

**ORAL PRESENTATIONS****Monday, March 11, 2024****Nonruminant Nutrition I - Breeding Herd I**

Chair: Carine M. Vier, PIC

8:00 AM - 11:15 AM

Ballroom D

8:00 a.m. 10 Effects of different feeding levels during gestation on gilt reproductive performance during the first lactationLeticia Moreira dos Santos ¹, Alex Maiorka ¹, Carine M. Vier ², Weasley A. Orlando ², Amanda P. Siqueira ³, Gefferson Silva ⁴, Ray Nascimento Gonsalves ³, Vanderlei Zappani ⁵, Evandro Cezar Beraldin ⁵, Ning Lu ², Steve Dritz ²¹UFPR, ²Genus PIC, ³Agrocere PIC, ⁴Crystal Spring, ⁵LAR Cooperativa Agroindustrial**8:15 a.m. 11 The effect of increased standardized ileal digestible lysine through increased soybean meal during late gestation on lactating sow and litter performance**Abigail K. Jenkins ¹, Jason C. Woodworth ¹, Jordan T. Gebhardt ¹, Joel M. DeRouchey ¹, Mike D. Tokach ¹, Robert D. Goodband ¹¹Kansas State University**8:30 a.m. 12 Effects of increasing SID lysine (Lys) and metabolizable energy (ME) levels of lactation diets fed to young and multiparous sows**Dustin Boler ¹, Jeremy Perez ¹, Eric Parr ¹, Michael Welch ¹, Kelsey Kyle ¹, Danielle Johnson ¹, Casey Neill ¹, Jorge Estrada ²¹Carthage Innovative Swine Solutions, ²Carthage Veterinary Service**8:45 a.m. 13 Impact of precision feeding during gestation on the productive career of sows over three reproductive parities**Béatrice Sauvé ¹, Laetitia Cloutier ², Lucie Galiot ², Frédéric Guay ¹, Gabrielle Dumas ², Charlotte Gaillard ³, Jean-Yves DOURMAD ⁴, Aude Simongiovanni ⁵, Patrick Gagnon ², Marie-Pierre Létourneau-Montminy ¹¹Laval University, ²Centre de développement du porc du Québec, ³INRAE, Institut Agro, ⁴INRAE UMR PEGASE, ⁵METEX ANIMAL NUTRITION**9:00 a.m. 14 Effects of increasing daily dietary standardized ileal digestible lysine intake of gilts and sows during day 35-to-112 of gestation on reproductive performance**Carine M. Vier ¹, Weasley A. Orlando ¹, Julia A. Calderon Diaz ¹, Jorge Estrada ², Jordi Camp ¹, Wayne R. Cast ¹, Steve Dritz ¹, Luis E. Zaragoza ¹, Ning Lu ¹, Beau Peterson ³, Dustin Boler ⁴, Eric Parr ⁴, Ron Aldwin S. Navales ⁵¹Genus PIC, ²Carthage Veterinary Service, ³Carthage Veterinary Services, ⁴Carthage Innovative Swine Solutions, ⁵Kansas State University

9:15 a.m. 15 **Effects of post-MSC DDGS inclusion in gestation diets compared to other fiber sources on in vitro gas and volatile fatty acid production**

Garrin Shipman¹, Jorge Y. Perez-Palencia¹, Jinsu Hong², Kevin J. Herrick³, Melissa L. Jolly-Breithaupt³, Crystal L. Levesque¹

¹South Dakota State University, ²University of Minnesota, ³POET Bioproducts

9:30 a.m. **Nonruminant Nutrition I - Breeding Herd I Break**

9:45 a.m. 16 **Effects of fiber supplementation during gestation on sow and piglet performance**

Carine M. Vier¹, Alexandra Möller Alves², Ines Andretta², Gabriel Martins², Jéssica Pereira², Weasley A. Orlando¹, Amanda P. Siqueira³, Vitor Hugo Moita¹

¹Genus PIC, ²UFRGS, ³Agroceres PIC

10:00 a.m. 17 **Effect of branched-chain amino acids on lactating sow and piglet performance**

Dalton C. Humphrey¹, Keith D. Haydon², Laura L. Greiner¹

¹Iowa State University, ²CJ Bio America

10:15 a.m. 19 **Evaluation of precision feeding standardized ileal digestible lysine to meet the lactating sow's requirement**

Mikayla Spinler¹, Jordan T. Gebhardt¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Robert D. Goodband¹, Hyatt Frobose², Amanda Uitermarkt², Jason C. Woodworth¹

¹Kansas State University, ²JYGA Technologies

10:30 a.m. 18 **Effect of precision feeding standardized ileal digestible lysine to lactating sows compared to conventional feeding strategies in a commercial farm**

Mikayla Spinler¹, Jordan T. Gebhardt¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Robert D. Goodband¹, Hyatt Frobose², Amanda Uitermarkt², Vitor Hugo Moita³, Jason C. Woodworth¹

¹Kansas State University, ²JYGA Technologies, ³Genus PIC

10:45 a.m. 20 **Effects of a stabilized fish oil on boar semen quality when fed during summer months**

Bradley A. Didion¹, Jamie Hundley², Michael Kleve-Feld³, Tom Gall⁴, Carine M. Vier¹, Amanda Middleton¹, Weasley A. Orlando¹, Ning Lu¹, Malcom Ballard⁵, Wayne R. Cast¹, Mike Parsley⁶, Steve Dritz¹, Kent Burgess⁵

¹Genus PIC, ²Pig Improvement Company Inc., ³PIC North America, ⁴Feedworks USA Research Consultant, ⁵The Ballard Group, ⁶Feedworks USA

11:00 a.m. 22 **Feeding the early gestating gilt during heat stress: implications towards fetal viability, growth, and development**

MaryKate H. Byrd¹, Kara R. Stewart¹, J. Alex A. Pasternak¹, Jay S. Johnson²

¹Purdue University, ²USDA-ARS Livestock Behavior Research Unit

Poster Session I - Sponsored by DNA Genetics

8:15 AM - 9:00 AM

Grand Terrace

8:15 a.m. PS-1 **An evaluation of sodium salicylate in the periparturient management of the sow**

