modulation of Mucosa-associated Microbiota in Relation to Intestinal Health of Nursery Pigs**

Zixiao Deng ¹, Marcos Elias Elias Duarte ², Sung Woo Kim ³

¹PhD Student, ²North Carolina State University, ³NC State University

3:45 p.m. 263 **Efficacy and Safety of a Novel Source of 25-hydroxycholecalciferol in Performance and Tissue Deposition in Growing Pigs**

Jorge L. Sandoval ¹, Diego E. Ventura ¹, Orlando B. Fiallos ², Brian L. Anderson ³, Chris Sparks ⁴, Jessica D. Starkey ¹, Charles W. Starkey ³

¹Department of Poultry Science, Auburn University, ²Poultry Science, Auburn University,

³Auburn University, ⁴Huvepharma

4:00 p.m. 252 **Efficiency of Utilization of Methionine for Weight Gain in Weaning Pigs Is Not Affected by Methionine Source: A Meta-analysis**

Aline Remus ¹, Vinicius Souza ², Dolores I. Batonon-Alavo ³, Friedrich Rouffineau ³, Ermias Kebreab ⁴, Candido Pomar ⁵

¹Agriculture and Agri-Food Canada, ²University of California, Davis, ³Adisseo France SAS, ⁴UC Davis, ⁵AAFC

4:15 p.m. 259 **Impact of Reducing Dietary Protein with Supplementation of 8 Essential Amino Acids and Functional Roles of Supplemental His or Glu on Growth Performance and Carcass Traits of Finishing Pigs**

Marcos Elias Elias Duarte ¹, Zixiao Deng ², Jonathan T. Baker ¹, Sung Woo Kim ³

¹North Carolina State University, ²PhD Student, ³NC State University

4:30 p.m. 255 **Leucine Supplementation During Continuous Feeding Enhances Lean Growth in a Preterm Piglet Model**

Erin A. Posey¹, Agus Suryawan², Hanh Nguyen², Barbara Stoll², Christina Sciarrillo¹, Caitlin Vonderohe², Doug Burrin², Marta Fiorotto², Teresa A. Davis²

¹USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, ²USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine

4:45 p.m. 260 **The Effect of Different Bones and Analytical Methods on Assessment of Bone Mineralization Response to Dietary P, Phytase, and Vitamin D in Finishing Pigs**

Hadley Williams¹, Jordan T. Gebhardt¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jon R. Bergstrom², Chad W. Hastad³, Zach Post³, Michael Rahe⁴, Christopher Siepker⁴, Panchan Sitthicharoenchai⁴, Steve Ensley¹

¹Kansas State University, ²DSM, ³New Fashion Pork, ⁴Iowa State University

5:00 p.m. 253 **The Effect of Increasing Standardized Ileal Digestible Methionine Intake on Whole-body Nitrogen Retention of Gilts During Late Gestation**

Cristhiam J. Munoz Alfonso¹, John K. Khun Kyaw Htoo², Lee-Anne Huber¹

¹University of Guelph, ²Evonik

Poster Session X-A

1:15 PM - 2:30 PM

Exhibit Hall A

1:15 p.m. PSX-A-3 **Characterization of Short-season Hybrid Corn Stover and Barley Greenfeed Components Through in vitro Digestibility and Methane Production**

Rachel E. Carey¹, Gabriel O. Ribeiro², Timothy A. McAllister³, Greg B. Penner²

¹University of Saskatchewan, ²Department of Animal and Poultry Science, University of Saskatchewan, ³Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

1:15 p.m. PSX-A-2 **Effects of Dietary Crude Protein Level and Corn Grain Processing on Whole-body Urea Kinetics and in-vitro Urea Secretion into the Rumen of Sheep**

Kaitlin Burns¹, Greg B. Penner², Timothy Mutsvangwa²

¹University of Saskatchewan, ²Department of Animal and Poultry Science, University of Saskatchewan

1:15 p.m. PSX-A-4 **Effects of Dietary Protein Content and Crystalline Amino Acid Supplementation Patterns on Intestinal Bacteria and Their Metabolites in Weaned Pigs Raised Under Different Sanitary Conditions**

Jinyoung Lee¹, John K. Khun Kyaw Htoo², Martina Kluenemann³, Caroline González-Vega³, Charles Martin Nyachoti¹

¹University of Manitoba, ²Evonik, ³Evonik Operations GmbH

1:15 p.m. PSX-A-5 **Effects of High- and Low-fiber Diets on Growth Performance and Intestinal Oxidative Stress in Growing-finishing Pigs**

Shunshun Jin¹, Charith U.B. Wijerathne², Kathy K.W. Au-Yeung², Huaigang lei³, chengbo Yang⁴, Karmin O²

¹University of manitoba, Department of Animal Science, ²University of manitoba, ³Topigs Norsvin Canada Inc., ⁴Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

1:15 p.m. PSX-A-6 **Energy and Nutrient Digestibility in Hybrid Rye Ground to Two Particle Sizes and Fed Without or with Multicarbohydase Supplementation to Growing Pigs**

Jichen Song¹, Charles Martin Nyachoti¹, Claus Hinrich Heuer², Jinyoung Lee¹

¹University of Manitoba, ²KWS Lochow GmbH

1:15 p.m. PSX-A-1 **Impacts of Undigestible NDF and Grain Source in Feedlot Steers on Performance, Feeding Behavior, and Ruminal Ph**

Amber L. Zupan¹, Katharine M. Wood¹, Greg B. Penner², Michael A. Steele³, Ira B. Mandell¹, Megan Van Schaik⁴

¹University of Guelph, ²Department of Animal and Poultry Science, University of Saskatchewan,

³Department of Animal Biosciences, University of Guelph, ⁴OMAFRA

1:15 p.m. PSX-A-7 **The Effect of Chronic Maternal Lipopolysaccharide Exposure During Late Gestation on Offspring Muscle Development**

Erin Bryan¹, Nick Bode², Dani Shirey², Xuenan Chen², Ryan N. Dilger³, Anna Dilger⁴

¹Purina, ²University of Illinois, ³University of Illinois Urbana-Champaign, ⁴University of Illinois at Urbana-Champaign

1:15 p.m. PSX-A-8 **Updating Pre-existing Genetic Evaluations System to Evaluate High-throughput Data in Purebred and Crossbred Beef Cattle**

Kristin Lee¹, Jasper Munro², Ricardo V. Ventura³, Flavio S. Schenkel⁴, Gordon Vander Voort², Angela Cánovas⁴

¹University of Guelph, ²AgSights, ³University of Sao Paulo, ⁴Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada

Poster Session X-B

1:30 PM - 2:30 PM

Exhibit Hall A

1:30 p.m. PSX-B-9 **A Nanotechnology Base Immunity Measurement (D2Dx) Compared with Total Serum Protein Concentration Using Neonatal Holstein Bull Calves**

David P. Casper¹

¹Casper's Calf Ranch

1:30 p.m. PSX-B-18 **Can a Smartphone Be Used for Daily Field Measurements?**

Bruno Biagioli¹, Lucas de Souza², Illys De Sousa³

¹UNESP, ²Undergraduate Student, ³Graduate Student

1:30 p.m. PSX-B-10 **Characterization and Comparison of the Bovine Nasal Microbiome to Exposure of Persistently Infected Bovine Viral Diarrhea Virus**

Hunter M. Usdrowski¹, Jeremy G. Powell², Jianmin Chai¹, Bin Zuo¹, Jana L. Reynolds², Benjamin P. Shoulders², Beth B. Kegley³, Jiangchao Zhao¹

¹Department of Animal Science, University of Arkansas, Fayetteville, AR, 72701, ²University of Arkansas System Division of Agriculture, ³University of Arkansas Division of Agriculture

1:30 p.m. PSX-B-11 **Classification Performance of Multinomial Logistic Regression for Identifying Resistance, Resilience, and Susceptibility to Gastrointestinal Nematode Infections in Sheep**

Luara Freitas¹, Rodrigo Savegnago², Anderson A. Carvalho Alves³, Ricardo Costa⁴, Guilherme J. M. Rosa⁵, Claudia Paz⁶

¹University of Sao Paulo - University of Wisconsin-Madison, ²Michigan State University,

³Department of Animal and Dairy Sciences, University of Wisconsin - Madison, ⁴São Paulo Agency of Agribusiness and Technology, ⁵University of Wisconsin-Madison, ⁶Animal Science Institute

1:30 p.m. PSX-B-12 **Effect of Locust Bean Gum on Gene Expression in Cow Blood**

Bharath Mulakala¹, Mulumebet Worku²

¹The University of Vermont, ²NC A&T State University

1:30 p.m. PSX-B-13 **Effect of Nutragen Supplementation on Incidence of Bovine Respiratory Disease, Weight Gain and Culling Rate in Feedlot Receiving Cattle**

Gustavo Sueldo¹, Brooke Humphrey², Elbio Bressan³, Timothy Buisker⁴

¹Agro Sin Frontera SA, ²Phibro Animal Health Corporations, ³Phibro Animal Health, ⁴Smart Data Science Solutions

1:30 p.m. PSX-B-14 **Effects of Adding Protected Benzoic Acid on Growth Performance, Diarrhea, and Inflammation in Weaned Pigs Challenged with Escherichia coli F18**

Jesus A. Acosta Camargo¹, Deana Hancock², Juxing Chen¹, Mercedes Vazquez³

¹Novus International Inc., ²Novus International, ³Novus International, Inc

1:30 p.m. PSX-B-16 **Effects of Bacillus Subtilis Subsp. Subtilis Strain ATCC PTA-125135 Supplementation on Performance and Digestibility in Weaned Pigs**

Lucas A. Krueger¹, David Spangler¹, Rod Hall¹, Eric Weaver²

¹Agri-King, Inc., ²South Dakota State University

1:30 p.m. PSX-B-15 **Effects of Different Combinations of Selenium-enrich Total Mixed Ration on Growth Performance, Slaughter Performance and Antioxidant Performance of Weaned Lambs**

Xiaofei Chen¹, Yunfen zhu¹, Yong QU¹, Jiqian XIANG¹, Junhui Xie¹, guogui Wang¹, Rong li¹, Dejun Tan¹, Jin Ma¹, xingen lei¹

¹Enshi Autonomous Prefecture Academy of Agricultural Sciences

1:30 p.m. PSX-B-17 **Effects of Enzymatic and Microbial Supplements on Shedding of E. coli and Salmonella During the Pre-harvest Finishing Period in Growing Lambs**

Lucas A. Krueger¹, Aimee Hafila¹, David Spangler¹

¹Agri-King, Inc.

1:30 p.m. PSX-B-21 **Equine Embryo Viability Based on Morphokinetics**

Sydney L. Hickerson¹, Katylyn J. Richardson¹, Tommy L. Perkins¹, Russell Killingsworth², Cara W. Wessells Wells³, Gregg Veneklasen⁴, Noah P. Jesko¹

¹West Texas A&M University, ²Shamrock Veterinary Hospital Inc., ³EMGenisys, Inc., ⁴Timber Creek Veterinary Hospital

1:30 p.m. PSX-B-19 **Producers' Perception of Utilization of Reproductive Technologies in Small Cattle Herds**

Paige Williams ¹

¹Tarleton State University

1:30 p.m. PSX-B-20 **Survey of Reproductive Management Practices for Beef Cow-calf Producers in VA**

Nicholas W. Dias ¹, Stefania Pancini ¹, Guillermo Goncherenko ², Vitor R G. Mercadante ³

¹Virginia Tech, ²Department of Animal and Poultry Sciences, Virginia Tech, ³Virginia Tech - School of Animal Sciences, Large Animal Clinical Sciences

Animal Breeding and Genetics Symposium I: New Insights on Artificial Intelligence Applied to Precision Animal Breeding - Sponsored by DNA Genetics

Chair: Gota Morota, School of Animal Sciences, Virginia Polytechnic Institute and State University

1:30 PM - 4:00 PM

301 A/B

1:30 p.m. **Animal Breeding and Genetics Symposium I Introduction**

1:35 p.m. 17 **Invited Speaker Dr. Isabel Condotta**

Isabella C. F. S. Condotta ¹

¹University of Illinois at Urbana-Champaign

2:05 p.m. 18 **Invited Speaker Dr. Suresh Neethirajan**

Suresh Neethirajan ¹

¹Wageningen University & Research

2:35 p.m. **Animal Breeding and Genetics Symposium I Break**

2:35 p.m. 19 **How Can Artificial Intelligence Accelerate Phenotyping Efforts in Animal Breeding?**

Gota Morota ¹, Dong Ha ², James Chen ²

¹School of Animal Sciences, Virginia Polytechnic Institute and State University, ²Virginia Tech

3:15 p.m. 20 **New Insights on Data Integration and Artificial Intelligence to Predict Primiparous Lactation Curves Capturing Genotype-by-environment Interactions**

Fan Zhang ¹, Kent Weigel ², Victor E. Cabrera ²

¹University of Wisconsin Madison, ²University of Wisconsin Madison

3:45 p.m. **Animal Breeding and Genetics Symposium I Q&A**

CSAS Symposium I: Increasing Nutrient Utilization of Feedstuffs for Growing-finishing Pigs

Chair: Candido Pomar, AAFC

1:30 PM - 5:00 PM

206 A/B

1:30 p.m. **CSAS Symposium I Introduction**

1:35 p.m. 168 **Evaluation and Improvement of the Nutritional Value of Cereal and Pulse Grains for Swine**

Ruurd T. Zijlstra¹, Felina Tan¹, E. Beltranena¹, Charles Martin Nyachoti²

¹University of Alberta, ²University of Manitoba

2:10 p.m. 169 **Evaluation and Improvement of the Nutritional Value of Co-products for Swine**

Charles Martin Nyachoti¹, Jinyoung Lee¹, Ruurd T. Zijlstra²

¹University of Manitoba, ²University of Alberta

2:45 p.m. 170 **Improving Nutrient Value of Soybean Meal Using Characterized Novel Microbial Fermentation**

Julang Li¹, Nadeem Akhtar¹, Nanshan Qi¹, Elijah Kiarie¹

¹University of Guelph

3:20 p.m. **CSAS Symposium I Break**

3:35 p.m. 166 **A Comparison of Key Methodologies Used to Quantify Protein Quality in Mammals: Ileal Digestibility, Indicator Amino Acid Oxidation, and in vitro Digestibility**

Cara L. Cargo-Froom¹, Daniel A. Columbus², Elijah Kiarie¹, Christopher Marinangeli³, Anna Kate K. Shoveller¹

¹University of Guelph, ²Prairie Swine Centre, Inc., ³Pulse Canada

4:10 p.m. 167 **Monomodular and Multi-functional Processive Endocellulases for Improving Fibre Utilization and Reducing Environmental Footprint in Pigs**

Ming Z. Fan¹, Laurence Cheng¹, Min Wang¹, Jiali Chen¹, Wenyi Fan¹, Weijun Wang²

¹University of Guelph, ²Canadian Food Inspection Agency Ontario Operation

4:45 p.m. **CSAS Symposium I Q&A**

Young Scholar Award Talks I

Chair: Joel Caton, North Dakota State University

1:45 PM - 3:20 PM

201

1:45 p.m. **Young Scholar Award Talks I Introduction**

1:50 p.m. 35 **Young Scholar Award Talk: Computing Strategies for National Beef Cattle Evaluations**

Matias Bermann¹, Daniela Lourenco¹, Ignacy Misztal¹

¹University of Georgia

2:20 p.m. 388 **Young Scholar Award Talk: Increasing Efficiency of Finishing Beef Production: Optimizing Starch Digestion, Improving Flaking Quality, and Reducing Methane Emissions**

Ronald J. Trotta¹

¹University of Kentucky

2:50 p.m. 78 **Young Scholar Award Talk: How Advances in Animal Efficiency and Management Have Affected Beef's Water Intensity Across the United States: 1991 Compared To 2019**

Sarah C. Klopatek¹, James W. Oltjen²
¹JBS, ²University of California, Davis

Extension Education Symposium: Importance and Practices of Interaction with Producers and Industry for Land-grant Animal Science Faculty

Chair: Jack Whittier, University of Nebraska
1:45 PM - 3:45 PM
205 A/B

1:45 p.m. 180 **Importance and Practices of Interaction with Producers and Industry for Land-grant Animal Science Faculty: How Are These Practices Developed and Implemented?**

Jack C. Whittier¹, Ivan Rush¹, David Lalman², Allison M. Meyer³, Kim K. Mullenix⁴
¹University of Nebraska, ²Oklahoma State University, ³University of Missouri, ⁴Auburn University