Lauren Olson ¹, Eric Weaver ¹

¹South Dakota State University

8:15 a.m. PSI-10 **Combination of probiotic *Bacillus licheniformis* and *Bacillus coagulans* in sow diets improves litter quality and piglet performance**

Patricia Alvarenga ¹, Alexandra Schlagheck ², Lydia Zeibich ², Sarah Asmussen ³

¹Biochem Brasil Nutricao Animal Ltda, ²Biochem Zusatzstoffe Handels- und Produktionsges mbH, ³Livestock feed tests Denmark ApS

8:15 a.m. PSI-2 **Daily thermoregulatory performance patterns of Duroc boars with or without electronically controlled floor cooling pads during the peak summer heat stress period**

Daphne Licuan ¹, Kara R. Stewart ¹, Jamie Hundley ², RJ Nepomuceno ³, Matt Robins ³, Randolph Crasto ³, Bradley A. Didion ⁴, Michael Kleve-Feld ⁵, Jung Y. Sung ¹, Allan P. Schinckel ¹

¹Purdue University, ²Pig Improvement Company Inc., ³Innovative Heating Technology, ⁴Genus PIC, ⁵PIC North America

8:15 a.m. PSI-11 **Determination of standardized total tract phosphorus digestibility in expeller-pressed Canadian prairie grown soybean meal fed to growing pigs**

Shiven Patel ¹, Jinyoung Lee ¹, Neijat Mohamed ¹, Chengbo Yang ¹, James House ¹, Rob Patterson ², C. Martin Nyachoti ¹

¹University of Manitoba, ²CBS Bio Platforms Inc.

8:15 a.m. PSI-12 **Dietary isoacids modulate nutrient digestibility and fermentation products in ileal digesta and feces of growing pigs fed corn-soybean meal diets**

Angie P. Benavides Infante ¹, Jorge Y. Perez-Palencia ¹, Crystal L. Levesque ¹, Lucas Rodrigues ², Mike Socha ², Wesley Schweer ²

¹South Dakota State University, ²Zinpro Corporation

8:15 a.m. PSI-13 **Digestible and metabolizable energy concentrations in soybean meal, fermented soybean meal, and soy protein concentrate fed to nursery pigs**

Yoon Soo Song ¹, Beob Gyun Kim ¹

¹Konkuk University

8:15 a.m. PSI-14 **Effect of dietary xylanase supplementation on growth performance, nutrient digestibility, and digesta viscosity of weaned pigs fed wheat-soybean meal-based diets**

Sydney Sheffield ¹, Keith D. Haydon ², Crystal L. Levesque ¹, Jorge Y. Perez-Palencia ¹

¹South Dakota State University, ²CJ Bio America

8:15 a.m. PSI-3 **Effect of feed and water consumption patterns during the lactation period on wean-to-estrus interval in weaned sows**

Magdiel Lopez Soriano ¹

¹University of Missouri–Columbia Swine Extension

8:15 a.m. PSI-15 **Effect of feeding intact protein from soybean meal instead of crystalline amino acids on energy and nitrogen balance by growing pigs**

Minoy Cristobal ¹, Su A Lee ¹, Leidy J. Torres-Mendoza ¹, Andrea P. Mallea ¹, Carl M. Parsons ², Hans H. Stein ¹

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

8:15 a.m. PSI-16 **Effect of HiPhorius phytase on finishing pig growth performance and bone mineralization with the use of two diet formulation strategies**

Macie E. Reeb ¹, Macie E. Reeb ¹, Jason C. Woodworth ², Joel M. DeRouchey ², Mike D. Tokach ², Robert D. Goodband ², Jordan T. Gebhardt ², Jon R. Bergstrom ³

¹AMVC, ²Kansas State University, ³dsm-firmenich

8:15 a.m. PSI-17 **Effect of timing of high dietary zinc supplementation on the microbiome of gestating sows and their piglets**

Kelsey L. Hammers ¹, Pedro E. Urriola ², Mark Schwartz ³, Moon-Suhn Ryu ⁴, Andres Gomez ¹, Noor Huma ¹, Lee J. Johnston ⁵

¹University of Minnesota, ²University of Minnesota College of Food, Agricultural and Natural Resource Sciences, ³Schwartz Farms, ⁴Yonsei University, ⁵West Central Research and Outreach Center, University of Minnesota

8:15 a.m. PSI-18 **Effects of heat treatment and multi-carbohydrase supplementation on the digestibility of phosphorus in field peas fed to growing pigs**

Jinyoung Lee ¹, Rob Patterson ², C. Martin Nyachoti ¹

¹University of Manitoba, ²CBS Bio Platforms Inc.

8:15 a.m. PSI-4 **Evaluation of chemical mitigants when soybean meal was inoculated with porcine epidemic diarrhea virus, porcine reproductive and respiratory virus, and Seneca Valley virus 1**

Olivia Harrison ¹, Jianfa Bai ¹, Martee Larson ¹, Roman Pogranichniy ¹, Francisco Domingues ², Nicole Holcombe ², Othmar Lopez ², Cassandra K. Jones ¹

¹Kansas State University, ²Anitox Corporation

8:15 a.m. PSI-5 **Evaluation of EhV (surrogate for African swine fever virus) inactivation in corn- and soybean-based feed ingredients and diets at various times and temperatures during storage**

Christian Ramirez ¹, Declan Schroeder ¹, Gerald C. Shurson ¹, Pedro E. Urriola ²

¹University of Minnesota, ²University of Minnesota College of Food, Agricultural and Natural Resource Sciences

8:15 a.m. PSI-6 **Growth performance of weaned pigs fed an activated zinc oxide to replace pharmacological content of dietary zinc oxide**

Christian Ramirez ¹, Charlotte Heyer ², Daniel Berghaus ³, Hayford Manu ¹, Pierre Frumholtz ², Pedro E. Urriola ⁴

¹University of Minnesota, ²Provita Supplements Inc., ³ISF GmbH, ⁴University of Minnesota College of Food, Agricultural and Natural Resource Sciences

8:15 a.m. PSI-19 **Growth performance of weaned pigs fed Jerusalem Artichoke tubers**

Natalie A. Erker ¹, Talia K. Everding ¹, Alison C. Neujahr ¹, Duncan B. Paczosa ², Phillip S. Miller ¹, Thomas E. Burkey ¹

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

8:15 a.m. PSI-7 **Hourly flushing rates and temperature trends for electronically controlled grouped floor cooling pads trends during the summer heat stress in a boar stud**

Daphne Licuan ¹, Kara R. Stewart ¹, Jamie Hundley ², RJ Nepomuceno ³, Matt Robins ³, Randolph Crasto ³, Bradley A. Didion ⁴, Michael Kleve-Feld ⁵, Jung Y. Sung ¹, Allan P. Schinckel ¹

¹Purdue University, ²Pig Improvement Company Inc., ³Innovative Heating Technology, ⁴Genus PIC, ⁵PIC North America

8:15 a.m. PSI-8 **Impact of feeding level on boars from selection to entering the boar stud on trainability and growth measurements**

Taw Scaff ¹, Alicia N. Denton ¹, Ally ford ¹, Emma Zaicow ¹, Brian T. Richert ¹, Kara R. Stewart ¹

¹Purdue University

8:15 a.m. PSI-20 **Isobutyrate supplementation improved energy and nitrogen digestibility in prepubertal gilts fed a high insoluble, but not soluble, fiber diet**

Wesley Schweer ¹, Lucas Rodrigues ¹, Alyssa S. Cornelison ¹, Mike Socha ¹, Brian J. Kerr ²

¹Zinpro Corporation, ²USDA

8:15 a.m. PSI-21 **Optimizing sample size for accurate measurements and prediction equations for intestinal morphology in broiler chickens**

Emmanuel O. Alagbe ¹, Jung Y. Sung ¹, Kylee Lindsey ², J. Alex A. Pasternak ¹, Olayiwola Adeola ¹

¹Purdue University, ²Michigan State University

8:15 a.m. PSI-9 **Relationship of body condition measures and boar reproductive performance**

Hailey M. Hedrick ¹, Caleb J. Grohmann ², Amanda Minton ³, Timothy J. Safranski ¹

¹University of Missouri, ²University of Missouri–Columbia, ³AcuFast Genetics

Nonruminant Nutrition II - Grow-Finish I
Chair: Andres Tolosa, Kansas State University
8:30 AM - 11:00 AM
Hall of Ideas F/I

8:30 a.m. 23 **The effects of dietary net energy level on grow-finish performance and carcass characteristics of intact male market pigs managed with Improvest®**
Benjamin M. Bohrer ¹, Yifei Wang ¹, Blaine Hansen ², Steve Pollmann ³, Jose Landero ⁴, Malachy Young ⁴

¹The Ohio State University, ²BCH Consulting LLC, ³DSP Consulting LLC, ⁴Gowans Feed Consulting

8:45 a.m. 24 **Effects of reducing dietary net energy on growth performance and carcass characteristics of grow-finish pigs**

Rafe Q. Royall ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹, Joel M. DeRouchey ¹, Robert D. Goodband ¹, Jordan T. Gebhardt ¹, Carine M. Vier ², Matthew Spindler ², Weasley A. Orlando ², Luis E. Zaragoza ², Ning Lu ², Wayne R. Cast ², Danielle Wilson-Wells ², Steve Dritz ², Jordi Camp ², Julia Holen ³, Alyssa Betlach ³

¹Kansas State University, ²Genus PIC, ³Swine Vet Center

9:00 a.m. 25 **Effects of dietary standardized ileal digestible lysine on growth performance, carcass characteristics, and economics of pigs from 100 to 130 kg**

Hilario M. Cordoba ¹, Mike D. Tokach ¹, Robert D. Goodband ¹, Jason C. Woodworth ¹, Joel M. DeRouchey ¹, Jordan T. Gebhardt ¹

¹Kansas State University

9:15 a.m. 26 **Effects of increasing net energy or standardized ileal digestible lysine in soybean meal-based diets on early and late finishing pig performance**

Ty Kim ¹, Jamil Faccin ¹, Robert D. Goodband ¹, Mike D. Tokach ¹, Joel M. DeRouchey ¹, Jason C. Woodworth ¹, Jordan T. Gebhardt ¹

¹Kansas State University

9:30 a.m. 27 **Standardized ileal digestible lysine to metabolizable energy ratio equations for 12- to 127-kg boars, gilts, immunocastrated gilts and boars**

Gustavo Lima ¹, Gabriel Castro ¹, Amanda P. Siqueira ¹, Carine M. Vier ², Weasley A. Orlando ², Vitor Hugo Moita ², Caio Abercio Silva ³

¹Agroceres PIC, ²Genus PIC, ³State University of Londrina

9:45 a.m. **Nonruminant Nutrition II - Grow-Finish I Break**

10:00 a.m. 28 **Investigation of protein deposition pattern of PIC337×Camborough commercial pigs**

Ning Lu ¹, Nanfang Zeng ², Ning Su ², Ling Chen ², Jie Chen ², Carine M. Vier ¹, Wayne R. Cast ¹, Steve Dritz ¹, Danielle Wilson-Wells ¹, Luis E. Zaragoza ¹, Jordi Camp ¹, Weasley A. Orlando ¹

¹Genus PIC, ²Giastar Agro-Pastoral Co., LTD

10:15 a.m. 29 **Effects of using different dietary standardized ileal digestible lysine plans on growth performance and carcass characteristics of PIC 337 or PIC 800 sired grow-finish pigs**

Jordi Camp¹, Weasley A. Orlando¹, Ning Lu¹, Carine M. Vier¹, Wayne R. Cast¹, Steve Dritz¹, Luis E. Zaragoza¹, Danielle Wilson-Wells¹, Jose Landero², Malachy Young²

¹Genus PIC, ²Gowans Feed Consulting

10:30 a.m. 30 **Effects of using different dietary standardized ileal digestible lysine plans on growth performance and carcass characteristics of grow-finish pigs from high or low breeding value boars**