2:00 p.m. 182 **Invited Speaker Ivan Rush**

Ivan Rush¹
¹University of Nebraska

2:15 p.m. 181 **Invited Speaker Dave Lalman**

David Lalman¹
¹Oklahoma State University

2:30 p.m. 183 **Invited Speaker Allison Meyer**

Allison M. Meyer¹
¹University of Missouri

2:45 p.m. 184 **Invited Speaker Greg Highfill**

Greg Highfill¹
¹Oklahoma State University

3:00 p.m. **Extension Education Symposium Discussion**

Beef Species

Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC
1:45 PM - 4:45 PM
209 A/B

1:45 p.m. **Beef Species Introduction**

1:50 p.m. 87 **Awardee Talk: Frequency of Energy Supplementation Modulates Growth, Reproduction, Immune Function, and Fetal Programming in Beef Cattle**

Philippe Moriel¹
¹University of Florida

2:20 p.m. 82 **Genetic Correlations Underlying the Thermotolerance – Production Complex in Beef Cattle**

Raluca G. Mateescu¹, Fernanda M. Rezende¹, Kaitlyn M. Sarlo Davila², Andrea N. Nunez Andrade¹, Aakilah Hernandez¹, Pascal Oltenacu¹

¹University of Florida, ²ORISE/NADC

2:35 p.m. 80 **Effects of Prenatal Stress on Beef Steer Development**

Kasey A. Elder¹, Rachel Fernandez², Rachel Dunn¹, Kiana Green¹, John F. Odhiambo¹, Derrick J. Coble³

¹Florida A & M University, ²Division of Agricultural & Food Sciences, Florida A&M University, Tallahassee, FL 32307, ³North Carolina A&T State University

2:50 p.m. 79 **Effects of Nutrient Restriction During Late Gestation of the First Parity on Cow and Calf Performance During the Second Lactation**

Shelby L. Davies¹, Colby A. Redifer², Abigail R. Rathert-Williams², Allison M. Meyer²

¹Division of Animal Sciences, University of Missouri, ²University of Missouri

3:05 p.m. **Beef Species Break**

3:15 p.m. 84 **Awardee Talk: Managing Reproduction: A Key to Profitability**

Les Anderson¹

¹University of Kentucky

3:45 p.m. 86 **Effects of Hurricane-related Prenatal Stress on Postnatal Growth and Development of Steers and Heifers in a Limited Resource Beef Cow-calf System**

John F. Odhiambo¹, Kasey A. Elder¹, Rachel Fernandez², Rachel Dunn¹, Kiana Green¹, Derrick J. Coble³

¹Florida A & M University, ²Division of Agricultural & Food Sciences, Florida A&M University, Tallahassee, FL 32307, ³North Carolina A&T State University

4:00 p.m. 81 **Effects of Hurricane-related Stress During Gestation on Eplacement Heifer (*Bos Taurus*) Development in a Limited-resource Beef Cow-calf System**

Rachel Fernandez¹, Kasey A. Elder², John F. Odhiambo², Kiana Green², Rachel Dunn², Derrick J. Coble³

¹Division of Agricultural & Food Sciences, Florida A&M University, Tallahassee, FL 32307,

²Florida A & M University, ³North Carolina A&T State University

4:15 p.m. 83 **Impacts of Heifer Post-weaning Intake Classification on Performance Measurements of Lactating and Non-lactating Two-, Five- and Eight-year-old Angus Beef Females**

Krista Wellnitz-Eiseman¹, Cory Parsons², Julia Dafoe³, Samuel Wyffels², Darrin L. Boss³, Timothy DelCurto¹, Megan L. Van Emon⁴

¹Montana State University, ²Northern Agriculture Research Center, ³Northern Agriculture Research Center, Montana State University, ⁴Fort Keogh Ag Experiment Station

4:30 p.m. 85 **Automated Walk-over Weighing System: Methods to Track Daily Body Mass and Growth in Grazing Steers**

Ira L. Parsons¹, Brandi B. Karisch², Stephen L. Webb³, Mike Proctor⁴, Amanda E. Stone⁵, Garrett Street⁶

¹South Dakota State University West River Research and Extension, Department of Animal Science, ²Mississippi State University, ³Natural Resources Institute, Texas A&M University,

⁴Noble Research Institute, ⁵Mississippi State University, Department Animal and Dairy Science,

⁶Mississippi State University, Dept. Wildlife, Fisheries and Aquaculture

Companion Animal I

Chair: Amanda Dainton, Freshpet

1:45 PM - 5:00 PM

301 C/D

1:45 p.m. **Companion Animal I Introduction**

1:50 p.m. 109 **Effects of a Novel Dental Chew on the Oral Health Outcomes and Malodor of Adult Dogs**

Kelly M. Sieja¹, Patricia Massae Oba², Amy Schauwecker³, Teodora Hristova¹, Stephanie Keating¹, Amy Somrak¹, Kelly S. Swanson⁴

¹University of Illinois, ²University of Illinois Urbana-Champaign, ³PetSmart, ⁴University of Illinois at Urbana-Champaign

2:05 p.m. 110 **Evaluation of High-protein Diets Differing in Protein Source in Healthy Adult Dogs**

Kelly M. Sieja¹, Patricia Massae Oba², Janelle Kelly³, Kelly S. Swanson⁴

¹University of Illinois, ²University of Illinois Urbana-Champaign, ³Champion Petfoods, ⁴University of Illinois at Urbana-Champaign

2:20 p.m. 104 **Standardized Amino Acid Digestibility of Three Formats of Freeze-dried Dog Foods Using the Precision-fed Cecectomized Rooster Assay**

Patricia Massae Oba¹, Pamela L. Utterback², Carl M. Parsons², James Templeman³, Kelly S. Swanson²

¹University of Illinois Urbana-Champaign, ²University of Illinois at Urbana-Champaign,

³University of Guelph

2:35 p.m. 106 **Minimum Methionine Requirement in Adult Cats Using the Indicator Amino Acid Oxidation Technique**

Julia Guazzelli Pezzali¹, Jocelyn G. Lambie², Anna Kate K. Shoveller²

¹university of guelph, ²University of Guelph

2:50 p.m. 105 **Effect of a Yeast Product on Palatability, Fecal Microbiota, and Blood Values of Adult Cats**

Ching-Yen Lin¹, Matt Panasevich¹, Leighann Daristotle¹, Nolan Frantz²

¹Blue Buffalo, ²Blue Buffalo Company

3:05 p.m. 107 **Restricted Feeding and Weight Loss Positively Change Fecal Microbiota Populations of Obese Dogs**

Patricia Massae Oba¹, Darcia Kostiuik², Janelle Kelly³, Kelly S. Swanson⁴

¹University of Illinois Urbana-Champaign, ²Champion Pet Foods LP, Morinville, Alberta, Canada., ³Champion Petfoods, ⁴University of Illinois at Urbana-Champaign

3:20 p.m. **Companion Animal I Break**

3:30 p.m. 108 **Citrus Oil Extract Potentiates the Antifungal Efficacy of Whey Protein Fermentate Against Aspergillus Flavus in Semi-moist Pet Treats for Dogs**

Samuel Kiprotich¹

¹Kansas State University

3:45 p.m. 112 **Determining the Required Length of Adaptation and Fecal Collection Periods for In-home Digestibility Testing of Cat Foods**

E. Bos¹, W.H. Hendriks¹, Guido Bosch¹, B. Beerda¹

¹Wageningen University & Research

4:00 p.m. 111 **Organic Matter Disappearance and Production of Short- and Branched-chain Fatty Acids from Whole Soybeans and Selected Fiber Sources Used in Pet Foods by a Canine in vitro Fermentation Model**

Hee Seong S. Kim¹, Charles G. Aldrich¹

¹Kansas State University

4:15 p.m. 115 **Effects of Probiotic and Heat-killed Probiotic Supplementation on Systemic Biomarkers of Oxidative Stress and Inflammation and Fermentative End Products of Adult Cats**

Sergio Miranda de Souza Junior¹, Fei He¹, Maria R C de Godoy², Gary M. Davenport³

¹University of Illinois at Urbana Champaign, ²University of Illinois at Urbana-Champaign, ³Archer Daniels Midland Company

4:30 p.m. 114 **Effects of Dietary Cameline Oil Supplementation on Inflammatory and Oxidative Markers, Transepidermal Water Loss, and Skin and Coat Health Parameters in Healthy Adult Dogs**

Taylor Richards¹, Scarlett Burron¹, Caitlin E. Grant², Keely Patterson¹, Luciano Trevizan³, Debbie Minikhiem⁴, Wendy Pearson¹, Anna Kate K. Shoveller⁴

¹Department of Animal Biosciences, University of Guelph, ²Department of Clinical Studies, Ontario Veterinary College, University of Guelph, ³Departamento de Zootecnia, Universidade Federal do Rio Grande do Sul, ⁴University of Guelph

4:45 p.m. 113 **Immunological Effects of Ganoderma Lucidum Supplementation in Canine Nutrition**

Emanuela Kayser¹, Fei He¹, Luis M.G. M. Osorio², Maria R C de Godoy³

¹University of Illinois at Urbana Champaign, ²Illuma Alliance, ³University of Illinois at Urbana-Champaign

Forages and Pastures I

Chair: Chad Page, Utah State University

2:00 PM - 3:05 PM

207 A/B

2:00 p.m. **Forages and Pastures I Introduction**

2:05 p.m. 188 **Comparison of Nutritive Value Parameters to Normalized Difference Vegetation Index by Means of Unmanned Aerial Vehicle**

Sarah M. Montgomery-Williams¹, Brandi B. Karisch¹, Joby Czarnecki¹

¹Mississippi State University

2:20 p.m. 185 **Evaluation of the Chemical Composition of Intermediate Wheatgrass (*Thinopyrum Intermedium*) Regrowth for Potential Fall Grazing of Beef Cattle**

Patrick Le Heiget¹, Emma J. J. McGeough¹, Douglas J. Cattani¹

¹University of Manitoba

2:35 p.m. 187 **Body Performance of Beef Steers Swathgrazing Oat Monoculture or Forage-blends During Winter Months**

Obioha N. Durunna¹, Oluwatobi Oyedeji¹, Carien Vandenberg², Deanna Krys², Herbert A. Lardner³

¹Department of Applied Research, Lakeland College Vermilion, AB, Canada T9X 1K5,

²Lakeland College, ³Department of Animal and Poultry Science, University of Saskatchewan

2:50 p.m. 186 **Effect of Feedlot Finishing Compared with Grass Fed Beef Following Bale Grazing and Delayed Feedlot Entry on Steer Performance, Carcass Measurement and Net Return**

Songul Senturklu¹, Douglas G. Landblom², Steve Paisley³, Christina Stroh⁴

¹Canakkale Onsekiz Mart University, ²North Dakota State University Dickinson Research

Extension Center, ³University of Wyoming, ⁴Dickinson State University, Dept. Agriculture and Technical Studies

Forages and Pastures II

Chair: Ryan Spurling, Utah State University

3:15 PM - 4:20 PM

207 A/B

3:15 p.m. **Forages and Pastures II Introduction**

3:20 p.m. 189 **Effects of Hay Maturity on the Enteric Methane Emission, Intake, and Energy Metabolism by Beef Heifers**

Emalee J. Friend¹, Stacey A. Gunter¹, Corey A. Moffet¹, Paul A. Beck²

¹USDA-ARS, Oklahoma and Central Plains Agricultural Research Center, ²Oklahoma State University

3:35 p.m. 191 **Evaluation of Diverse Cool-season Grass Mixtures with Red Clover on Ruminant Fermentation in Continuous Culture**

Miriam A. Snider¹, Bharath K. Mulakala¹, Ashley W. Driemel¹, Sara E. Ziegler², Heather M. Darby², Kathy J. Soder³, Andre F. Brito⁴, Sabrina L. Greenwood¹

¹University of Vermont, ²UVM Extension Northwest Crops and Soils Program, ³USDA-ARS,

⁴University of New Hampshire

3:50 p.m. 192 **Outcomes of Simulated Combinations of Rangeland Management Scenarios on Soil and Nutrient Processes**

Phillip A. Lancaster¹, Minfeng Tang², DeAnn Presley³, Walt Fick³, Luca Doro⁴, Dustin Pendell³, Adam Ahlers³, Andrew Ricketts³

¹Beef Cattle Institute/Kansas State University, ²Beef Cattle Institute, Kansas State University, ³Kansas State University, ⁴Texas A&M University

4:05 p.m. 190 **Effects of Flooding on Grazed Pastures – Forage Quality, GHG Emissions and C Stocks**

Marina Miquilini¹, Ricardo Ribeiro², Marilia Chiavegato²

¹Ohio State University, ²The Ohio State University

Young Scholar Award Talks II

Chair: Joel Caton, North Dakota State University

3:30 PM - 5:05 PM

201

3:30 p.m. **Young Scholar Award Talks II Introduction**

3:35 p.m. 390 **Young Scholar Award Talk: The Effect of Chronic Maternal Lipopolysaccharide Exposure during Late Gestation on Offspring Muscle Development**

Erin Bryan¹, Nick Bode², Dani Shirey², Xuenan Chen², Ryan N. Dilger³, Anna Dilger⁴

¹Purina, ²University of Illinois, ³University of Illinois Urbana-Champaign, ⁴University of Illinois at Urbana-Champaign

4:05 p.m. 392 **Young Scholar Award Talk: Strategies to Maintain Nutrient Intake, Reduce Weight Loss, and Improve Livability in Newly Weaned Pigs**

Madie R. Wensley¹, Mike D. Tokach², Jason C. Woodworth², Jordan T. Gebhardt², Robert D. Goodband², Joel M. DeRouchey²

¹Pipestone, ²Kansas State University

4:35 p.m. 391 **Young Scholar Award Talk: Supplementation of Oligosaccharide-based Polymer Enhanced Growth and Disease Resistance of Weaned Pigs by Modulating Intestinal Integrity and Systemic Immunity**

Kwangwook Kim¹, Yijie He², Cynthia N. Jinno³, Lauren L. Kovanda³, Xunde Li³, David Bravo⁴, Eric Cox⁵, Yanhong Liu³

¹Michigan State university, ²Department of Animal Science, University of California, Davis, ³University of California, Davis, ⁴Pancosma|ADM, ⁵Ghent University

Poster Session XI

3:45 PM - 4:45 PM

Exhibit Hall A

3:45 p.m. PSXI-9 **Chemical Composition and Calculation of Standardized Amino Acid Digestibility and Diaas-like Scores Using the Precision Fed Cecectomized Rooster Assay for Novel Proteins of Aquatic and Reptile Species**

Victoria A. Gomez¹, Pamela L. Utterback², Carl M. Parsons², Maria R C de Godoy²

¹University of Illinois, ²University of Illinois at Urbana-Champaign

3:45 p.m. PSXI-2 **Circulating Mirnas as Non-invasive Biomarkers of Chronic Kidney Disease and Calcium Oxalate Uroliths in Felines**

Pooja Gupta-Saraf ¹, Selena K. Tavener ¹, Kiran S. Panickar ¹
¹Science & Technology Ctr, Hills PNC

3:45 p.m. PSXI-3 **Decreased Circulating Concentrations of CD21 and CD19 in Canines with Heart Murmur and Associated Valvular Cardiovascular Disorder**

Selena K. Tavener ¹, Dayakar V. Badri ¹, Kiran S. Panickar ¹
¹Science & Technology Ctr, Hills PNC

3:45 p.m. PSXI-12 **Determination of Protein Requirements for Labrador Retriever Pups (> 14 wk-9 Mo) Using the Indicator Amino Acid Oxidation (IAAO) Technique**

Jordan T. Weil ¹, Jessica L. Varney ¹, Heather A. Adams ¹, Mabelle Mullanix ¹, Rhianna Bailey ¹, John Moss ¹, Jason W. Fowler ¹, Craig N. Coon ¹
¹Four Rivers Kennel, LLC

3:45 p.m. PSXI-5 **Digestibility and Acceptability of Foods Containing Increasing Content of Rice Protein Concentrate Fed to Adult Cats**

Elizabeth M. Morris ¹, Sunil Perumalla ¹, Kathy Gross ¹
¹Hill's Pet Nutrition

3:45 p.m. PSXI-6 **Effects of a Saccharomyces Cerevisiae Fermentation Product-supplemented Diet on Circulating Immune Cells and Oxidative Stress Markers of Dogs**

Sofia M. Wilson ¹, Patricia Massae Oba ², Sofia M. Wilson ¹, Matt Panasevich ³, Sharon A. Norton ⁴, Kelly S. Swanson ¹
¹University of Illinois at Urbana-Champaign, ²University of Illinois Urbana-Champaign, ³Blue Buffalo, ⁴Cargill, Incorporated

3:45 p.m. PSXI-14 **Effects of Footpad Dermatitis on Gene Expression of Host Defense Peptides in Laying Hens**

Runxiang Zhang ¹, Yanqing Chen ¹, Rui Wang ¹, Jun Bao ¹
¹College of Animal Science and Technology, Northeast Agricultural University

3:45 p.m. PSXI-7 **Effects of Hericium Erinaceus on Health of Aged Dogs**

Ju Lan chun ¹, Kangmin Seo ¹, Hyun-Woo Cho ¹, Jung-Hwan Jeon ¹, Chan Ho Kim ¹, Sejin Lim ¹, Ki Hyun Kim ¹
¹National Institute of Animal Science

3:45 p.m. PSXI-15 **Effects of Selenium-enriched Fermented Chinese Herbal Medicine on Growth Performance, Immune Performance and Meat Quality of Fowl**

Yunfen zhu ¹, Xiaofei Chen ¹, Junhui Xie ¹, Rong li ¹, Dejun Tan ¹, guogui Wang ¹, Jin Ma ¹, Yuehui Ma ²
¹Enshi Autonomous Prefecture Academy of Agricultural Sciences, ²Institute of Animal Science, Chinese Academy of Agricultural Sciences

3:45 p.m. PSXI-16 **Effects of Transportation to Tibet on Serum Biochemical Characteristics of Sanhe Heifers**

Zhang Xinyu ¹, Shengli Li ²
¹China agricultural university, ²China Agricultural University

3:45 p.m. PSXI-17 **Evaluation of Influence of the Total Accumulation of Toxic Elements in Blood Serum on the Indicators of Milk Productivity of the Holstein Cows**

Isidora Zubac¹, Irina Sycheva², Alexey Komarchev³, Petr Nikitin⁴, Vladimir Vasilev⁵, Irina Vasilyeva⁶, Marina Stepanovitch⁷

¹University of Belgrade, ²Russian State Agrarian University –Moscow Timiryazev Agricultural Academy, ³Federal Scientific Center «All-Russian Research and Technological Institute of Poultry» of Russian Academy of Sciences, ⁴Department of Data Analysis and Machine Learning, Financial University under the Government of the Russian Federation, ⁵Moscow Regional Research and Clinical Institute "MONIKI", ⁶Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University), ⁷Russian State Agrarian University – Moscow Timiryazev Agricultural Academy

3:45 p.m. PSXI-8 **Evaluation of Nutrient Composition and Protein Quality Using the Precision Fed Cecectomized Rooster Assay of Novel Avian Protein Sources for Pet Nutrition**

Victoria A. Gomez¹, Pamela L. Utterback², Carl M. Parsons², Maria R C de Godoy²

¹University of Illinois, ²University of Illinois at Urbana-Champaign

3:45 p.m. PSXI-18 **Evaluation of Plasma Oxidation Products in Beef Calves Challenged with Lipopolysaccharide (LPS) Following Methionine Supplementation**

Samantha N. Barker¹, Treylr Jackson², John T. Richeson², Jeffery A. Carroll³, Nicole C. Burdick Sanchez³, Paul R. Broadway³, Jerrad F. Legako¹

¹Texas Tech University, Department of Animal and Food Sciences, ²West Texas A&M University, ³USDA-ARS, Livestock Issues Research Unit

3:45 p.m. PSXI-19 **Evaluation of Salmonella Enteritidis (S.E.) Cecal Excretion and Ovary Infection Rates After SE Challenge in Commercial Layer Pullets Fed with Feed Energy Company Product R2**

Abdullah A. Mahfuz¹, Mathew Jones², Mohan Dasari¹, Roy Berghaus³, Charles L. Hofacre²

¹Feed Energy Company, ²Southern Poultry Research Group, Inc, ³University of Georgia

3:45 p.m. PSXI-20 **Evaluation of the Effects of Hempseed Cake on Immune Parameters in Response to an Endotoxin Challenge in Finishing Steers**

Thomas Winders¹, Bryan W. Neville², Kendall C. Swanson¹

¹North Dakota State University, ²USDA, ARS, U.S. Meat Animal Research Center

3:45 p.m. PSXI-1 **Influence of Graded Levels of Microbially Enhanced Protein on Processing and Expansion of Extruded Dog Foods**

Youhan Chen¹, Greg Aldrich¹

¹Kansas State University

3:45 p.m. PSXI-10 **Macronutrient and Protein Quality Evaluation of Novel Mammalian Proteins for Canine and Feline Nutrition**

Victoria A. Gomez¹, Pamela L. Utterback², Carl M. Parsons², Maria R C de Godoy²

¹University of Illinois, ²University of Illinois at Urbana-Champaign

3:45 p.m. PSXI-11 **Oxidation Analysis on Chicken Meat Meals Composition, Aromatics, and Palatability: A Novel Aromatic Palatability Trial Utilizing Labrador Retrievers, Hercules Enose UFGC, SPME, and Broad Spectrum GCMS**

Fiona Mccracken¹, Jason W. Fowler¹, Jessica L. Varney¹, Melissa Austin¹, Chamara Jayasundera¹, B.J. Bench², Craig N. Coon¹

¹Four Rivers Kennel, LLC, ²Tyson Foods Ingredient Solutions Group

3:45 p.m. PSXI-4 **Use of Foodomics Analysis to Biochemically Compare Different Pet Food Ingredient Categories**

Danielle Opetz¹, Alison Beloshapka¹, Patricia Massae Oba¹, Maria R C de Godoy², Kelly S. Swanson²

¹University of Illinois Urbana-Champaign, ²University of Illinois at Urbana-Champaign

3:45 p.m. PSXI-13 **Using the Indicator Amino Acid Oxidation (IAAO) Technique to Determine Histidine Requirements for Puppy (>14 wk-9 Mo) Labrador Retrievers**

Jordan T. Weil¹, Jessica L. Varney¹, Jason W. Fowler¹, Heather A. Adams¹, Ryan Wilkinson¹, Craig N. Coon¹

¹Four Rivers Kennel, LLC

3:45 p.m. PSXI-21 **Validation of a Method to Determine Dogs' Preference for Flavors**

Paris M. Johnson¹, Logan Kilburn-Kappeler¹, Kadri Koppel¹, Charles G. Aldrich¹

¹Kansas State University

CSAS Graduate Student Oral Competition: PHD

Chair: Obioha Durunna, Department of Applied Research, Lakeland College Vermilion

4:30 PM - 6:00 PM

302A

4:30 p.m. 160 **Effects of Bacillus Licheniformis PF9 on Growth, Nutrient Absorption, Gut Barrier Integrity, Immunity, and Intestinal Microbiota of Weaned Piglets Challenged with Enterotoxigenic Escherichia coli F4**

Haoxiang Xu¹, Peng Lu¹, Joshua Gong², Hai Yu³, Paula Azevedo¹, Joshua Gong², chengbo Yang⁴

¹Department of Animal Science, University of Manitoba, ²Guelph Research and Development Centre, Agriculture Agri-Food Canada, ³Guelph Research and Development Centre, Agriculture & Agri-Food Canada, Guelph, Ontario N1G 5C9, Canada, ⁴Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

4:45 p.m. 161 **Effect of High- and Low-fiber Diets on Growth Performance in Growing-finishing Pigs Selected for Low or High Feed Efficiency**

Shunshun Jin¹, Changning Yu², Haoxiang Xu³, Paula Azevedo³, Huaigang lei⁴, Argenis Rodas-Gonzalez⁵, Charles Martin Nyachoti⁵, Karmin O², chengbo Yang⁶

¹University of manitoba, Department of Animal Science, ²University of manitoba, ³Department of Animal Science, University of Manitoba, ⁴Topigs Norsvin Canada Inc., ⁵University of Manitoba, ⁶Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

5:00 p.m. 162 **Differential Late Gestation Metabolizable Energy Intake Alters Adipose-specific Insulin Responsiveness in Antepartum Beef Cattle**

Koryn S. Hare ¹, Emily Croft ², Greg B. Penner ³, Katharine M. Wood ², Michael A. Steele ⁴
¹Department of Animal Bioscience, University of Guelph, ²University of Guelph, ³Department of Animal and Poultry Science, University of Saskatchewan, ⁴Department of Animal Biosciences, University of Guelph

5:15 p.m. 163 **Assessment of the Methanogenic Archaeal Communities Throughout the Gastrointestinal Tract in Beef Cattle with Different Breeds**

Yajing Ban ¹, Mi Zhou ², Tim A. McAllister ³, Le Luo L. Guan ²
¹University of Alberta, ²Department of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB T6G 2P5, Canada, ³Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

5:30 p.m. 164 **Out-of-feed Events and Gastric Ulcers in Finishing Pigs Fed 40 % Air-classified Pea Starch Diets**

Agbee L. Kpogo ¹, Megan Dubois ¹, Matthew Loewen ¹, Denise Beaulieu ¹, Rex N. Newkirk ²
¹University of Saskatchewan, ²Department of Animal and Poultry Science, University of Saskatchewan

5:45 p.m. 165 **Environmental Concerns Identified Through an Anonymous Online Survey**

Staci McGill ¹, Morgan Hayes ¹
¹University of Kentucky

Wednesday, June 29, 2022

Poster Session XII

Sponsored by Arm & Hammer Animal and Food Production

7:00 AM - 8:00 AM

Exhibit Hall A

7:00 a.m. PSXII-9 **Application of Machine Learning Algorithms to Estimate Tropical Pasture Biomass Based on Satellite Images**

Marcia H M R Fernandes ¹, Jalme Fernandes ², Ricardo Reis ³, Luis O. Tedeschi ⁴
¹Sao Paulo State University, UNESP, ²Sigfarm Intelligence, ³Sao Paulo State University (UNESP), ⁴Texas A&M University

7:00 a.m. PSXII-1 **CNV and CNVR Detection from High-density SNP Genotyping in Holstein Cattle**

Giovanni C. Ladeira ¹, Pablo J. Pinedo ², José Eduardo E. Portela Santos ¹, William W. Thatcher ¹, Fernanda M. Rezende ¹
¹University of Florida, ²Department of Animal Sciences, College of Agricultural Sciences, Colorado State University, Fort Collins, CO, USA

7:00 a.m. PSXII-10 **Concordance Between a Time-of-flight Sensor and Plate Meter Method for Estimating Forage Mass**

Shane Gadberry ¹, Tom Hess ¹, Nate T. Moss ¹
¹UA Livestock and Forestry Station

7:00 a.m. PSXII-2 **Effect of TG5 (c.-422C>T) Polymorphism on Fatty Acid Composition of Muscle Tissue in Bull**

Jela Tepavcevic¹, Irina Sycheva², Aleksandr Orishev³, Irina Bystrenina⁴, Azer Mamedov³, Maria Karnaushekina⁵, Vladimir Vasilev⁶

¹University of Belgrade, ²Russian State Agrarian University –Moscow Timiryazev Agricultural Academy, ³Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, ⁴Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, ⁵Federal State Autonomous Educational Institution of Higher Education «Peoples' Friendship University of Russia» (RUDN University), ⁶Moscow Regional Research and Clinical Institute "MONIKI"

7:00 a.m. PSXII-3 **Estimation of Heritability and Correlation of Functional Traits in the Peruvian Paso Horse (preliminary Studies)**

Jorge L. Vilela¹, Bertha Isabel Tupac Yupanqui¹, Maria Lourdes Velarde¹, Paola Quintana¹, Teresa Vargas¹, Rosario Gonzales¹, Aranzazu Sokolich², Jose Dextre¹

¹Universidad Científica del Sur, Grupo de Investigación Ciencia Equina y Animales Autóctonos, ²Universidad Científica del Sur

7:00 a.m. PSXII-4 **Estrus Synchronization and Artificial Insemination in Korean Black Goats Using Frozen-thawed Semen**

Kwan-Woo Kim¹, Eun-Do Lee¹, Dong-Kyo Kim¹, Bong-Hwan Choi¹, Sung woo Kim¹, Sang-Hoon Lee¹

¹National institute of animal science

7:00 a.m. PSXII-5 **Evaluation of Influence of Single-nucleotide Polymorphism of CSN3 on Amino Acid and Mineral Composition of Milk from the Holstein Cows**

Mihajlo Adamovich¹, Yulia Chernyshenko², Irina Mironova², Zulfiya Galiyeva², Elvira Yarmukhamedova², Ruzel Khabibullin², Alla Osipova³

¹University of Belgrade, ²Bashkir State Agrarian University, ³Russian State Agrarian University – Moscow Timiryazev Agricultural Academy

7:00 a.m. PSXII-6 **Evaluation of the Influence of Bgh Gene Polymorphism on Elemental Composition of Blood Serum and Beef Productivity of Black Spotted Bulls**

Mihajlo Adamovich¹, Ruzel Khabibullin², Irina Mironova², Elvira Yarmukhamedova², Zulfiya Galiyeva², Yulia Chernyshenko², Vladimir Vasilev³

¹University of Belgrade, ²Bashkir State Agrarian University, ³Moscow Regional Research and Clinical Institute "MONIKI"

7:00 a.m. PSXII-7 **Evaluation of Winter Hair Coat Shedding on Cow and Calf Performance in Crossbred Angus Cattle in Arkansas**

Kirsten A. Midkiff¹, Beth B. Kegley², Bernard W. Krumpelman³, B R. Kutz⁴, Jeremy G. Powell¹

¹University of Arkansas System Division of Agriculture, ²University of Arkansas Division of Agriculture, ³University of Arkansas, Division of Agriculture, Department of Animal Science, ⁴University of Arkansas

7:00 a.m. PSXII-11 **Evaluation of Yellow-flowered Subspecies Falcata Alfalfa to Purple Flowered Medicago Sativa for Northern Plains: Productivity, Nutrient Profile, and in vitro True Dry Matter Digestibility**

Rachael G. Christensen¹, John R. Hendrickson¹

¹USDA-ARS

7:00 a.m. PSXII-8 **Gaussian Kernel Based on Geographic Information to Model Farm Effects in Genetic Evaluation of Pasture-raised Beef Cattle**

Talita E. Zunino Santana ¹, Renata Veroneze ², Anderson A. Carvalho Alves ³, Gilberto R. O. Menezes ⁴, Guilherme J. M. Rosa ⁵

¹Federal University of Vicosa; University of Wisconsin-Madison University of Wisconsin-Madison, ²Universidade Federal de Viçosa, ³Department of Animal and Dairy Sciences, University of Wisconsin - Madison, ⁴EMBRAPA Beef Cattle, ⁵University of Wisconsin-Madison

7:00 a.m. PSXII-18 **Genome-wide Association for Behavioral Anestrus in Swine**

Hiruni R. Wijesena ¹, Dan J. Nonneman ¹, Gary A. Rohrer ¹, Brittney N. Keel ¹, Warren M. Snelling ², Clay A. Lents ³

¹USDA, ARS, U.S. Meat Animal Research Center, ²USDA, ARS, Roman L Hruska U.S. Meat Animal Research Center, ³USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit

7:00 a.m. PSXII-12 **Heritage Raramuri Criollo Cattle Production as a Potential Strategy for Conservation of Black Grama in the Chihuahuan Desert**

Shelemia Nyamuryekung'e ¹, Rick Estell ², Darren James ³, Andrés Cibils ⁴, Matt M. McIntosh ⁵, Sheri Spiegel ³, Santiago Utsumi ¹

¹Department of Animal and Range Science, New Mexico State University, ²Jornada Experimental Range, USDA ARS, ³USDA/ARS Jornada Experimental Range, ⁴Southern Plains Climate Hub, USDA ARS OCPARC, ⁵Animal and Range Science Department, New Mexico State University

7:00 a.m. PSXII-13 **Impact of Intensification on the Ratio Between Carbon Emission Per Human-edible Protein Produced of Nellore Young Bulls in Tropical Production Systems**

Laís Lima ¹, Fernando Ongaratto ², Marcia H M R Fernandes ³, Diwakar Vyas ¹, Euclides Malheiros ⁴

¹University of Florida, ²Nutripura, ³Sao Paulo State University, UNESP, ⁴Unesp

7:00 a.m. PSXII-14 **Impact of Nitrogen Application and Intercrop Forage Species on Chemical Composition and Yield of Standing Corn and Intercropped Forages**

Genet Mengistu ¹, Yvonne Lawley ¹, Kim H. Ominski ¹, Emma J. J. McGeough ¹

¹University of Manitoba

7:00 a.m. PSXII-15 **Impacts of Forage Maturity and Apple Cider Vinegar Supplementation on Fermentation Parameters Using Ruminant Batch Culture**

Miriam A. Snider ¹, Sara E. Ziegler ², Heather M. Darby ², Jana Kraft ¹, Sabrina L. Greenwood ¹

¹University of Vermont, ²UVM Extension Northwest Crops and Soils Program

7:00 a.m. PSXII-16 **Intercropped Sorghum Sudan Grass and Cowpea for Improved Summer Pasture**

Ivan R. Thomas ¹, Ken P. Coffey ¹, Christine C. Nieman ², Michael P. Popp ¹

¹University of Arkansas, ²USDA-ARS

7:00 a.m. PSXII-19 **Pediococcus Acidilactici and Lactobacillus Helveticus Inhibit Enterotoxigenic Escherichia coli Adhesion to Porcine IPEC-J2 Intestinal Cells but Do Not Protect Paracellular Epithelial Permeability**

Claudia Tellman ¹, Rui Zheng ¹, Elizabeth Due ¹, Rafael Jimenez-Flores ², Sheila K. Jacobi ²