Jordi Camp¹, Carine M. Vier¹, Matthew Spindler¹, Julia Holen², Weasley A. Orlando¹, Alyssa Betlach², Wayne R. Cast¹, Steve Dritz¹, Danielle Wilson-Wells¹, Ning Lu¹, Luis E. Zaragoza¹

¹Genus PIC, ²Swine Vet Center

10:45 a.m. 31 **Effects of dietary standardized ileal digestible (SID) lysine (Lys) levels and dietary SID tryptophan to Lys ratios on growth performance and behavior of late-nursery to finish maternal barrows**

Ning Lu¹, Luis E. Zaragoza¹, Carine M. Vier¹, Julia A. Calderon Diaz¹, Weasley A. Orlando¹, Ellie Hewett², Simon Turner², Jorge Estrada³, Jordi Camp¹, Wayne R. Cast¹, Steve Dritz¹, Craig Lewis⁴

¹Genus PIC, ²SRUC, ³Carthage Veterinary Service, ⁴PIC Europe

Ruminant Nutrition Symposium

Chair: Kendall Swanson, North Dakota State University

8:30 AM - 12:00 PM

Ballroom C

8:30 a.m. **Ruminant Nutrition Symposium Introduction**

8:35 a.m. 6 **Targeting establishment of methanogens in the young ruminant**

Elizabeth A. French¹

¹USDA

9:20 a.m. 7 **Genetic targeting of the rumen microbiome and affiliated methanogens to assess methane emission in dairy cattle**

Hilário C. Cuquetto Mantovani¹

¹Department of Animal and Dairy Science, University of Wisconsin-Madison, Madison, WI, USA

10:20 a.m. 8 **CANCELLED - The Science behind methane: Using respiration calorimetry head-boxes to estimate energy balance and methane emissions**

Kristen E. Hales¹

¹Texas Tech University

11:05 a.m. 9 **CANCELLED - Use of new technology to measure methane emissions**

Logan R. Thompson¹, Matthew R. Beck²

¹Kansas State University, ²USDA-ARS

Physiology Symposium - Sponsored by Zoetis

Chair: Lea Rempel, USDA, ARS, USMARC

8:30 AM - 12:30 PM

Ballroom A

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

8:35 a.m. 1 **The role of gut microbiota on regulation of growth and metabolism by branched-chain amino acids**

Adel Pezeshki¹

¹Oklahoma State University

9:15 a.m. 2 **Another renaissance for bile acid gastrointestinal microbiology**

Jason Ridlon¹

¹University of Illinois at Urbana-Champaign

9:55 a.m. **Physiology Symposium Break**

10:10 a.m. 3 **The impact of early-life cecal microbiota transplantation on injurious behaviors in egg-laying chickens**

Yuechi Fu¹, Jiaying Hu¹, Huanmin Zhang², Marisa A. Erasmus¹, Heng-wei Cheng², Timothy A. Johnson¹

¹Purdue University, ²USDA-ARS

10:50 a.m. 4 **Nutrition and gut microbial ecology in companion animals**

Dayakar V. Badri¹

¹Hills PNC

11:30 a.m. 5 **Rumen microbiome and metabolome in dairy cattle performance**

Leluo L. Guan¹

¹University of British Columbia

Poster Session II

10:00 AM - 10:45 AM

Grand Terrace

10:00 a.m. PSII-11 **Achieving heavier piglet weights at weaning with live yeast (*Saccharomyces cerevisiae*) supplementation under field conditions**

Sophie Hiscocks¹, Gustavo Cordero¹, Laura A. Merriman¹, Pete Wilcock¹, Samuel F. Leiva², David S. Rosero³

¹AB Vista, ²The Hanor Company, Inc., ³Iowa State University

10:00 a.m. PSII-8 **Analysis of maternal influence on Phenotypic Ultrasound Measurements of weaned Angus calves**

Sarah L. Phelps¹, Garland Dahlke¹, Mary E. Reynolds¹, Miranda Culbertson¹

¹Iowa State University

10:00 a.m. PSII-1 **Bacillus-based probiotic supplementation to sows and weaned progeny help to support live performance and manage gross lung lesions in a nursery H1N2 Influenza challenge**

Keith P. Kinsley ¹, Adam Mueller ², Mark J. Bertram ³, Lea Hubertz B. Hansen ⁴, Steve P. Lerner ⁵

¹Chr-Hansen Inc., ²Swine Services Unlimited Inc., ³First Choice Livestock, ⁴Chr Hansen A/S, ⁵Novonesis

10:00 a.m. PSII-10 **Development of an interdisciplinary undergraduate and graduate course in precision livestock farming systems**

Suzanne M. Leonard ¹

¹North Carolina State University

10:00 a.m. PSII-12 **Dose-dependent effects of supplemental benzoic acid on nitrogen balance, urinary pH, slurry pH, and manure odorous compounds in pigs**

Seung B. Yoo ¹, Yoon Soo Song ¹, Siyoung Seo ², Beob Gyun Kim ¹

¹Konkuk University, ²National Institute of Animal Science

10:00 a.m. PSII-14 **Economic impact of adding exogenous enzymes in a sorghum-based diet for growing and finishing pigs**

Sibely Flores ¹, Roberta Santos ¹, Sudario Roberto Silva Junior ², Pedro Henrique Pereira ¹, Ygor H. Paula ¹, Caio Pereira ¹, VINICIUS S. CANTARELLI ³, Rhuan F. Chaves ⁴, Claudia Martins ⁵, Vitor Fascina ⁵, Leandro Alebrante ⁵

¹Universidade Federal de Lavras, ²University of Minnesota, ³AnimalNutri, ⁴AnimalNutri - Science and Technology, ⁵DSM Nutritional Products Brazil SA

10:00 a.m. PSII-15 **Effect of 25-hydroxyvitamin D₃ supplementation on growth performance of nursery pigs**

Eva Safaie ¹, Chan Ho Kwon ¹, Savannah Locke ¹, Jannell Torres ¹, Setareh Khani ¹, Sarah Han ¹, Young Dal Jang ¹

¹University of Georgia

10:00 a.m. PSII-7 **Effect of endophyte-infected tall fescue on body weight, vital signs, and liver function of beef heifers**

Joao Vitor G. Takashe ¹, Ahmed Sallem ¹, Jackson Matthews ¹, Daniel W. Shike ², Camila U. Braz ¹

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

10:00 a.m. PSII-16 **Effect of iron injection levels and second iron injection on preweaning growth performance and hematological parameters**

Eva Safaie ¹, Savannah Locke ¹, Sarah Han ¹, Jannell Torres ¹, Setareh Khani ¹, Young Dal Jang ¹

¹University of Georgia

10:00 a.m. PSII-2 **Effect of piglet processing and castration on growth performance in feeder pigs**

Emily R. Church ¹, Benjamin Carpenter ¹, Grady A. Privett ¹, Amanda Holder ¹

¹College of the Ozarks

10:00 a.m. PSII-17 **Effect of protease supplementation on amino acids digestibility of soybean meal fed to growing pigs of different ages**

Gabriela M. Miotto Galli ¹, Angie P. Benavides Infante ², Crystal L. Levesque ², VINICIUS S. CANTARELLI ³, Rhuan F. Chaves ⁴, Claudia C. Silva ⁵, Vitor Fascina ⁶, Jorge Y. Perez-Palencia ²

¹Universidade Federal do Rio Grande do sul, ²South Dakota State University, ³AnimalNutri, ⁴AnimalNutri - Science and Technology, ⁵dsm-firmenich, ⁶DSM Nutritional Products Brazil SA

10:00 a.m. PSII-13 **Effects of benzoic acid, bromelain, adipic acid, and humic substance supplementation on nitrogen balance, urine pH, slurry pH, and manure odorous compounds in pigs**

Seung B. Yoo ¹, Yoon Soo Song ¹, Siyoung Seo ², Beob Gyun Kim ¹

¹Konkuk University, ²National Institute of Animal Science

10:00 a.m. PSII-18 **Evaluating the effects of sodium diformate on finishing pig growth performance**

Katelyn N. Gaffield ¹, Joel M. DeRouchey ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹, Robert D. Goodband ¹, Mariana Menegat ², Mary Liebenstein ², Matt W. Allerson ², Jordan T. Gebhardt ¹

¹Kansas State University, ²Holden Farms

10:00 a.m. PSII-3 **Evaluation of a microneedle patch for the delivery of meloxicam in a veterinary application**

Kirsten A. Midkiff ¹, Katherine Miranda-Munoz ¹, Robin A. Cheek ¹, Jana L. Reynolds ¹, Tsung Cheng Cheng Tsai ¹, Misty Bear ², Kushan Kompalage ³, Ryan Tucker ³, Hans F. Coetzee ², Elizabeth B. Kegley ⁴, Jorge Almodovar ¹, Jeremy G. Powell ⁴

¹University of Arkansas, ²Kansas State University College of Veterinary Medicine, ³Kansas State University, ⁴University of Arkansas System, Division of Agriculture, Department of Animal Science

10:00 a.m. PSII-19 **Fecal microbiota composition of weaned piglets under mixed management and poor housing conditions fed diets increased in threonine, methionine and tryptophan**

Danilo Alves Marçal ¹, Antônio Diego Brandão Brandão Melo ², Joseane Penteado Rosa Gonçalves ³, Qinnan Yang ⁴, Marllon José Karpeggiane de Oliveira ⁵, Pedro Righetti Arnaut ², Manoela Trevizan Ortiz ³, Ismael França ², Graziela Alves da Cunha Valini ⁶, Nate Korth ⁷, Natasha Pavlovikj ⁴, Paulo Henrique Reis Furtado Campo ⁸, Henrique Gastmann Gastmann Brand ⁹, John K. Htoo ¹⁰, João Carlos Gomes-Neto ⁷, Andrew Benson ⁴, Luciano Hauschild ²

¹São Paulo State University (UNESP), ²São Paulo State University - School of Agricultural and Veterinary Sciences,, ³São Paulo State University, ⁴University of Nebraska–Lincoln, ⁵School of Agricultural and Veterinarian Sciences, Universidade Estadual Paulista (Unesp), São Paulo, Jaboticabal, Brazil, 14884-900., ⁶AAFC and UNESP, ⁷University of Nebraska, Lincoln, NE, USA. Nebraska Food for Health Center, University of Nebraska, Lincoln, NE, USA., ⁸Federal University of Viçosa, ⁹Evonik Brasil Ltda, ¹⁰Evonik Operations GmbH

10:00 a.m. PSII-21 **Feed intake and growth of young turkeys in the brood when supplemented with Viribus Essentials, a blend of botanical extracts and natural flavors**

Fredrik Sandberg ¹, Steve J. England ¹, Woong Bi Kwon ¹, Robert Fischer ¹, Pornpim Aparachita ¹

¹Furst-McNess Company

10:00 a.m. PSII-20 **Feeding behavior of pigs fed dietary amino acid levels adjusted according to the circadian rhythm**

Alini Mari Veira ¹, Luan Sousa Dos Santos ², Danilo Alves Marçal ³, Antônio Diego Brandão Brandão Melo ³, Luciano Hauschild ³

¹São Paulo State University, ²Federal University of Mato Grosso do Sul, ³São Paulo State University - School of Agricultural and Veterinary Sciences,

10:00 a.m. PSII-4 **Temperature preference of nursery pigs housed in groups by weaning weight quartile**

Jenny Morris ¹, Mike Ellis ¹, Caleb M. Shull ²

¹University of Illinois at Urbana-Champaign, ²The Maschhoffs, LLC

10:00 a.m. PSII-5 **Temperature preference of nursery pigs housed in groups with mixed body weight**

Jenny Morris ¹, Mike Ellis ¹, Caleb M. Shull ²

¹University of Illinois at Urbana-Champaign, ²The Maschhoffs, LLC

10:00 a.m. PSII-6 **The interactive effects of deoxynivalenol and lipopolysaccharides on gut integrity and inflammation in IPEC-J2 cells**

Hang Lu ¹, Julie Simmons ¹, Adrienne Woodward ¹, Nathan Horn ¹

¹United Animal Health

10:00 a.m. PSII-9 **Whole genome sequences of two nitrate-reducing strains of *Selenomonas ruminantium* isolated from the rumen**