¹Ohio State University, ²The Ohio State University

7:00 a.m. PSXII-17 **The Effects of N Fertilization on N₂O Emissions from Urine or Fecal Samples from Nellore Bulls**

Fernando Ongaratto ¹, Felipe Xavier ², Laís Lima ², Marcia H M R Fernandes ³, Diwakar Vyas ², Euclides Malheiros ⁴

¹NutriPura, ²University of Florida, ³Sao Paulo State University, UNESP, ⁴Unesp

7:00 a.m. PSXII-21 **The Impact of Genomic Selection on Canadian Holstein Cattle Population Structure**

Christiana O. Obari ¹, Christina M. Rochus ¹, Flavio S. Schenkel ², Filippo Miglior ³, Christine F. Baes ⁴

¹University of Guelph, ²Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada, ³Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Lactanet, Genetics Division, Guelph, Canada, ⁴Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Institute of Genetics, Vetsuisse Faculty, University of Bern, Bern, Switzerland

7:00 a.m. PSXII-20 **Use of Statistical Process Control to Evaluate the Effect of Isoquinoline Alkaloids Supplementation on Productive Performance of Growing-finishing Pigs**

Valeria c. Artuso ¹, Tobias c. Steiner ¹, Emilio Cano ², Flavio Ribeiro ³, Alberto Morillo-Alujas ⁴

¹Phytobiotics Futterzusatzstoffe GmbH, ²Rey Juan Carlos University, ³Phytobiotics North America, LLC, ⁴Tests & Trials

**Production, Management and Environment Symposium:
Sustainability: Moving from Buzzword to Application**

Chair: Michael Looper, University of Arkansas System Division of Agriculture,
Department of Animal Science Fayetteville

8:00 AM - 12:00 PM

205 A/B

8:00 a.m. **Production, Management and Environment Symposium Introduction**

8:05 a.m. 318 **Setting the Stage: What Are We Being Asked to Know and Do?**

Constance Cullman ¹

¹American Feed Industry Association

8:45 a.m. 316 **Sustainability in Practice at the Dairy Farm Sector**

Juan Tricarico ¹

¹Innovation Center for U.S. Dairy

9:25 a.m. 317 **Importance and Difficulty of Measuring Complete Greenhouse Gas Flux from Diverse Beef Production Systems**

Galen E. Erickson ¹, Andrea K. Watson ², Andy Suyker ², Yijie Xiong ³, J. Okalebo ¹

¹University of Nebraska- Lincoln, ²University of Nebraska-Lincoln, ³University of Nebraska

10:05 a.m. **Production, Management and Environment Symposium Break**

10:15 a.m. 315 **Recognizing and Balancing Sustainable Trade-offs in the Swine Industry**

Joel M. DeRouchey¹

¹Kansas State University

10:55 a.m. 319 **Reflections at the Half Way Point of a Multi-institutional Comprehensive USDA Sustainable Agriculture Systems Project: Empowering the US Broiler Industry for Transformation and Sustainability**

Walter Gay. Bottje¹, Xingen Lei², Sami Dridi¹

¹University of Arkansas, ²Cornell University College of Agricultural and Life Science

11:35 a.m. **Production, Management and Environment Symposium Discussion**

Poster Session XIII

Sponsored by Arm & Hammer Animal and Food Production

8:15 AM - 9:15 AM

Exhibit Hall A

8:15 a.m. PSXIII-10 **Association of Fatty Acids, Prebiotics and Zinc Proteinate to Support Weaned Piglet Growth in Antibiotic Growth Promoter Free Diets**

Juliana S. Martins¹, Alice E. Murakami¹, Gabriel A. Araujo¹, Vitoria T. Santos¹, Magali S. Pozza², Felipe A. Cancian¹, Paulo C. Pozza¹

¹State University of Maringá, ²State University of Maringá

8:15 a.m. PSXIII-11 **Avemix XG 10 Improves Piglet Performance When Dietary Net Energy Content Is Decreased**

Aurélié Montagnon¹, Dan BUSSIÈRES², Joan E. EDWARDS¹, Leni KUTERNA¹

¹Palital Feed Additives B.V., ²Groupe CÉRÈS Inc.

8:15 a.m. PSXIII-12 **Characterization of Physiochemical and Nutrient Profiles of Feedstock and Co-products from Canola Bio-oil Processing in Ruminants: Impacted by Source Origin**

A. Oliveira¹, P. Yu²

¹CSAS, ASAS, ²ASAS, CSAS, ADSA

8:15 a.m. PSXIII-1 **Does Providing Bedding Change the Latency and Duration of Cattle Lying Behavior During Long-distance Transport Rest Stops?**

Paula Olivares Guzman¹, Sonia Marti², David L. Pearl¹, Karen S. Schwartzkopf-Genswein³, Daniela M. Meléndez³, Derek B. Haley¹

¹University of Guelph, ²IRTA, Ruminant Production, ³Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

8:15 a.m. PSXIII-13 **Effect of Dietary Supplementation of Crushed Sasa Quelpaertensis Nakai on Growth Performance, Carcass Characteristics and Meat Quality in Landrace Pigs**

Moon-Cheol Shin¹, Jong-An Lee¹, Jea-Young Choi¹, In-Cheol Cho¹, Hyeon-Ah Kim¹, Byoung-Chul Yang¹

¹National Institute of Animal Science

8:15 a.m. PSXIII-14 **Effect of Non-starch Polysaccharide Enzyme Supplementation with Low Energy Diet on Growth Performance, Lean Meat Percentage, Back Fat Thickness, and Nutrient Digestibility of Growing Pigs**

Chai Bin Lim ¹, Kimoon Kim ², Md Raihanul Hoque ¹, In Ho Kim ³

¹Department of Animal Resources Science, Dankook University, ²Chungnam National University, ³Dankook University

8:15 a.m. PSXIII-3 **Effect of Pen Stocking Density on Animal Performance, Social Behavior, and Animal and Pen Dirtiness in Holstein Bulls Fed High-concentrate Diets**

Lourdes Llonch ¹, Sonia Marti ¹, Belen Fernandez ², Francesc X. Prenafeta-Boldú ³, Marçal Verdu ⁴, Xavier Salsa ⁵, Maria Devant ¹

¹IRTA, Ruminant Production, ²IRTA, Sustainability in biosystems program, ³IRTA-Biosystems Sustainability, ⁴Alimentació Animal i Producció, bonÀrea Agrupa, ⁵Agropecuària Montgai S.L.

8:15 a.m. PSXIII-2 **Effect of Rest, Post-rest Transport Duration, and Conditioning on Performance and Physiological Welfare Indicators of Beef Calves**

Daniela M. Meléndez ¹, Sonia Marti ², Timothy D. Schwinghamer ³, Derek B. Haley ⁴, Xiaohui Yang ⁵, Matthew R. Reynolds ⁶, Karen S. Schwartzkopf-Genswein ¹

¹Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, ²IRTA, Ruminant Production, ³Agriculture and Agri-Food Canada, ⁴University of Guelph, ⁵Agriculture and Agri-Food Canada, Lethbridge Research and Development Centre, Lethbridge, AB Canada, ⁶University of Saskatchewan, Department of Animal and Poultry Science, Saskatoon, SK Canada

8:15 a.m. PSXIII-15 **Effects of Bovine Colostrum Administration on Piglet Growth and Intestinal Health During the Lactation and Post-weaning Periods**

Luca Lo Verso ¹, Philippe Tanguay ¹, Frédéric Guay ²

¹Laval University, ²Université Laval

8:15 a.m. PSXIII-16 **Effects of Clay Mineral ‘illite’ on the Growth Performance, Nutrient Digestibility and Meat-carcass Grade Quality in Growing-finishing Pigs**

Kimoon Kim ¹, Chai Bin Lim ², Muniyappan Madesh ², In Ho Kim ³

¹Chungnam National University, ²Department of Animal Resources Science, Dankook University, ³Dankook University

8:15 a.m. PSXIII-17 **Effects of Dietary Forage Inclusion During Finishing on Growth Performance, Feeding Behavior, and Ruminal Fermentation in Steers at Risk for Acidosis**

Colten W. Dornbach ¹, Joshua C. McCann ²

¹University of Illinois, ²University of Illinois at Urbana-Champaign

8:15 a.m. PSXIII-4 **Effects of Keel Bone Fracture on Behavioral Fear Responses of Laying Hens in the Late Laying Period**

Runxiang Zhang ¹, Kaiqi Yang ¹, Hanlin Yu ¹, Jun Bao ¹

¹College of Animal Science and Technology, Northeast Agricultural University

8:15 a.m. PSXIII-6 **Effects of Melatonin on Physiologic Responses and Behavior in Dairy Steers Following Lps-induced Inflammation**

Megan P. Owen ¹, Caleb O. Lemley ², Kalisha Yankey ³, Codi Bily ¹, Douglas Eborn ¹, Jared Mumm ¹, Caitlin Hart ², Keelee J. McCarty ⁴, William Epperson ²

¹Texas A&M University Commerce, ²Mississippi State University, ³Vanderbilt, ⁴Clemson University

8:15 a.m. PSXIII-18 **Effects of Spring and Fall Stockpile Grazing Management System on Performance of Fall-calving Beef Cows, Pre-weaning Calf Performance, and Forage Characteristics**

Kylie P. Ewing¹, Lucas T. Neira², Teresa Steckler³, William T. Meter¹, Daniel W. Shike¹

¹University of Illinois at Urbana-Champaign, ²University of Illinois Champaign-Urbana,

³University of Illinois Champaign-Urbana Extension

8:15 a.m. PSXIII-5 **Effects of Stocking Density on the Welfare and Immune Responses of Laying Hens Housed in Small Furnished Cages**

Runxiang Zhang¹, Hanlin Yu¹, Ye Wang¹, Jun Bao¹

¹College of Animal Science and Technology, Northeast Agricultural University

8:15 a.m. PSXIII-7 **Field Testing of Lora-wan Sensors for Real-time Tracking and Biosensing of Brangus and Raramuri Criollo Cattle Grazing a Small Pasture**

Shelemia Nyamuryekung'e¹, Glenn C. Duff², Rick Estell³, Santiago Utsumi¹, Micah Funk⁴, Andrés Cibils⁵, Andrew Cox¹, Qixu Gong⁶, Huiping Cao², Sheri Spiegel⁷, Vinicius N. Gouvea⁸, Carolina Brandani⁴

¹Department of Animal and Range Science, New Mexico State University, ²New Mexico State University, ³Jornada Experimental Range, USDA ARS, ⁴Animal and Range Science Department, New Mexico State University, ⁵Southern Plains Climate Hub, USDA ARS OCPARC, ⁶Computer Science Department, New Mexico State University, ⁷USDA/ARS Jornada Experimental Range, ⁸Texas A&M AgriLife Research

8:15 a.m. PSXIII-21 **Formulations of Vitamin K, Organic Acids, Essential Oils and Plant Hydroalcoholic Extracts Prevent Coccidiosis Impact on Growth Performances in Broilers**

Carl Julien¹

¹CRSAD

8:15 a.m. PSXIII-8 **Grazing Behavior of Cows Grazing Natural Grassland Under Silvopastoral Systems or Full Sun**

Guillermo Goncherenko¹, Martin Claramunt², Rodrigo Santa Cruz³, Jean Fedrigo³, Francisco Báez⁴, Stefania Pancini⁵, Vitor R.G R. G. Mercadante⁵, Carolina Viñoles³

¹Department of Animal and Poultry Sciences, Virginia Tech, ²Centro Universitario de la Región Este – CURE, Universidad de la República, Uruguay, ³Polo Agroforestal, Casa de la Universidad de Cerro Largo, CENUR-Noreste, Universidad de la República, Uruguay, ⁴Instituto Superior de la Carne, Centro Universitario de Tacuarembó, CENUR-Noreste, Universidad de la República, Uruguay, ⁵Virginia Tech

8:15 a.m. PSXIII-9 **Is There Any Relationship Between Water Intake and THI in a Brazilian Experimental Feedlot Under Tropical Conditions?**

Matheus C. Garcia¹, Filipe Mendonca¹, Matheus Carlis², Rafael Afonso³, Amoracyr Nuñez⁴, Paulo Bortoleto Junior², Vitor Viana⁵, Dante Lanna⁶

¹Luiz de Queiroz College of Agriculture, ²FZEA-USP, ³ESALQ/USP, ⁴University of Goias,

⁵Boehringer Animal Health, ⁶University of São Paulo

8:15 a.m. PSXIII-19 **Snaplage Residue as a Strategy to Finish Beef Cattle Under Different Stocking Rates**

ÍTALO BRAZ G. DE LIMA ¹, Daniel R. Casagrande ², Thiago Bernardes ², Mateus P. Gionbelli ³, Marcio M. Ladeira ⁴, Daniel W. Shike ⁵, priscila cruz ⁴

¹University of Illinois Urbana-Champaign, ²University of Lavras, Brazil, ³Universidade Federal de Lavras, Brazil, ⁴Universidade Federal de Lavras, ⁵University of Illinois at Urbana-Champaign

8:15 a.m. PSXIII-20 **Study of Brachiaria Genotype Resistance to Pasture Leafhoppers Attack**

Jordana Andrade ¹, Filipe Mendonca ², Mailza Gonçalves ³, Ana Carolinne Silva ⁴, Matheus C. Garcia ², Joao Ventorin ⁵, Leandro Barbero ⁴

¹University of Uberlandia, ²Luiz de Queiroz College of Agriculture, ³São Paulo State University, ⁴University of Uberlândia, ⁵ESALQ/USP

Horse Species

Chair: Tayler Hansen, Trouw Nutrition

8:30 AM - 11:00 AM

201

8:30 a.m. **Horse Species Introduction**

8:35 a.m. 214 **Awardee Talk: Using Nutrition to Improve Immune Competence in Horses**

Lori K. Warren ¹

¹University of Florida

9:05 a.m. 216 **Effects of Total Equine Grain Containing Ascophyllum Nodosum Seaweed Extract and Chelated Minerals on in-vitro dDM & dNDF, Body Composition, and Post-exercise Recovery in Mature Quarter Horse Mares**

Kai Yun Lai ¹, Dylan Porter ¹, Jamie A. Boyd ¹

¹Sul Ross State University

9:20 a.m. 220 **Effects of Total Equine Grain with Ascophyllum Nodosum Seaweed Extract and Chelated Minerals on Forage Intake, DM, NDF, and ADF Digestibility, in Quarter Horse Mares Under Performance Conditions**

Jamie A. Boyd ¹, Kai Yun Lai ¹

¹Sul Ross State University

9:35 a.m. 219 **Evaluation of Dietary Arginine Supplementation to Increase Placental Nutrient Transporters of Aged Mares**

Rafael E. Martinez ¹, Jessica L. Leatherwood ¹, Amanda N. Bradbery ², Brittany L. Paris ³, Carolyn J. Hammer ⁴, Dale Kelley ⁵, Fuller W. Bazer ³, Guoyao Wu ³

¹Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research,

²Montana State University, ³Texas A&M University, ⁴Department of Animal Sciences, North

Dakota State University, ⁵College of Veterinary Medicine, Oklahoma State University

9:50 a.m. **Horse Species Break**

10:00 a.m. 215 **Awardee Talk: Astaxanthin Supplementation During Deconditioning and Reconditioning Periods Reduces Oxidative Stress in Circulation in Polo Ponies**
Mia Y. Kawaida¹, Oh Sung Kwon², Ahram Ahn³, Amanda S. Reiter¹, Nicole M. Tillquist¹, Sarah A. Reed⁴

¹University of Connecticut, ²University of Connecticut, ³University of Connecticut, ⁴Dept. of Animal Science, University of Connecticut

10:30 a.m. 217 **Acceptability of Hempseed Meal in Horses**

Ryon W. Springer¹, Teighlor D. Cross², Paxton L. Turner², Kallyn S. Ciesynski², Lillian F. Esterl-Byrne², Cheyenne, A. C. Mason², Caitlan C. Thorne², Kimberly A. Guay¹, Kimberly B. Wellmann¹, Trinetta N. Jones¹

¹Department of Animal Science, Tarleton State University, ²Tarleton State University

10:45 a.m. 218 **Hard and Easy Keeper Microbiomes Reveal Unique Microbial Responses to Carbohydrate and Protein Sources**

Alexa C.B Johnson¹, Amy S. Biddle¹

¹University of Delaware

Companion Animal II

Chair: Amanda Dainton, Freshpet

8:30 AM - 11:45 AM

301 C/D

8:30 a.m. **Companion Animal II Introduction**

8:35 a.m. 122 **Human-grade Dog Diets Dramatically Shift the Fecal Microbiome of Healthy Adult Dogs**

Elizabeth L. Geary¹, Patricia Massae Oba¹, Kelly S. Swanson²

¹University of Illinois Urbana-Champaign, ²University of Illinois at Urbana-Champaign

8:50 a.m. 123 **Effects of a Saccharomyces Cerevisiae Fermentation Product-supplemented Diet on Fecal Characteristics, Oxidative Stress, and Blood Gene Expression of Adult Dogs Undergoing Transport Stress**

Sofia M. Wilson¹, Sharon A. Norton², Matt Panasevich³, Patricia Massae Oba⁴, Samantha A. Koziol⁵, Kelly S. Swanson¹

¹University of Illinois at Urbana-Champaign, ²Cargill, Incorporated, ³Blue Buffalo, ⁴University of Illinois Urbana-Champaign, ⁵University of Illinois at Urbana-Champaign

9:05 a.m. 125 **Evaluation of Antioxidant-containing Kibble on Serum Antioxidant Biomarkers in Adult Beagles**

Matt Panasevich¹, Leighann Daristotle¹, Ching-Yen Lin¹, Nolan Frantz²

¹Blue Buffalo, ²Blue Buffalo Company

9:20 a.m. 126 **Antioxidant-containing Kibble Supplemented to Adult Cats Elicited Improvements in Antioxidant Outcomes and C-reactive Protein**

Matt Panasevich¹, Leighann Daristotle¹, Ching-Yen Lin¹, Nolan Frantz²

¹Blue Buffalo, ²Blue Buffalo Company

9:35 a.m. 124 **The Acute Effects of Supplementing a Meat-based Diet with a Combination of Creatine, Carnitine and Choline, Taurine or Methionine on Post-prandial Plasma Creatine and Creatinine Concentrations in Dogs**

Sydney Banton ¹, Ulrike Braun ², Julia Guazzelli Pezzali ³, Anna Kate K. Shoveller ¹

¹University of Guelph, ²AlzChem Trostberg GmbH, ³university of guelph

9:50 a.m. 120 **Seasonal Variation of Select Serum Electrolyte Concentrations in Siberian Huskies Housed Outside in Ontario Canada from May Until October**

Terence C. McCorkell ¹, Pawanpreet Singh ¹, James Templeman ¹, Cara L. Cargo-Froom ¹, Anna Kate K. Shoveller ¹

¹University of Guelph

10:05 a.m. **Companion Animal II Break**

10:15 a.m. 121 **Comparison of Corn Fermented Protein (CFP) to Traditional Yeast and Distillers Grain Fed to Healthy Adult Cats**

Logan Kilburn-Kappeler ¹, Charles G. Aldrich ¹

¹Kansas State University

10:30 a.m. 116 **The Effects of Dietary Phenylalanine on Gastric Emptying, Macronutrient Metabolism and Feed Intake in Healthy Adult Cats**

Jocelyn G. Lambie ¹, Julia Guazzelli Pezzali ², Pawanpreet Singh ¹, Anna Kate K. Shoveller ¹

¹University of Guelph, ²university of guelph

10:45 a.m. 117 **Assessment of Complete Blood Count and Biochemistry Parameters in Adult Dogs Fed a Grain-free Diet with up to Forty-five Percent Pulse Inclusion**

Pawanpreet Singh ¹, Sydney Banton ¹, James Templeman ¹, Shari Raheb ², Jennifer L. Saunders-Blades ³, Darcia Kostiuik ⁴, Janelle Kelly ³, Adronie Verbrugghe ⁵, Anna Kate K. Shoveller ¹

¹University of Guelph, ²Department of Clinical Studies, University of Guelph, Guelph, Ontario, ³Champion Petfoods, ⁴Champion Pet Foods LP, Morinville, Alberta, Canada., ⁵Ontario Veterinary College

11:00 a.m. 118 **Functional Properties of Bifidobacterium Animalis Subsp. Lactis CECT 8145 in Canine Nutrition**

Emanuela Kayser ¹, Fei He ¹, Gary M. Davenport ², Maria R C de Godoy ³

¹University of Illinois at Urbana Champaign, ²Archer Daniels Midland Company, ³University of Illinois at Urbana-Champaign

11:15 a.m. 119 **Change in Serum Total Lipid Profiles in Dogs Supplemented with Camelina, Flaxseed, or Canola Oil for 16 Weeks**

Scarlett Burrton ¹, Taylor Richards ¹, Anna Kate K. Shoveller ², Wendy Pearson ¹, Caitlin E. Grant ³, Nadeem Akhtar ², Luciano Trevizan ⁴

¹Department of Animal Biosciences, University of Guelph, ²University of Guelph, ³Department of Clinical Studies, Ontario Veterinary College, University of Guelph, ⁴Departamento de Zootecnia, Universidade Federal do Rio Grande do Sul

11:30 a.m. 127 **Standardized Amino Acid Digestibility and Protein Quality of Extruded Canine Diets Containing Hydrolyzed Protein**

Clare Hsu¹, Pamela L. Utterback¹, Carl M. Parsons¹, Fabio Marx², Ryan Guldenpfennig², Maria R C de Godoy¹

¹University of Illinois at Urbana-Champaign, ²Kemin Industries, Inc.

Young Scholar Award Talks III

Chair: Joel Caton, North Dakota State University

8:30 AM - 11:45 AM

209 A/B

8:30 a.m. **Young Scholar Award Talks III Introduction**

8:35 a.m. **394 Young Scholar Award Talk: Evaluation of New Markers to Predict Sperm Longevity and Bull Fertility**

Saulo Menegatti Zoca¹, Julie Walker², Joseph Dalton³, George A. Perry⁴

¹South Dakota State University Department of Animal Science, Brookings, SD, ²South Dakota State University, ³University of Idaho, ⁴Texas A&M AgriLife Research, Overton, TX

9:05 a.m. **395 Young Scholar Award Talk: Melatonin: A Promising Therapeutic for Compromised Pregnancies**

Zully E. Contreras-Correa¹, Riley D. Messman¹, Héctor L. Sánchez-Rodríguez², Derris D. Burnett³, Caleb O. Lemley¹

¹Mississippi State University, ²University of Puerto Rico-Mayagüez, ³PhD

9:35 a.m. **393 Young Scholar Award Talk: Investigation of Pain and Analgesic Strategies in Cattle Undergoing Painful Husbandry Procedures and Disease Conditions**

Miriam S. Martin¹, Michael D. Kleinhenz¹, Brad J. White², Abbie Viscardi³, Lily N. Edwards-Callaway⁴, Terry E. Engle⁵, Blaine Johnson³, Shawnee R. Montgomery¹, Andrew K. Curtis¹, Mikaela Weeder¹, Maria E. Lou⁶, Dale A. Blasi¹, Kelli M. Almes¹, Raghavendra G. Amachawadi³, Harith Salih¹, Matt D. Miesner⁷, Charley A. Cull⁸, Jon E. Seagren⁸, Kelly F. Lechtenberg⁸, Angela Baysinger⁹, Jason Nickell¹⁰, Octavio Guimareas⁵, David Schafer¹¹, Johann F. Coetzee¹²

¹Kansas State University, ²Beef Cattle Institute, Department of Clinical Sciences, College of Veterinary Medicine, Kansas State University, ³Kansas State University College of Veterinary Medicine, ⁴Department of Animal Sciences, Colorado State University, ⁵Colorado State University, ⁶University of Minnesota, ⁷Department of Clinical Sciences, Kansas State University, ⁸Midwest Veterinary Services, Inc., ⁹Merck Animal Health, ¹⁰Allflex Livestock Intelligence, ¹¹Colorado Agricultural Experiment Station, Colorado State University, ¹²Kansas State University College of Veterinary Medicine, Department of Anatomy and Physiology, Manhattan, KS

10:05 a.m. **Young Scholar Award Talks III Break**

10:15 a.m. **396 Young Scholar Award Talk: The Selection of Potential Probiotics for Bovine Respiratory Disease Treatment and Prevention**

Samantha M. Howe¹, Jianmin Chai², Hunter M. Usdrowski², Sarah Capik³, Beth B. Kegley⁴, John T. Richeson⁵, Jeremy Powell¹, Jiangchao Zhao²

¹University of Arkansas, ²Department of Animal Science, University of Arkansas, Fayetteville, AR, 72701, ³Texas A&M AgriLife Research and Department of Veterinary Pathobiology at Texas A&M College of Veterinary Medicine, ⁴University of Arkansas Division of Agriculture, ⁵West Texas A&M University

10:45 a.m. **398 Young Scholar Award Talk: Influence of a Lifetime Regimen of a Modified-live Viral or Killed Viral Vaccination Against Bovine Viral Diarrhea Virus on Beef Cattle Performance**

Emily A. Melchior-Tiffany¹

¹New Mexico State University

11:15 a.m. **397 Young Scholar Award Talk: Detecting Livestock Welfare Concerns and Production Issues Using Accelerometer and Global Positioning Systems**

Colin T. Tobin¹, Derek W. Bailey², Sara C. Gurule³, Jennifer A. Hernandez Gifford², Mark G. Trotter⁴

¹North Dakota State University, ²New Mexico State University, ³Texas A&M University, ⁴CQUniversity

**Forages and Pastures Symposium I:
Complementary Forage Systems for Grazing Livestock**
Chair: Samuel Wyffels, Northern Agriculture Research Center
8:30 AM - 12:00 PM
207 A/B

8:30 a.m. **Forages and Pastures Symposium I Introduction**

8:35 a.m. 196 **Integration of Cover Crops and Livestock Grazing**

Darrin L. Boss¹

¹Northern Agriculture Research Center, Montana State University

9:05 a.m. 197 **Smart Foodscapes: Developing Functional Landscapes to Enhance the Sustainability Livestock Production Systems**

Juan J. Villalba¹

¹Utah State University

9:35 a.m. 194 **Sustainable Livestock Production from Phytochemically Diversified Pastures**

Serkan Ates¹

¹Oregon State University

10:05 a.m. **Forages and Pastures Symposium I Break**

10:15 a.m. 193 **Forage Species to Improve Nutritional Opportunity for Grazing Livestock – a Southeast Perspective**

Ken P. Coffey¹, Christine C. Nieman²

¹University of Arkansas, ²USDA-ARS

10:45 a.m. 198 **Using Annual Forage Crops to Extend Grazing: What Are the Benefits to Production and Livestock Enterprise Economics**

Paul A. Beck¹, Wayne Coblenz², John Jennings³, Matthew R. Beck⁴

¹Oklahoma State University, ²USDA ARS (Retired), ³University of Arkansas Division of Agriculture, ⁴USDA-ARS

11:15 a.m. 195 **Breeding Winter and Spring Two-row Barley for More Sustainable Livestock Production**

Jamie Douglas Sherman¹, Traci Hoogland², Jessica Williams², Greg Lutgen²

¹Montana State University, ²Montana State

11:45 a.m. **Forages and Pastures Symposium I Q&A**

Nonruminant Nutrition and Swine Species Symposium I:

Nutritional Intervention in Swine Production for the Environment and Gut Health

Chair: Sung Woo Kim, NC State University; Mohsen Abedin, Trouw Nutrition North America

8:30 AM - 12:00 PM

Ballroom B

8:30 a.m. **Nonruminant Nutrition and Swine Species Symposium I Introduction**

8:40 a.m. 242 **The Impact of Feed Formulation and Feeding Methods on Pig and Poultry Production on the Environment**

Candido Pomar¹, Aline Remus²

¹AAFC, ²Agriculture and Agri-Food Canada

9:20 a.m. 240 **Nutritional Intervention to Improve Carbohydrate Utilization and Gut Health in Pigs**

Ruurd T. Zijlstra¹, T. Vasanthan¹, Michael G. Gaenzle¹

¹University of Alberta

10:00 a.m. **Nonruminant Nutrition and Swine Species Symposium I Break**

10:10 a.m. 243 **Nutritional Intervention for Reduced Nitrogen Excretion and Better Intestinal Health**

Marcos Elias Duarte¹, Sung Woo Kim²

¹North Carolina State University, ²NC State University

10:50 a.m. 241 **Towards More Sustainable Use of Trace Elements in Pig and Poultry Feeding**

Jean-Yves Dourmad¹, Emma Gourlez², Francine De Quelen², Agnes Narcy³

¹INRAE, ²INRAE, Institut Agro, PEGASE, ³INRAE, Univ. Tours, BOA

11:30 a.m. 239 **Increasing Dietary Soybean Meal Level Improves Growth and Feed Conversion Efficiency in Healthy Pigs and Reduces GHG Emissions**

R. Dean Boyd¹, David S. Rosero², Amanda Elsbernd²

¹Animal Nutrition Research, ²The Hanor Company

11:55 a.m. **Nonruminant Nutrition and Swine Species Symposium I Conclusion**

**Animal Breeding and Genetics Symposium II:
What Sustainable Livestock Breeding Looks Like at Home and Abroad**
Chair: Gota Morota, School of Animal Sciences, Virginia Polytechnic Institute and State
University; Breno Fragomeni, University of Connecticut
8:30 AM - 3:15 PM
301 A/B

8:30 a.m. **Animal Breeding and Genetics Symposium II Introduction I**

8:35 a.m. 24 **Invited Speaker Dr. Luiz Brito**

Luiz F. Brito ¹
¹Purdue University

9:05 a.m. 23 **Sustainable Livestock Breeding with a Focus on Heat Stress**

Ignacy Misztal ¹
¹University of Georgia

9:35 a.m. 25 **Sustainable Dairy Breeding: Working within the US National Evaluation System**

Asha Miles ¹
¹AGIL-ARS-USDA

10:05 a.m. **Animal Breeding and Genetics Symposium II Panel Discussion I**

1:00 p.m. **Animal Breeding and Genetics Symposium II Introduction II**

1:05 p.m. 26 **Complementary Roles for Genetic Selection and Population Dynamics in Enhancing Livestock Sustainability**

Robin R. White ¹
¹Virginia Tech School of Animal Sciences

1:35 p.m. 22 **Sustainable Livestock Breeding: Challenges and Opportunities**

Christine F. Baes ¹, Christina M. Rochus ², Kerry Houlahan ³, Gerson A. Oliveira Jr ⁴, Nienke Van Staaveren ², Filippo Miglior ⁵
¹Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Institute of Genetics, Vetsuisse Faculty, University of Bern, Bern, Switzerland, ²University of Guelph, ³University Of Guelph, ⁴University of Guelph, Department of Animal Biosciences, Centre for Genetic Improvement of Livestock, Guelph, ON, Canada, ⁵Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Lactanet, Genetics Division, Guelph, Canada

2:05 p.m. **Animal Breeding and Genetics Symposium II Break**

2:15 p.m. 21 **Genetics and Genomic Approaches for Sustainable Dairy Cattle Improvement in Smallholder Dairy Systems**

Raphael Mrode ¹, Chinyere Ekine-Dzivenu ¹, Julie Ojango ¹, Mwai Okeyo ¹
¹ILRI

2:45 p.m. **Animal Breeding and Genetics Symposium II Panel Discussion II**

Poster Session XIV

12:00 PM - 1:00 PM

Exhibit Hall A

12:00 p.m. PSXIV-1 **Effect of Ambient Temperature on Respiration Rate and Ruminal Temperature for Growing-finishing Calf-fed Holstein Steers in the Feedlot During Summer in Southern California**

Brooke C. Latack¹, Pedro V. Carvalho², Richard A. Zinn²

¹University of California Cooperative Extension, ²University of California - Davis

12:00 p.m. PSXIV-2 **Effect of Drinking Water Disinfection Treatments on Water Quality, Water and Feed Consumption, Apparent Total Tract Digestibility and Health in Holstein Bulls Fed High-concentrate Diets**

Lourdes Llloch¹, Marçal Verdu², Sonia Martí¹, Joan Riera³, Carles Medinya⁴, Jordi Cucurull⁵, Maria Devant¹

¹IRTA, Ruminant Production, ²Alimentació Animal i Producció, bonÀrea Agrupa, ³Nanta SA, ⁴SINUAL, ⁵Grup BonArea

12:00 p.m. PSXIV-3 **Effect of Pen Mud Accumulation on the Growth Performance Growing-finishing Calf-fed Holstein Steers in the Feedlot During Summer in Southern California**

Pedro V. Carvalho¹, Brooke C. Latack², Richard A. Zinn¹

¹University of California - Davis, ²University of California Cooperative Extension

12:00 p.m. PSXIV-4 **Effects of Floor Space Allowance on Productivity of Sows**

Yejin Min¹, Yohan Choi¹, Joeun Kim¹, Doowan Kim¹, Yongdae Jeong¹, Hyunju park¹, Hakjae Chung¹, Soojin Sa¹, Dayeon Jeon¹, Hyunju Jin¹

¹National Institute of Animal Science

12:00 p.m. PSXIV-17 **Evaluation of Dietary *Saccharomyces Cerevisiae* Fermentation Products on Performance of Captive White-tailed Deer (*Odocoileus Virginianus*)**

Kyle Stutts¹, Tom S. Edrington², Madison McCluskey¹, Jessica L. Leatherwood³

¹Sam Houston State University, ²Diamond V, ³Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research