Margaret K. Costello ¹, Steven C. ricke ¹, Jennifer McClure ², Robin C. Anderson ³

¹University of Wisconsin–Madison, ²USDA-ARS, ³United States Department of Agriculture, Agricultural Research Service, Food and Feed Safety Research Unit

Swine Translational Symposium
Chair: Matthew Ritter, United Animal Health
1:00 PM - 5:20 PM
Ballroom C

1:00 p.m. **Swine Translational Symposium Introduction**

1:05 p.m. 37 **Key learnings from the improving pig survivability project**

Joel M. DeRouche¹, Jason W. Ross², Christopher Rademacher², Mike D. Tokach¹, Jason C. Woodworth¹, Stacie Matchan², Daniel C. Linhares², Anna K. Johnson³, Lee Schulz², Kara R. Stewart⁴, Jack C. Dekkers⁵, Laura L. Greiner², Nicholas K. Gabler², Jordan T. Gebhardt¹

¹Kansas State University, ²Iowa State University, ³Animal Science, Iowa State University, ⁴Purdue University, ⁵Departments of Animal Science, Iowa State University

1:35 p.m. 38 **Pig survival—current state of the US swine industry**

Josh Flohr¹, Noel H. Williams¹, Hadley Williams¹

¹Seaboard Foods

2:20 p.m. 39 **Using genetics and technology to improve swine robustness**

Dan Hamilton¹, Miranda Culbertson², Justin W. Holl¹

¹Genus PIC, ²Iowa State University

3:05 p.m. **Swine Translational Symposium Break**

3:20 p.m. 40 **Feeding and managing enteric challenged pigs**

Nicholas K. Gabler¹

¹Iowa State University

4:05 p.m. 41 **Is there anything we can do to lessen the severity of PRRSv?**

Paul Yeske¹

¹Swine Vet Center

4:50 p.m. 42 **Group sow housing considerations for improved survival and productivity**

Roger Gregory Campbell¹

¹RG CAMPBELL ADVISORY

Undergraduate Student Oral Competition
Sponsored by the Gretchen Hill Appreciation Club
Chair: Anna Dilger, University of Illinois Urbana-Champaign
1:00 PM - 5:30 PM
Hall of Ideas G/J

1:00 p.m. 79 **Evaluating the effects of increasing levels of sodium diformate on nursery pig performance**

Gracie Becker¹, Katelyn N. Gaffield¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Robert D. Goodband¹, Troy Lohrmann², Christian Lückstädt³, Jordan T. Gebhardt¹

¹Kansas State University, ²Quality Technology International, ³ADDCON

1:15 p.m. 80 **Substitution of dried distillers grains with soybean meal on beef cattle diets: Effects on ruminal ammonia and volatile fatty acid concentrations**

Natasha L. Macholan¹, Grace Jardon¹, Elissa Colombo², Zachary K. Smith¹, Warren C. Rusche¹, Ana Clara B. Menezes¹

¹South Dakota State University, ²William Carey University

1:30 p.m. 81 **Effects of udder quarter location on colostrum yield, nutrients, and immunoglobulin G in beef heifers**

Jessalyn E. Caple¹, Abigail R. Rathert-Williams², Colby A. Redifer³, Thomas B. McFadden¹, Allison M. Meyer¹

¹Division of Animal Sciences, University of Missouri, ²Division of Animal Sciences, College of Agriculture, Food and Natural Resources, University of Missouri, ³University of Missouri

1:45 p.m. 82 **Relationships between performance traits and osteochondrosis of the hock in Standardbred racehorses**

Ella Frake¹, Nicole Tate², Annette McCoy³, Molly McCue²

¹University of Minnesota - Twin Cities, ²University of Minnesota, ³University of Illinois

2:00 p.m. 83 **Effect of stocking density on F1 Gilt reproductive performance**

Clara K. Henry¹, Rachel Self², Brady McNeil³, Amanda Cross³, Ethan Stephenson⁴, Christine Mainquist-Whigham⁴

¹Michigan State University, ²University of Missouri, ³DNA Genetics, ⁴Pillen Family Farms

2:15 p.m. 84 **Evaluating the effects of hind gut acidosis in sheep on rumen fermentation ex vivo**

Emma G. Prybylski¹, Haley F. Linder², Joshua C. McCann²

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

2:30 p.m. 85 **The influence of supplementing isolated or intact structural fiber on the physicochemical properties of digesta and fecal consistency of nursery pigs**

Alexis A. Lloyd¹, Bre Pace¹, Erick Fuentes Cardona¹, Hannah Miller¹, Rachel Self¹, Isabella Murphy², Leah M. Kellesvig³, Michaela Metz³, Amy L. Petry²

¹University of Missouri, ²University of Missouri, Division of Animal Science, ³Vita Plus

2:45 p.m. 86 **Assessment of sow hemoglobin concentration and its impact on farrowing duration**

Sydney L. Sheffield ¹, Katlyn A. McClellan ¹, Crystal L. Levesque ¹

¹South Dakota State University

3:00 p.m. 87 **Evaluating the effects of an amino acid-formulated diet on ruminal fermentation in vitro**

McKenna Merritt ¹, Haley F. Linder ², Michael J. Cecava ³, Joshua C. McCann ²

¹Western Illinois University, ²University of Illinois Urbana-Champaign, ³Boveta Nutrition, LLC

3:15 p.m. **Undergraduate Student Oral Competition Break**

3:30 p.m. 88 **Ruminal degradation profiles of dry matter, organic matter, and crude protein of finishing diets with different levels of inclusion of DDGS and soybean meal**

Katherine M. Moening ¹, Grace Jardon ¹, Elissa Colombo ², Zachary K. Smith ¹, Warren C. Rusche ¹, Ana Clara B. Menezes ¹

¹South Dakota State University, ²William Carey University

3:45 p.m. 89 **Evaluation of repeatability of anogenital distance measured with either a caliper or photogrammetry**

Andres Olalde ¹, Kylie P. Ewing ², Joshua C. McCann ³, Daniel W. Shike ³

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

4:00 p.m. 90 **Evaluating water- and feed-based arginine supplementation on newly weaned pig growth and gastrointestinal health**