12:00 p.m. PSXIV-5 **Evaluation of Heat Resistance in Beef and Dairy Calves Using Peripheral Blood Mononuclear Cells and Hair Follicles Based on Heat Shock Protein 70 Genetic Polymorphisms**

WonSeob Kim¹, DongQiao Peng², YongHo Jo³, JangHoon Jo³, Jalil G. Nejad³, JaeSung Lee⁴, Jongkyoo Kim¹, HongGu Lee⁵

¹Michigan State University, ²Department of Animal Science, College of Animal Science, Jilin University, 5333 Xi'an Road Changchun City, Jilin Province, 130062, P.R. China, ³Department of Animal Science and Technology, Konkuk University, ⁴Department of Animal Science and Technology, Sanghuh College of Life Science Konkuk University, Seoul 05029, Republic of Korea, ⁵Department of Animal Science and Technology, Sanghuh College of Life Science, Konkuk University, Seoul 05029, Republic of Korea

12:00 p.m. PSXIV-18 **Fecal Dry-matter Output Determination from Irregular Marker Doses**

Corey A. Moffet¹, Stacey A. Gunter¹

¹USDA-ARS, Oklahoma and Central Plains Agricultural Research Center

12:00 p.m. PSXIV-6 **Feeding Frogs: A Path for Commercial Production Without the Need of Live Food**

Malcolm L. McCallum¹, Mary Mitchell¹, Yonathan Tilahun¹

¹Langston University

12:00 p.m. PSXIV-8 **Gender Differences and Reference Intervals of Concentrations of Chemical Elements in Hair from the Mane of the Bashkir Horses in the South Ural Biogeochemical Province**

Mihajlo Adamovich¹, Irina Mironova², Zulfiya Galiyeva², Ruzel Khabibullin², Yulia Chernyshenko², Nail Gubaidullin², Irina Vasilyeva³

¹University of Belgrade, ²Bashkir State Agrarian University, ³Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University)

12:00 p.m. PSXIV-12 **Genetic Selection Using Ecofeed Index Reduces Carbon Footprint in Lactating Dairy Cows**

Ermias Kebreab¹, Anna Naranjo², Jocelyn R. Johnson³, Nader Deeb³

¹UC Davis, ²University of California, Davis, ³ST Genetics

12:00 p.m. PSXIV-9 **Identification of Differential Methylation Regions as Candidate Discriminant Markers of Bovine Subclinical Mastitis Caused by Staphylococcus aureus**

Mengqi Wang¹, Mario Laterrière², Pier-Luc Dudemaine¹, Nathalie Bissonnette¹, David Gagné², Jean-Philippe Roy³, Sunday O. Peters⁴, Marc-André A. Sirard⁵, Eveline M. Ibeagha-Awemu¹

¹Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada, ²Quebec Research and Development Centre, Agriculture and Agri-Food Canada, ³Faculté de médecine vétérinaire, Université de Montréal, ⁴Department of Animal Science, Berry College, ⁵Department of Animal Science, Laval University

12:00 p.m. PSXIV-10 **Influence of Breeds on the Quality of Chilled Goat Semen Collected by Artificial Vagina**

Adel R. R. Moawad¹, Tiffany Reese², Miller Schauston¹, Mahipal Singh¹, Brou Kouakou¹

¹Fort Valley State University, ²Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,

12:00 p.m. PSXIV-11 **Microbial Characterization of Digital Dermatitis and Foot Rot in Feedlot Cattle**

Nicholas S. Wong¹, Karen S. Schwartzkopf-Genswein², Murray D. Jelinski³, Trevor Alexander⁴, Eugene Janzen⁵, Sarah E. Erickson⁶, Rodrigo Ortega Polo⁷

¹Agriculture and Agri-Food Canada, Lethbridge Research and Development Centre, Lethbridge, AB Canada; Department of Large Animal Clinical Sciences, Western College of Veterinary Medicine, ²Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, ³University of Saskatchewan, ⁴Agriculture Agri-Food Canada, Lethbridge Research and Developmental Center, ⁵University of Calgary, ⁶Feedlot Health Management Services by TELUS Agriculture; Western College of Veterinary Medicine Department of Large Animal Clinical Sciences, ⁷Agriculture and Agri-Food Canada, Lethbridge Research and Development Centre, Lethbridge, AB Canada

12:00 p.m. PSXIV-7 **Physiological Responses to Caprine Coccidiosis During a 100-year Rain Even in Oklahoma: An Opportunistic Case Study with Implications for Climate Change and Clinical Diagnosis**

Malcolm L. McCallum¹, Yonathan Tilahun¹, Jessica Quijada-Pinango¹, Zaisen Wang¹

¹Langston University

12:00 p.m. PSXIV-20 **Potassium Carbonate Rescues Growth and Bone Attenuation Responses to Ammonium Chloride in Feed for Growing Pigs, Supporting the Importance of the K:cl Ratio in Diet Formulations**

Johanna Hutchinson¹, Brittney P. Kokinos¹, Mariola Grez Capdeville¹, Laura A. Amundson¹, Thomas D. Crenshaw¹

¹Department of Animal and Dairy Sciences, University of Wisconsin-Madison

12:00 p.m. PSXIV-13 **Reference Intervals for the Concentrations of Main Essential and Toxic Elements in the Hair from the Mane of the Yakut Horses Bred in the Republic of Sakha (Yakutia)**

Jela Tepavcevic¹, Grigory Machakhtyrov², Varvara Machakhtyrova², Yana Shadrina², Vasilena Sleptsova²

¹University of Belgrade, ²Yakut Scientific Research Institute of Agriculture (YSRIA)

12:00 p.m. PSXIV-14 **Selenium and Copper Deficiency Associated Decline in Reproductive Performance in Summer Bred, Rotationally Grazed, Forage Fed Beef Cattle**

Jaedyn K. Rawson¹, Quinn Baptiste¹, Robert Harned², Marlon Knights³

¹Berea College, ²Farm Manager, ³The University of Trinidad and Tobago

12:00 p.m. PSXIV-15 **Synergistic Inhibition of Staphylococcal Growth by Select Nitrocompounds and Sodium Chlorate**

Oscar Ruiz-Barrera¹, Robin C. Anderson², MICHAEL E. HUME³, DAVID J. NISBET³, CLAUDIO ARZOLA-ALVAREZ⁴, YAMICELA CASTILLO-CASTILLO⁴, Jaime Salinas-Chavira⁵, MARINA ONTIVEROS-MAGADAN⁶, Claudio Angulo-Montoya⁷, MONSERRATH FELIX-PORTILLO⁴, FRANCISCO CASTILLO-RANGEL⁴

¹Universidad Autónoma de Chihuahua, ²USDA/ARS, Southern Plains Agricultural Research Center's Food & Feed Safety Research Unit, ³USDA/ARS, ⁴UNIVERSIDAD AUTONOMA DE CHIHUAHUA, ⁵Universidad Autonoma de Tamaulipas, ⁶UNIVERSIDAD AUTONOMA DE CIUDAD JUAREZ, ⁷Universidad Autonoma de Sinaloa

12:00 p.m. PSXIV-16 **The Influence of Lead Concentration in Blood Serum on the Antioxidant Status and the Intensity of Lipid Peroxidation in the Holstein Cows**

Isidora Zubac¹, Irina Sycheva², Irina Bystrenina³, Alexey Komarchev⁴, Tamara Kurmakaeva⁵, Maria Karnaushkina⁶, Ekaterina Kazakova²

¹University of Belgrade, ²Russian State Agrarian University –Moscow Timiryazev Agricultural Academy, ³Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, ⁴Federal Scientific Center «All-Russian Research and Technological Institute of Poultry» of Russian Academy of Sciences, ⁵Russian Academy of Agricultural Personnel Support, ⁶Federal State Autonomous Educational Institution of Higher Education «Peoples' Friendship University of Russia» (RUDN University)

**Nonruminant Nutrition and Swine Species Symposium II:
Dealing with E. coli Challenges in a Pre and Post Pharmacological Zinc World**

Chair: Jon Bergstrom, DSM

1:00 PM - 5:00 PM

Ballroom B

1:00 p.m. **Nonruminant Nutrition and Swine Species Symposium II Introduction**

1:05 p.m. 246 **Pathogenic Escherichia coli Populations Within the Gut Microbiota of Commercial Swine Herds in the U.S**

Ellen Davis ¹

¹ChurchDwight

1:50 p.m. 245 **Preparing for a Low Zinc World a New Paradigme for Feeding Piglet**

GILLES LANGEOIRE ¹

¹GILLES LANGEOIRE CONSULTING

2:35 p.m. **Nonruminant Nutrition and Swine Species Symposium II Break**

2:50 p.m. 244 **Application of the Escherichia coli Challenge Model in Developing Strategies to Improve Gut Health and Function in Weaned Pigs**

Charles Martin Nyachoti ¹, Jinyoung Lee ¹, chengbo Yang ²

¹University of Manitoba, ²Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

3:35 p.m. 247 **Nutritional Interventions: Our Experiences from the Field**

Dan BUSSIÈRES ¹

¹Groupe CÉRÈS Inc.

4:15 p.m. 248 **U.S. Challenges with E. coli and Road Map for the Future**

Kyle Coble ¹

¹JBS Live Pork

Poster Session XV

1:15 PM - 2:15 PM

Exhibit Hall A

1:15 p.m. PSXV-11 **A Postbiotic from Saccharomyces Cerevisiae Fermentation Improves Microbiome Robustness in Young Stress-challenged Horses in Training**

Erika Ganda ¹, Anirikh Chakrabarti ², Maria I. Sardi ³, Jillian M. Bobel ⁴, Briana Kozlowicz ⁵, Sharon A. Norton ⁵, Lori K. Warren ⁴, Ehsan Khafipour ⁶

¹The Pennsylvania State University, ²Cargill, Inc., ³Cargill Biotechnology Research and Development Center-Biology, ⁴University of Florida, ⁵Cargill, Incorporated, ⁶Cargill Animal Nutrition

1:15 p.m. PSXV-4 **Analysis of the Relationship Between Carcass Traits and Linear Body Measurements in Hanwoo Cattle**

Mina Park ¹, Masoumeh Naserkheil ¹

¹National Institute of Animal Science

1:15 p.m. PSXV-12 **Application of a Survey Instrument for Determining the Impact of Horse Breed Association Youth Programs for Youth with Attention Deficit Hyperactivity Disorder**

Molly Nicodemus ¹, Molly Friend ², Holly Evans ², Katie Holtcamp ², Julius Culwell ³

¹Animal & Dairy Sciences, Mississippi State University, ²Mississippi State University, ³Grace Christian School

1:15 p.m. PSXV-16 **Association of Experience and Pre-race Behavior in Performance Among Racing Quarter Horses**

Carley Sedziol ¹, Sari Bosnyak ², Nadja Knox ³, Haley Ravia ³, Clarence Edward Ferguson ⁴

¹Equine Studies Saint Mary of the Woods College, ²School of Animal Rural and Environmental Sciences, Nottingham Trent University, ³Department of Agricultural Sciences McNeese State University, ⁴Saint Mary of the Woods College

1:15 p.m. PSXV-14 **Clodronate Use Does Not Influence Physical Growth Parameters in Yearling Horses Undergoing Forced Exercise**

Matthew B. Conrad ¹, Jessica L. Leatherwood ², Kati G. Glass ³, Carolyn E. Arnold ⁴, Brittany L. Paris ³, James M. George ³, Rafael E. Martinez ², Brian D. Nielsen ⁵, Aimee C. Colbath ⁶, Thomas H. Welsh ⁷, Amanda N. Bradbery ¹

¹Montana State University, ²Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research, ³Texas A&M University, ⁴Department of Large Animal Clinical Sciences, Texas A&M University, ⁵Michigan State University, ⁶Department of Large Animal Clinical Sciences, Michigan State University, ⁷Texas A&M University, Department of Animal Science, College Station, TX

1:15 p.m. PSXV-8 **Development of Imaging Techniques to Evaluate Dietary Interventions That Promote Regression of Osteochondrotic Lesions in a Growing Pig Model**

Brittney P. Kokinos ¹, Laura A. Amundson ¹, Thomas D. Crenshaw ¹, Pam J. Lang ²

¹Department of Animal and Dairy Sciences, University of Wisconsin-Madison, ²Department of Orthopedics and Rehabilitation, University of Wisconsin-Madison

1:15 p.m. PSXV-9 **Effect of Forty-eight Hours of Feed and Water Deprivation on the Performance of Grazing Nellore Heifers**

Mateus José Inácio de Abreu ¹, Iorrano A. A. Cidrini ², Luis Henrique C. Batista ³, Igor Machado Ferreira ¹, Karla A. Oliveira ³, Luciana Melo Sousa ⁴, Matheus Queiroz de S. França ⁵, Gustavo Henrique Maciel Bisio ⁶, Flávio Dutra de Resende ⁷, Gustavo Rezende Siqueira ⁷

¹UNESP/APTA, ²Montana State University, ³Unesp - FCAV, Jaboticabal, SP, Brazil, ⁴UNESP / APTA, ⁵UNIFEB, Barretos, Sp, Brazil, ⁶UNIFEB / APTA, ⁷APTA

1:15 p.m. PSXV-15 **Effect of Supplemental Garlic on the Incidence of Heinz Body Anemia in Non-working Horses**

Phillip A. Gunter ¹, Victoria Willis ², Emily Cook ³

¹Western Kentucky University, ²Alltech, ³ADM Animal Nutrition

1:15 p.m. PSXV-17 **Effects of Dietary Supplementation with Spray Dried Plasma, Dried Intestinal Hydrolysates or Bovine Colostrum on the Growth and Intestinal Health of Weanling Pigs**

Luca Lo Verso ¹, Philippe Tanguay ¹, Marie-Pierre Létourneau-Montminy ², Frédéric Guay ²

¹Laval University, ²Université Laval

1:15 p.m. PSXV-18 **Effects of Drying Methods for Black Soldier Fly Larva Meals on in vitro Nutrient Disappearance**

Jeonghyeon Son ¹, Seol Hwa Park ², Hyun Jung Jung ², Beob G. Kim ¹

¹Konkuk University, ²National Institute of Animal Science, Rural Development Administration

1:15 p.m. PSXV-19 **Effects of L-glutamine and L-glutamate on Nursery Pigs Fed Diets with Low Digestible Lysine Content**

Erika S. Dorea ¹, Valdir Ribeiro Júnior ², Amanda Medeiros Correia ³, Gabriel C. Rocha ¹

¹Department of Animal Science, Universidade Federal de Viçosa, Minas Gerais, Brazil,

²Department of Animal Science, Universidade Federal de Sergipe, Nossa Senhora da Glória, Brazil, ³Universidade Federal de Viçosa

1:15 p.m. PSXV-20 **Effects of Salicylic Acid on Growth Performance, Fecal Score, Blood Profile and Nutrient Digestibility in Weaned Pigs**

Kimoon Kim ¹, Chai Bin Lim ², Cao Shanchuan ², In Ho Kim ³

¹Chungnam National University, ²Department of Animal Resources Science, Dankook University, ³Dankook University

1:15 p.m. PSXV-1 **Genetic Variants of the Ghrelin, ghr1a, MBOAT4 and NPY Genes Related to Feed Efficiency Traits and Ghrelin Plasma Concentration in Hampshire Lambs**

José G. Pérez-Álvarez ¹, Francisco J. Jahuey-Martínez ¹, José A. Martínez-Quintana ², Ana M. Sifuentes-Rincón ³, Guadalupe N. Aguilar-Palma ¹, Francisco A. A. Paredes Sánchez ³, Joel Domínguez-Viveros ¹, Felipe A. Rodríguez-Almeida ²

¹Universidad Autónoma de Chihuahua, Facultad de Zootecnia y Ecología, ²Universidad Autónoma de Chihuahua, ³Instituto Politécnico Nacional-Centro de Biotecnología Genómica

1:15 p.m. PSXV-2 **Genome-wide Association and Gene Network Analysis of Fatty Acid Composition in Beef from Brangus Cattle**

Eduardo E. Rodriguez ¹, Raluca G. Mateescu ¹

¹University of Florida

1:15 p.m. PSXV-3 **Genome-wide Association Study for Sweat Gland Area in Multi-breed Brahman-angus Population**

Aakilah Hernandez ¹, Andrea N. Nunez Andrade ¹, Eduardo E. Rodriguez ¹, Kaitlyn Sarlo Davila ², Raluca G. Mateescu ¹, Gabriel A. Zayas ¹

¹University of Florida, ²USDA

1:15 p.m. PSXV-5 **Incorporating Breed of Origin and Runs-of-homozygosity Information in a Genome-wide Association for Meat Traits in a Brangus Commercial Herd**

Gabriel A. Zayas ¹, Eduardo Rodríguez ¹, Kaitlyn Sarlo Davila ², Andrea N. Nunez Andrade ¹, Aakilah Hernandez ¹, Fernanda M. Rezende ¹, Raluca G. Mateescu ¹

¹University of Florida, ²USDA

1:15 p.m. PSXV-6 **Influence of GDF5 Gene Polymorphism on the Concentration of Essential and Toxic Elements in Blood Serum and Milk Productivity of the Holstein Cows**
Isidora Zubac¹, Irina Sycheva², Alexey Komarchev³, Petr Nikitin⁴, Aleksandr Orishev⁵, Irina Vasilyeva⁶, Vera Krasavina²

¹University of Belgrade, ²Russian State Agrarian University –Moscow Timiryazev Agricultural Academy, ³Federal Scientific Center «All-Russian Research and Technological Institute of Poultry» of Russian Academy of Sciences, ⁴Department of Data Analysis and Machine Learning, Financial University under the Government of the Russian Federation, ⁵Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, ⁶Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University)

1:15 p.m. PSXV-7 **Nutrient Digestibility Evaluation in Finisher Pigs from Diverse Feed Efficiency Groups**

Laura Beens¹, Gustavo A. Mejicanos¹, Ethendhar Rajendiran¹, chengbo Yang², Charles Martin Nyachoti³, Huaigang lei⁴, Egbert Knol⁵, Rob Bergsma⁵, Argenis Rodas-Gonzalez³
¹University of Manitoba, Department of Animal Science, ²Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada, ³University of Manitoba, ⁴Topigs Norsvin Canada Inc., ⁵Topigs Norsvin Research Centre

1:15 p.m. PSXV-10 **Poor Maternal Nutrition Impacts Mrna Expression of Epigenetic Factors in Ram Offspring Liver**

Madelyn A. Dupre¹, Nicole M. Tillquist¹, Amanda S. Reiter¹, Mia Y. Kawaida¹, Brandon I. Smith¹, Sarah A. Reed², Steven A. Zinn², Kristen E. Govoni²
¹University of Connecticut, ²Dept. of Animal Science, University of Connecticut

1:15 p.m. PSXV-13 **Relationship Between Velocity and Temporal Variables in the Akhal-teke Glide**

Molly Nicodemus¹, Molly Friend², Jeannette Beranger³
¹Animal & Dairy Sciences, Mississippi State University, ²Mississippi State University, ³The Livestock Conservancy

1:15 p.m. PSXV-21 **Transcriptome analysis of chicken reveals the impact of Herpesvirus of Turkeys on bursa RNA expression in Marek's disease virus infections**

Junjian Wang¹, Julie Hicks¹, Jicai Jiang¹, Hsiao-Ching Liu¹
¹North Carolina State University

CSAS Symposium II: Bison Ecological Recovery and Production Perspectives

Chair: Oscar Lopez-Campos, Agriculture and Agri Food Canada, Science and Technology Branch; Carl Julien, CRSAD
1:30 PM - 5:00 PM
206 A/B

1:30 p.m. **CSAS Symposium II Introduction**

1:35 p.m. 174 **All things Bison: The Known and the Unknown**

Jayson Galbraith¹
¹Alberta Agriculture and Irrigation

2:10 p.m. 175 **Persistence and Serendipity: The Ecological Recovery of North American Bison Populations**

Todd K. Shury¹

¹Parks Canada Agency

2:45 p.m. 171 **Sex-sorted Sperm Used for Fixed-time Artificial Insemination and in vitro Fertilization in Wood Bison**

Eric M. Zwiefelhofer¹, Gregg P. Adams², Miranda L. Zwiefelhofer², Paula Mackie³, Gabriela F. Mastromonaco³

¹Toronto Zoo and University of Saskatchewan, ²University of Saskatchewan, ³Toronto Zoo

3:20 p.m. **CSAS Symposium II Break**

3:35 p.m. 173 **The North American Bison Management System: Reintroduction of a Species with Ecological, Economic, and Cultural Roles in a Changing Climate**

Jeff M. Martin¹, Kristi M. Cammack¹

¹South Dakota State University

4:10 p.m. 172 **Developing Genomic Tools for Bison**

Michelle Miller¹

¹Neogen Canada

4:45 p.m. **CSAS Symposium II Q&A**

Forages and Pastures Symposium II: Fiber Utilization and Cell Wall Constituents

Chair: Samuel Wyffels, Northern Agriculture Research Center

1:30 PM - 5:00 PM

205 A/B

1:30 p.m. **Forages and Pastures Symposium II Introduction**

1:35 p.m. 200 **Forage Cell Wall Organization, Complexes, and Components**

George C. Fahey¹

¹University of Illinois at Urbana-Champaign

2:20 p.m. 202 **An Update on in Vitro and in Situ Experimental Techniques for Approximation of Ruminant Fiber Degradation**

Jamie L. Foster¹

¹Texas A&M AgriLife Research

3:05 p.m. **Forages and Pastures Symposium II Break**

3:15 p.m. 201 **Forage Biodegradation: Advances in Ruminant Microbial Ecology**

Todd R. Callaway¹, Jefferson M. Lourenco¹, Robert Lawton Stewart¹, W. Brandon Smith²

¹University of Georgia, ²Auburn University

4:00 p.m. 199 **Revisiting Mechanisms, Methods, and Models for Altering Cell Wall Utilization for Ruminants**

Luis O. Tedeschi ¹, Ricardo A. Vieira ²

¹Texas A&M University, ²Laboratório de Zootecnia, Universidade Estadual do Norte Fluminense (UENF)

4:45 p.m. **Forages and Pastures Symposium II Q&A**

Extension Education

Chair: James Oltjen, University of California, Davis

2:00 PM - 3:05 PM

207 A/B

2:00 p.m. **Extension Education Introduction**

2:05 p.m. 176 **Costs for Supplementing Small Ruminants Under the Various Grazing-based Production Systems**

Uma Karki ¹, Bhuwan Shrestha ¹, Santoshi Chaudhary ¹, Anand Tiwari ¹, Lila B. Karki ²

¹Tuskegee University, ²University of Maryland Eastern Shore

2:20 p.m. 178 **Impacts of an Online Extension Initiative on Adoption of Research-based Principles by Beef Stakeholders**

Alice P. Brandão ¹, Cliff C. Lamb ¹, Reinaldo Cooke ², Ky G. Pohler ¹, Kathrin Dunlap ¹

¹Texas A&M University, ²Department of Animal Science, TAMU

2:35 p.m. 177 **Peer Community in Animal Science: A Free Publication Model for Transparent and Open Science**

Rafael Muñoz-Tamayo ¹, Mohammed Gagaoua ², Florence Gondret ³, Matthias Hess ⁴, Diego P. Morgavi ⁵, I. Anna S. Olsson ⁶, Masoomah Taghipoor ¹, Luis O. Tedeschi ⁷, Isabelle Veissier ⁵

¹Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants, 75005, Paris, France, ²Teagasc Food Research Centre, Ashtown, D15 KN3K Dublin, Ireland, ³PEGASE, INRAE, Institut Agro, 35590 Saint-Gilles, France, ⁴Department of Animal Science, University of California, 2251 Meyer Hall, Davis, CA 95616, USA., ⁵Université Clermont Auvergne, INRAE, VetAgro Sup, UMR Herbivores, F-63122 Saint-Genes-Champanelle, France, ⁶i3S - Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Rua Alfredo Allen 208, 4200-180 Porto, Portugal, ⁷Texas A&M University

2:50 p.m. 179 **Today's Beef Quality Assurance Program: Rancher Involvement and the Future of Developing Sustainability Programs**

Sarah C. Klopatek ¹, Allison Cantwell ², Leslie Roche ³, Kim R. Stackhouse-Lawson ⁴, James W. Oltjen ³

¹JBS, ²Institute for Research in the Social Sciences, Colorado State University, Fort Collins, CO, ³University of California, Davis, ⁴AgNext, Colorado State University

**Companion Animal Symposium II:
Nutrition and Immunology Applied to Companion Animals**

Chair: Amanda Dainton, Freshpet
2:00 PM - 3:30 PM
301 C/D

2:00 p.m. **Companion Animal Symposium II: Nutrition and Immunology Applied to Companion Animals Introduction**

2:15 p.m. 133 **Overview of the Immune System**

Andrew J. Steelman ¹

¹University of Illinois Departments of Animal Sciences and Nutritional Sciences

2:45 p.m. 134 **Ingredients that Modify the Immune System**

Elizabeth A. Bobeck ¹

¹Iowa State University

3:15 p.m. **Companion Animal Symposium II: Nutrition and Immunology Applied to Companion Animals Discussion**

Animal Health I

Chair: Jay Johnson, Huvepharma
2:00 PM - 5:15 PM
302A

2:00 p.m. **Animal Health I Introduction**

2:05 p.m. 53 **The Role of Veterinary Services on Nutrition Schemes, Management, and Health Practices for Sheep and Goats in Rural Ngaka Modiri Molema District Municipality, North West Province of South Africa**

Baitsholets G. Mokolopi ¹, James W. Oguttu ¹

¹University of South Africa

2:20 p.m. 52 **Can Annual Lespedeza (Kummerowia Stipulacea) Be Used as an Anti-parasitic Hay for Goats?**

Jayla Hicks ¹, Brianna Holmes ², Gregory Dykes ¹, Nallely Mendez ¹, Ayesha Neha ², Arshad Shaik ², Sai Chandan Chelkapally ², Davia Brown ¹, Jeslyn Crumpler ¹, Niki C. Whitley ², Andres A. Pech-Cervantes ², Thomas H. Terrill ²

¹Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,, ²Fort Valley State University

2:35 p.m. 47 **Effect of Summer Heat Stress on Internal Parasite Populations in Lebanese Baladi Goats**

Samer Murr ¹, Elham Hajj ¹, Khaled Houchaymi ², Joan M. Burke ³, Brenda M. Murdoch ⁴, Pauline Y. Aad ⁵

¹Faculty of Agriculture and Veterinary Sciences, Lebanese University, ²Lebanese Agricultural Research Institute, ³USDA ARS Dale Bumpers Small Farms Research Center, ⁴University of Idaho, ⁵Notre Dame University

2:50 p.m. 51 **Determining the Best Indicators for Targeted Selective Treatment Against Gastrointestinal Nematodes in Sheep and Goats in Mississippi**

Lindsey N. Dearborn¹, Leyla Rios², Felipe Torres-Acosta³

¹Animal and Dairy Sciences Department, Mississippi State University, ²Mississippi State University, ³Faculty of Veterinary Medicine at the Universidad Autonoma de Yucatan (UADY)

3:05 p.m. 49 **Effects of Dietary Supplementation with Lespedeza on the Semen Quality and Fertility of Male Goats**

Rania Heikal¹, Jayla Hicks², Bryanna holmes¹, Jalani Brown¹, Gregory Dykes², Lauren Wartley², Nallely Mendez², Ayesha Neha¹, Arshad Shaik¹, Sai Chandan Chelkapally¹, Davia Brown², Jeslyn Crumpler², Niki C. Whitley¹, Andres A. Pech-Cervantes¹, Tiffany Reese², Moges Woldemeskel³, Thomas H. Terrill¹, Adel R. R. Moawad¹

¹Fort Valley State University, ²Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University, ³Department of Pathology, Tifton Veterinary Diagnostic & Investigational Laboratory, The University of Georgia

3:20 p.m. 50 **Influence of Farrowing Assistance Intervals on Piglet, Sows and Workers**

Heather N. Vanheeswijk¹, Angela R. Green-Miller²

¹University of Illinois Urbana-Champaign, ²University of Illinois

3:35 p.m. **Animal Health I Break**

3:45 p.m. 46 **Sulfonation-based Decontamination Alters Biotransformation and Excretion of Deoxynivalenol in Nursery Pigs**

Chi Chen¹, Dan Yao¹, Molly L. McGhee², Richard Faris², Don W. Giesting²

¹University of Minnesota, ²Cargill Animal Nutrition

4:00 p.m. 45 **Vaccine Protocol Influences Immune Phenotype of Weaned Beef Calves**

Cassidy C. Reddout¹, Janeen L. Salak-Johnson², Paul A. Beck², Frank White³

¹Oklahoma State University- Dept. of Animal and Food Sciences, ²Oklahoma State University, ³Elanco

4:15 p.m. 44 **Evaluation of Prenatal Transportation Stress on Humoral and Cell-mediated Immunity After Modified-live Viral BVDV Vaccination in Brahman Calves**

Audrey L. Earnhardt-San¹, Catherine L. Wellman², Shollie M. Falkenberg³, Charles R. Long⁴, Ronald D. Randel⁵, Thomas H. Welsh¹

¹Texas A&M University and AgriLife Research, Department of Animal Science, ²Texas A&M AgriLife Research, ³Auburn University, ⁴School of Veterinary Medicine and Biomedical Sciences, Texas A&M University, ⁵Texas A&M AgriLife Research, Overton, TX

4:30 p.m. 48 **Supplementation of Condensed Tannins to Beef Heifers During Peripartum Period Affects Coccidia Parasite Load in Dam and Offspring**

Stefania Pancini¹, Nicholas W. Dias¹, Guillermo Goncherenko², Hannah Varnell³, Vitor R.G R. G. Mercadante¹

¹Virginia Tech, ²Department of Animal and Poultry Sciences, Virginia Tech, ³Large Animal Clinical Sciences, Virginia Tech

4:45 p.m. 43 **Establishing Pregnancy Following Artificial Insemination (AI) of Angus Cows: Experience from Fort Valley State University (FVSU)**

Adel R. R. Moawad ¹, Niki C. Whitley ¹, Noble C. Ralph ²

¹Fort Valley State University, ²Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,

5:00 p.m. 56 **Diet Supplementation with *Saccharomyces Cerevisiae* Boulardii Improves Growth, Health, and Fecal Microbiota of Pre-weaned Dairy Calves**

Clothilde Villot ¹, Lysiane Dunière ¹, Marine Gauthier ², Eric Chevaux ¹, Edyta Kowalczyk ³

¹Lallemand SAS, ²Lallemand, ³University of Lublin

Poster Session XVI

3:30 PM - 4:30 PM

Exhibit Hall A

3:30 p.m. PSXVI-11 **Effects of *Yucca Schidigera* Extract and Multi-carbohydrase in Different Crude Protein Diets on Growth Performance, Nutrient Digestibility, Carcass Parameters and Noxious Gas Emission in Broilers**

Chai Bin Lim ¹, Kimoon Kim ², Olivier Munezero ¹, In Ho Kim ³

¹Department of Animal Resources Science, Dankook University, ²Chungnam National University, ³Dankook University

3:30 p.m. PSXVI-15 **Energy Concentration Prediction Models for Black Soldier Fly Larvae Using Chemical Composition**

Dong Uk Ha ¹, Kwanho Park ², Beob G. Kim ¹

¹Konkuk University, ²Rural Development Administration

3:30 p.m. PSXVI-9 **Evaluation of Dehydrated Restaurant Food Waste and Treated Rice Straw on Growing and Finishing Pigs**

Medhat A. Michael ¹

¹Egyptian Ministry of Agricultural

3:30 p.m. PSXVI-14 **Hindgut Disappearance of Phosphorus in Corn-soybean Meal-based Diets with or Without Inorganic Phosphorus Sources in Twenty-four-kg Pigs**

Jongkeon Kim ¹, Beob G. Kim ¹

¹Konkuk University

3:30 p.m. PSXVI-1 **Impact of Breed And/or Season on Effectiveness of Anthelmintic Treatment in Weaned Calves**

Chloey Guy ¹, Jaclyn N. Ketchum ², Kaitlin M. Epperson ², Lacey K. Quail ², Thomas B. Hairgrove ³, Charles R. Long ⁴, George A. Perry ⁵

¹Texas A&M AgriLife Research Center, Overton, ²Department of Animal Science, Texas A&M University, College Station, TX, ³Texas A&M AgriLife Extension, ⁴School of Veterinary Medicine and Biomedical Sciences, Texas A&M University, ⁵Texas A&M AgriLife Research, Overton, TX