Ayva Bohr ¹, Chloe S. Hagen ¹, Keith D. Haydon ², Laura L. Greiner ¹

¹Iowa State University, ²CJ Bio America

4:15 p.m. 91 **The effect of increasing oat groat levels on nursery pig performance, digesta pH, and fecal consistency and physicochemical properties**

Bre Pace ¹, Alexis A. Lloyd ¹, Isabella Murphy ², Hannah Miller ¹, Amy L. Petry ²

¹University of Missouri, ²University of Missouri, Division of Animal Science

4:30 p.m. 92 **Factors influencing bull selection in Illinois beef producers: Analysis of retained and non-retained ownership producers**

Grace E. Rincker ¹, Joshua C. McCann ¹, Daniel W. Shike ¹, William T. Meteer ¹

¹University of Illinois Urbana-Champaign

4:45 p.m. 93 **Evaluating the efficacy of anthelmintics in an upper Midwest horse herd**

Sarah Schmidt ¹, Avery Dobrzelecki ¹, Alex Pfaffenbach ¹, Savea Zimmerman-Cameron ¹, Morgan Pyles ¹

¹University of Minnesota Crookston

5:00 p.m. 94 **Effects of orally administered *Megasphaera elsdenii* during finishing diet realimentation on feedlot steer fecal consistency, clinical depression, and rumination**

Zachary Schoelerman¹, Warren C. Rusche¹, Zachary K. Smith¹, Forest L. Francis¹
¹South Dakota State University

5:15 p.m. 95 **Effects of increasing standardized ileal digestible valine:lysine ratio on growth performance in finishing pigs**

Samantha Swanson¹, Andy Boschert¹, Mikayla Spinler¹, Jason C. Woodworth¹, Mike D. Tokach¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹
¹Kansas State University

**Graduate Student Oral Competition PHD
Sponsored by the Gretchen Hill Appreciation Club**

Chair: Ryan Samuel, South Dakota State University

1:15 PM - 5:30 PM

Hall of Ideas E/H

1:15 p.m. 63 **Impacts of dietary myristic acids on mucosa-associated microbiota in relation to intestinal health and growth parameters of nursery pigs**

Hyunjun Choi¹, Gabriel C. Rocha¹, Sung Woo Kim¹
¹North Carolina State University

1:30 p.m. 64 **Effect of feeding intact protein from soybean meal instead of crystalline amino acids on growth performance, protein synthesis, and immune response of growing pigs**

Minoy Cristobal¹, Su A Lee¹, Andrea P. Mallea¹, Leidy J. Torres-Mendoza¹, Jessica P. Acosta¹, Carl M. Parsons², Hans H. Stein¹
¹University of Illinois at Urbana-Champaign, ²University of Illinois Urbana-Champaign

1:45 p.m. 65 **Effect of two different implant programs on growth performance and carcass characteristics in beef steers fed to three differing harvest endpoints**

Becca B. Grimes Francis¹, John P. Hutcheson², Lee-Anne J. Walter², Wade T. Nichols², Zachary K. Smith³

¹Animal Science/ South Dakota State University, ²Merck Animal Health, ³South Dakota State University

2:00 p.m. 66 **A novel analytical method for identifying periods of increased mortality in individual wean-to-finish pig barns**

Caleb J. Grohmann¹, Jared E. Decker², Caleb M. Shull³, Erin J. Lowe⁴, Jon Hoek⁴, Kevin Schnarre⁵, Dale D. Polson⁵

¹University of Missouri–Columbia, ²University of Missouri - Columbia, ³The Maschhoffs, LLC, ⁴Summit Smart Farms, ⁵Boehringer Ingelheim Vetmedica GmbH

2:15 p.m. 67 **Decontamination of a feed manufacturing environment following inoculation of porcine epidemic diarrhea virus, porcine reproductive and respiratory virus, and Seneca Valley virus 1**

Olivia Harrison ¹, Haley Otott ¹, Jianfa Bai ¹, Vaughn Hamill ¹, Aaron Singrey ², Phillip C. Gauger ³, Marcelo Almeida ³, Jason C. Woodworth ¹, Cassandra K. Jones ¹, Charles R. Stark ¹, Roman Pogranichniy ¹, Jordan T. Gebhardt ¹, Chad B. Paulk ⁴

¹Kansas State University, ²South Dakota State University, ³Iowa State University, ⁴Kansas state university

2:30 p.m. 68 **Serological comparison of IBR-BVD-PI3-BRSV- Mannheimia haemolytica toxoid vaccines**

Kirsten A. Midkiff ¹, Elizabeth B. Kegley ², Shane Gadberry ³, Robin A. Cheek ¹, Jana L. Reynolds ¹, Tom Hess ³, Jeff Sarchet ⁴, Mitch Blanding ⁴, Tom Short ⁴, Jeremy G. Powell ²

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

2:45 p.m. 62 **Implications of factor analyses and Bayesian network learning to develop composite traits of size attributes in developing beef heifers**

Muhammad Anas ¹, Bin Zhao ², Carl R. Dahlen ², Kendall C. Swanson ³, Kris A. A. Ringwall ², Lauren L. Hanna ²

¹NDSU, ²North Dakota State University, ³Department of Animal Sciences, North Dakota State University

3:00 p.m. 70 **Determination of phosphorus release of Microtech phytase in nursery pig diets**

Ron Aldwin S. Navales ¹, Katelyn N. Gaffield ¹, Ty Kim ¹, Joel M. DeRouchey ¹, Paul Martin ², Juan Javierre ³, Jordan T. Gebhardt ¹, Robert D. Goodband ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹

¹Kansas State University, ²Imogene Ingredients, ³JA Santafe Ventures S.L.