3:30 p.m. PSXVI-2 **Impacts of Improvest on Primal Yields in Gilt Carcasses**

Kimberly A. Vonnahme ¹, Debbie Amodie ¹, Marnie Mellencamp ¹, Lucina Galina ¹

¹Zoetis

- 3:30 p.m. PSXVI-3 **Individual Water Use Efficiency in Beef Cattle**
 Tylor J. Yost ¹, Nathan Blake ¹, Matthew Walker ¹, Ida Holaskova ¹, Jason Hubbart ¹, Domingo Mata-Padrino ¹, Ibukun M. Ogunade ¹, Kelsie Sanders ¹, Matthew E. Wilson ¹
¹West Virginia University
- 3:30 p.m. PSXVI-10 **Influence of Carbohydrate Rich Co-products and Fiber on Growth Performance and Fat Quality in Finishing Pigs**
 Ferial A. Slim ¹, Luca Lo Verso ¹, Frédéric Guay ²
¹Laval University, ²Université Laval
- 3:30 p.m. PSXVI-12 **Marine Derived Ca-mg Complex Supplementation Enhances the Performance of Sows and Their Litters During Parity 1 to 4**
 Chai Bin Lim ¹, Kimoon Kim ², Santi Devi Upadhaya ³, Rudolf H van der Veen ⁴, In Ho Kim ⁵
¹Department of Animal Resources Science, Dankook University, ²Chungnam National University, ³Dankook University, Cheonan, South Korea, ⁴Celtic Sea Minerals, Strand Farm, ⁵Dankook University
- 3:30 p.m. PSXVI-8 **Marine-derived Ca-mg Complex Influences Serum Metabolites, Colostrum Nutrient Profile, Lipid and Glucose Metabolism-associated Genes Expression, and Stress Hormones in Sows over a Four-parity Period**
 Kimoon Kim ¹, Chai Bin Lim ², Santi Devi Upadhaya ³, Rudolf H van der Veen ⁴, In Ho Kim ⁵
¹Chungnam National University, ²Department of Animal Resources Science, Dankook University, ³Dankook University, Cheonan, South Korea, ⁴Celtic Sea Minerals, Strand Farm, ⁵Dankook University
- 3:30 p.m. PSXVI-4 **Modelling Response to Heat Stress in a Northeastern USA Dairy Facility Using Robotic Voluntary Milking System Data**
 Jillian Derjue ¹, Breno O. Fragomeni ²
¹UConn, ²University of Connecticut
- 3:30 p.m. PSXVI-5 **Rumen Parameters and Microbial Population Changes in Fattening Holstein Heifers Fed with Nitrate-contaminated Water**
 Miriam Guivernau ¹, Lourdes Llonch ², Sonia Marti ², Marc Viñas ¹, Maria Devant ²
¹IRTA-Sustainability in Biosystems, ²IRTA, Ruminant Production
- 3:30 p.m. PSXVI-6 **Ruminal Dry Matter Disappearance, Methane Production and Fermentation Parameters as Affected by Fat and Protein Concentration in By-product Supplemented Grass Hay-based Diets**
 Paul Tamayao ¹, Kim H. Ominski ¹, Sidonie P. Robinson ¹, Karin Wittenberg ¹, Gary Crow ¹, Emma J. J. McGeough ¹
¹University of Manitoba
- 3:30 p.m. PSXVI-13 **Standardized Ileal Digestibility of Amino Acids in Fish Meal, Defatted Black Soldier Fly Larva Meal and Adult Black Soldier Fly Fed to Pigs**
 Jongkeon Kim ¹, Sang Yun Ji ², Beob G. Kim ¹
¹Konkuk University, ²Rural Development Administration
- 3:30 p.m. PSXVI-16 **Standardized Total Tract Digestibility of Phosphorus in Black Soldier Fly Larvae Fed to Pigs**
 Dong Uk Ha ¹, Kwanho Park ², Beob G. Kim ¹
¹Konkuk University, ²Rural Development Administration

3:30 p.m. PSXVI-7 **Sustainability Index Approach of the Brazilian Pampa Biome**
LUIZ QUEIROZ FILHO ¹, Claus Köbrich Grüebe ², JULIO BARCELLOS ³
¹NESPro-UFRGS, ²Faculty of Veterinary and Animal Sciences-UC, ³Dep. Animal Production -
NESPro-UFRGS

Thursday, June 30, 2022

Horse Species Symposium:
The Mechanisms for Maternal Recognition of Pregnancy in Horses
Chair: Sarah Reed, Dept. of Animal Science, University of Connecticut
8:30 AM - 10:15 AM
206 A/B

8:30 a.m. **Horse Species Symposium Introduction**

8:35 a.m. 222 **Maternal Recognition of Pregnancy in the Mare: What is Needed to Make Progress in Our Understanding of This Complex Issue**
Claudia Klein ¹
¹Friedrich-Loeffler-Institute

9:15 a.m. 221 **Putative Gene Regulators in the Equine Endometrium, Corpus Luteum and Embryo During Early Pregnancy in the Horse**
Mariana Diel de Amorim ¹
¹Cornell University

9:55 a.m. **Horse Species Symposium Discussion**

Animal Breeding and Genetics Symposium III: Selection Signatures in Livestock Genome
Chair: Breno Fragomeni, University of Connecticut
8:30 AM - 11:00 AM
301 A/B

8:30 a.m. **Animal Breeding and Genetics Symposium III Introduction**

8:35 a.m. 30 **Origins, Timing and Introgression of Domestic Geese Revealed by Whole Genome Data**
Lujiang Qu ¹, Junhui Wen ¹
¹College of Animal Science and Technology, China Agricultural University

9:05 a.m. 29 **Mapping Recent and Ongoing Polygenic Selection in Beef Cattle Populations**
Troy N. Rowan ¹, Robert Schnabel ², Jared E. Decker ²
¹University of Tennessee - Knoxville, ²University of Missouri

9:35 a.m. **Animal Breeding and Genetics Symposium III Break**

9:45 a.m. 27 **Evaluating the Functional Differences at Genome, Transcriptome and Methylome Level Between ARS-UCD1.2 and UMD 3.1 Bovine Reference Genomes**

Angela Cánovas ¹, Pablo A.S Fonseca ², Stephanie D. McKay ³, Juan F. F. Medrano ⁴

¹Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada, ²Department of Animal Biosciences, Centre for Genetic Improvement of Livestock, University of Guelph, N1G 2W1, Guelph, Ontario, Canada.,

³Department of Animal and Veterinary Sciences, University of Vermont, United States of America., ⁴Department of Animal Science, University of California-Davis, 95616, Davis, California, United States of America.

10:15 a.m. 28 **Problematizing Selection Mapping from an Animal Science Perspective**

Martin Johnsson ¹

¹Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences

10:45 a.m. **Animal Breeding and Genetics Symposium III Q&A**

Animal Health II

Chair: Jerica Hall, Texas Tech University

8:30 AM - 11:00 AM

301 C/D

8:30 a.m. **Animal Health II Introduction**

8:35 a.m. 7 **Characterization of Feeder Cattle Behavior Using an Integrated Machine Vision Learning System**

Jesse Robbins ¹, Polina Demochkina ², Josh Szasz ³, Tony C. Bryant ³, Ross Mauck ¹, Tim Robertson ¹, Andrew McKenzie ¹

¹Precision Livestock Technologies, ²HSE University, ³Five Rivers Cattle Feeding

8:50 a.m. 54 **The Effect of Supplementing CLOSTAT 500 (Bacillus Subtilis PB6) to Yearling Steers in a Commercial Feedyard on Health, Salmonella Spp. Prevalence, Feedlot Performance and Carcass Characteristics**

Sara J. Trojan ¹, Paul R. Broadway ², Nicole C. Burdick Sanchez ², Jeffery A. Carroll ², Kristin E. Hales ³, Alyssa B. Word ⁴, Kendall J. Karr ⁴, Ben P. Holland ⁵, Guy Ellis ⁴, Casey Maxwell ⁵, Landon Canterbury ⁶, Tyler Leonhard ⁶, Doug LaFleur ⁷, Jerilyn Hergenreder ⁷

¹Peak Beef Cattle Nutrition and Management Consulting LLC, ²USDA-ARS, Livestock Issues Research Unit, ³Texas Tech University, ⁴Cactus Research, ⁵Cactus Feeders, ⁶Kemin Industries, ⁷Kemin Industries Inc.

9:05 a.m. 57 **Evaluation of Virginiamycin Inclusion in the Diets of Feedlot Steers: Interplay Between Rumen Ph and Liver Health**

Madeline E. Rivera ¹, Luiz Fernando Dias Batista ¹, Luis O. Tedeschi ¹

¹Texas A&M University

9:20 a.m. 63 **Impact of Supplementing Rumen-protected Methionine During the Periconceptual Period in Fetal and Postnatal Growth in Beef Cattle**

Daniella C. Heredia¹, Federico Tarnonsky¹, Oscar A. A. Ojeda¹, Camila Santos Rojas¹, Ignacio Fernandez Marenchino¹, Daniel D. Luchini², Peter J. Hansen¹, Nicolas DiLorenzo³, Angela M. Gonella¹

¹University of Florida, ²Adisseo, ³Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

9:35 a.m. 59 **Effects of Feeding Nutragen on Clinical Signs and Leukocytes in Calves Following Natural Exposure to Bovine Viral Diarrhea Virus and Subsequent Mannheimia Haemolytica Infection**

Jazmin A. Markey¹, Wendy Gong¹, Kasi N. Schneid¹, Avianna A. Liuzzo¹, Garrett Farran¹, Jennifer Rudd², Tim Snider², Marie Montelongo², Brooke Humphrey³, James D. Chapman⁴, Evin D. Sharman⁵, Miriam Garcia⁵, Ryan R. Reuter¹, Paul A. Beck¹, Andrew P. Foote¹, Kelsey Bruno¹, Blake K. Wilson¹

¹Oklahoma State University, ²Oklahoma State University College of Veterinary Medicine, ³Phibro Animal Health Corporations, ⁴Phibro Animal Health Corporation, ⁵Phibro Animal Health

9:50 a.m. **Animal Health II Break**

10:00 a.m. 60 **Occurrence of Mycotoxins in US Corn Gluten Products and Wheat Middlings**

Paige N. Gott¹, Erin F. Schwandt¹, Lan Zheng¹, Chasity M. Pender¹, Ursula Hofstetter-Schähs¹, April W. Levy¹

¹DSM Nutritional Products

10:15 a.m. 61 **Mycotoxin Trends in US Corn Grain and Corn Distiller's Dried Grains with Solubles**

Paige N. Gott¹, Lan Zheng¹, Erin F. Schwandt¹, Chasity M. Pender¹, Ursula Hofstetter-Schähs¹, April W. Levy¹

¹DSM Nutritional Products

10:30 a.m. 62 **Impact of Feeding Male Goats with L-carnitine on Viability of Their Semen Stored at 4 °C for 72 Hours**

Bryanna holmes¹, Jalani Brown¹, Lazar Hunter², Joshua Woodard¹, Allana Johnson², Miller Schauston¹, Brou Kouakou¹, Adel R. R. Moawad¹

¹Fort Valley State University, ²Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,

10:45 a.m. 64 **Effects of L-carnitine Dietary Supplementation on the Quality of Buck Semen Collected During Non-breeding Season**

Jalani Brown¹, Bryanna holmes¹, Lazar Hunter², Joshua Woodard¹, Allana Johnson², Ma Xiaoling², Miller Schauston¹, Brou Kouakou¹, Adel R. R. Moawad¹

¹Fort Valley State University, ²Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,

Teaching/Undergraduate and Graduate Education

Chair: Amy Abrams, Berry College

8:30 AM - 11:00 AM

207 A/B

8:30 a.m. **Teaching/Undergraduate and Graduate Education Introduction**

8:35 a.m. 381 **Awardee Talk: Increasing the Sustainability of Beef Cattle Production Through Internationalization**

Luis O. Tedeschi¹

¹Texas A&M University

9:05 a.m. 382 **Essential Skills for Future Equine Sports Rehabilitation Careers**

Sarah A. Reed¹

¹Dept. of Animal Science, University of Connecticut

9:20 a.m. 385 **Investigating Inclusiveness Within the Department of Animal Science**

Kelsi Carlson¹, Jennifer M. Bundy¹, Anna K. Johnson¹, Scott Smalley¹, Michael J. Martin¹

¹Iowa State University

9:35 a.m. 386 **Reflection on Reflections: How Students Experience Reflection Assignments?**

Sushil Paudyal¹, William Walker¹, Kao Sean¹, Jeffrey Wiegert¹, Kathrin Dunlap¹, Jonan Donaldson¹

¹Texas A&M University

9:50 a.m. **Teaching/Undergraduate and Graduate Education Break**

10:00 a.m. 380 **Awardee Talk: Deer Eat Birds and Other Revelations: Teaching a Changing Demographic of Animal Science Student**

Jason M. Scheffler¹

¹University of Florida

10:30 a.m. 383 **Scientific Training Programs for Undergraduate and Graduate Students: applied Animal and Food Science**

Charles W. Starkey¹, Jessica D. Starkey²

¹Auburn University, ²Department of Poultry Science, Auburn University

10:45 a.m. 384 **Scientific Training Programs for Undergraduate and Graduate Students: Exposure to Fundamental Science**

Jessica D. Starkey¹, Charles W. Starkey²

¹Department of Poultry Science, Auburn University, ²Auburn University

Production, Management and Environment

Chair: Obioha Durunna, Department of Applied Research, Lakeland College Vermilion

8:30 AM - 11:30 AM

209 A/B

8:30 a.m. Production, Management and Environment Introduction

8:35 a.m. 305 Awardee Talk: Application of On-Animal Sensors and Precision Livestock Management on Extensive Cattle and Sheep Ranches

Derek W. Bailey¹, Mark G. Trotter², Colin T. Tobin³, Kelsey Nelson¹, Caroline Wade¹, Cory Oltjen⁴, Milton G. Thomas⁴, Jennifer A. Hernandez Gifford¹

¹New Mexico State University, ²CQUniversity, ³North Dakota State University, ⁴Colorado State University

9:05 a.m. 310 Effects of Stair Step Strategy and Immunomodulatory Feed Ingredient Supplementation on Thermoregulation, Growth, and Reproduction of Grazing Bos Indicus-influenced Beef Heifers

Vinicius de Souza Izquierdo¹, Joao Vendramini², Philippe Moriel²

¹University of Florida - Range Cattle Research & Education Center, ²University of Florida

9:20 a.m. 311 Administering a Bovine Appeasing Substance to Beef Heifers During an Estrous Synchronization Protocol and Its Impacts on Temperament and Pregnancy Rate

Nicholas W. Dias¹, Stefania Pancini¹, Guillermo Goncherenko², John Currin¹, Sherrie Clark-Deener¹, Jamie L. Stewart¹, Reinaldo Cooke³, Vitor R G. Mercadante⁴

¹Virginia Tech, ²Department of Animal and Poultry Sciences, Virginia Tech, ³Department of Animal Science, TAMU, ⁴Virginia Tech - School of Animal Sciences, Large Animal Clinical Sciences

9:35 a.m. 306 Cattle Performance and Forage Nutrients While Grazing an Integrated Crop-livestock System Compared with Grass Pasture in the Northern Great Plains

Rachael G. Christensen¹, Scott L. Kronberg¹, John R. Hendrickson¹, David W. Archer¹, Mark A. Liebig¹

¹USDA-ARS

9:50 a.m. 307 Effects of Incorporating Malted Barley in a Finishing Ration on Intake, Performance, and Enteric Methane Emission of Beef Steers

Matthew R. Beck¹, Jarret A. Proctor², Zachery A. Kasuske¹, Jason K. Smith³, Vinicius N. Gouvea⁴, Catherine Lockard⁵, Byeng Min⁶, David Brauer¹

¹USDA-ARS, ²Texas A&M University, ³Texas A&M AgriLife Extension, ⁴Texas A&M AgriLife Research, ⁵Friesen, ⁶Tuskegee University

10:05 a.m. Production, Management and Environment Break

10:15 a.m. 314 Steer Production Performance and Enteric Gas Emissions Associated with Free-choice Mineral Supplement Infused with Varying Levels of Garlic Powder

Oluwatobi Oyedeki¹, Herbert A. Lardner², Iris Cheang³, Hushton Block⁴, Obioha N. Durunna¹

¹Department of Applied Research, Lakeland College Vermilion, AB, Canada T9X 1K5,

²Department of Animal and Poultry Science, University of Saskatchewan, ³University of Saskatchewan, ⁴Agriculture and Agri-Food Canada, Lacombe, AB, Canada, T4L 1V7

10:30 a.m. 308 **Evaluation of Implants and Precision Supplementation on Growth and Muscle Accretion in Beef Steers Post Weaning**

Joshua L. Jacobs¹, Maslyn A. Greene¹, Aliute Udoka¹, Matt J. Hersom¹, John G. Andrae¹, Susan K. Duckett¹

¹Clemson University

10:45 a.m. 309 **Achieving Heavier Market Weights, with Similar Feed Efficiency, in Gilts Administered Improst**

Kimberly A. Vonnahme¹, Debbie Amodie¹, Roy Edler², Marnie Mellencamp¹, Lucina Galina¹

¹Zoetis, ²Pipestone Veterinary Services

11:00 a.m. 313 **Estimating Body Condition Score of Dairy Cows from Color Depth Images Using a Mobile Device**

Ligia Cunha Moreira¹, Tiago Bresolin¹, Joao R. R. Dorea², Guilherme J. M. Rosa²

¹Department of Animal and Dairy sciences, University of Wisconsin-Madison, ²University of Wisconsin-Madison

11:15 a.m. 312 **Characterizing Riding Tendencies of Owners, Managers, or Riders of Indoor Arena Through an Anonymous Survey**

Staci McGill¹, Morgan Hayes¹, Bob Coleman¹

¹University of Kentucky