3:15 p.m. **Graduate Student Oral Competition PHD Break**

3:30 p.m. 71 **Growth and reproductive responses to gonadotropins in gilts fed on ad libitum (AD) or restricted (RS) bases using an electronic sow feeder (ESF)**

Richard T. Niblett ¹, Kimberly A. Williams ¹, Marguerite B. Cross ¹, Alexis L. Clapp ¹, Mark J. Estienne ¹

¹Virginia Tech- Tidewater Agricultural Research and Extension Center

3:45 p.m. 72 **Effect of In-feed fecal microbiota transplant on growth performance and gut microbiota dynamics of piglet subjected to post-weaning stress**

Paul O. Oladele ¹, Brian T. Richert ¹, Timothy A. Johnson ¹

¹Purdue University

4:00 p.m. 73 **Effects of blends of organic acids and monoglycerides on immune responses of weaned pigs experimentally infected with enterotoxigenic Escherichia coli F18**

Sangwoo Park ¹, Ying Chen ², Ross Wolfenden ², Yanhong Liu ¹

¹University of California, Davis, ²Eastman Chemical Company

4:15 p.m. 74 **Feeding style and its influence on growth, circulating insulin, and spatial preference of young pigs**

Kaitlyn Sommer¹, Loreta Sutkus², Rebecca Golden², Ryan N. Dilger³

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

4:30 p.m. 75 **Diet acid-binding capacity-4 influences nursery pig performance and fecal dry matter**

Ethan B. Stas¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University

4:45 p.m. 76 **Effect of 0.79% top-dressed arginine supplementation at different gestation periods and seasons on the colostrum composition and productive performance of sows and piglets**

Sara Viridis¹, Diana Luise¹, Federico Correa¹, Francesco Palumbo¹, Clara Negrini¹, Gabriella Orazzo¹, Maria Vittoria Graziosi¹, Umberto Rolla², Paolo Trevisi¹

¹University of Bologna, ²Martini S.p.A.

5:00 p.m. 77 **Healing progression of tail docking and ear tag wounds in lambs**

Jocelyn M. Woods¹, Sarah J J Adcock²

¹University of Wisconsin–Madison, ²University of Wisconsin Madison

5:15 p.m. 78 **Estimates of genetic parameters for weight, wool, and carcass traits of Rambouillet sheep**

Hilal Yazar Gunes¹, Luiz F. Brito², Tom W. Murphy³, Carrie S. Wilson⁴, Ronald M. Lewis⁵

¹University of Nebraska-Lincoln, ²Department of Animal Sciences, Purdue University, West Lafayette, IN, 47907, USA, ³USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center, ⁴USDA-ARS-RSPER, ⁵University of Nebraska - Lincoln

Nonruminant Nutrition III - Enzymes

Chair: Yuan-Tai Hung, Devenish Nutrition

1:45 PM - 5:15 PM

Ballroom D

1:45 p.m. 43 **Evaluating the effects of HiPhorius phytase added in diets at or below the P requirement on nursery pig growth performance and bone mineralization**

Macie E. Reeb¹, Macie E. Reeb¹, Jon R. Bergstrom², Jordan T. Gebhardt³, Robert D. Goodband³, Mike D. Tokach³, Joel M. DeRouchey³, Jason C. Woodworth³

¹AMVC, ²dsm-firmenich, ³Kansas State University

2:00 p.m. 44 **Investigation of the nutritional and functional roles of mannanase on intestinal health and growth of newly weaned pigs fed a low-cost formulated diet**

Jonathan T. Baker¹, Adebayo O. Sokale², Brent Frederick³, Sung Woo Kim¹

¹North Carolina State University, ²BASF Corpotation, ³Cargill

2:15 p.m. 45 **Awardee Talk: Investigation of the nutritional and functional roles of a combinational use of xylanase and β -glucanase on intestinal health and growth of nursery pigs**

Hyunjun Choi ¹, Yesid R. Garavito Duarte ¹, Guilherme Pasquali ², Sung Woo Kim ¹
¹North Carolina State University, ²BASF SE

2:45 p.m. 46 **Efficacy of a biosynthetic 6-phytase depending on basal diet composition in weaning piglets**

Maamer Jlali ¹, Sarper Ozbek ¹, Estelle Devillard ¹, Haitham Yakout ²
¹Adisseo France SAS, ²Adisseo North America

3:00 p.m. 47 **Application of a 'high' or 'low' energy matrix to a nutrient-reduced diet supplemented with a novel phytase maintained growth performance and conferred production and sustainability benefit**

Ester Vinyeta ¹, Vanessa Lagos ², Francesc Molist ², Deepak E. E Velayudhan ¹, Yueming Dersjant-Li ¹
¹Danisco Animal Nutrition & Health (IFF), ²Schothorst Feed Research

3:15 p.m. 48 **Use of 4500 FTU/kg of phytase on performance and blood parameters of finishing pigs**

Alexandre Barbosa de Brito ¹, Miliane Alves da Costa ², Ingrid Y. Martinez Rojas ², Gustavo Cordero ², Gilson A. Gomes ², Tiago Santos ²
¹AB VISTA, ²AB Vista

3:30 p.m. **Nonruminant Nutrition III - Enzymes Break**

3:45 p.m. 49 **Effects of xylanase or a stimbiotic on growth performance and total tract digestibility of nutrients by pigs weaned from sows fed a lactation diet without or with xylanase**

Jessica P. Acosta ¹, Gemma Gonzalez Ortiz ², Hans H. Stein ¹
¹University of Illinois at Urbana-Champaign, ²AB Vista

4:00 p.m. 50 **Feeding a multi-carbohydrase improves mortality, morbidity and variability of growing pigs fed varying levels of DDGS.**

Mark A. Giesemann ¹, Darlene J. Bloxham ², Marcio Ceccantini ³
¹Adisseo USA, Inc, ²Adisseo North America, ³ADISSEO BRASIL NUTRIÇÃO ANIMAL LTDA

4:15 p.m. 51 **Application of an energy and nutrient matrix to a mixed cereals-based diet supplemented with a novel phytase and xylanase- β -glucanase achieved a production benefit from wean-to-finish in pigs**

Deepak E. E Velayudhan ¹, Yueming Dersjant-Li ¹, Saad Gilani ¹, Rachael Hardy ¹, Ester Vinyeta ¹, Georg Dusel ²
¹Danisco Animal Nutrition & Health (IFF), ²University of Applied Sciences Bingen

4:30 p.m. 52 **Alleviating antinutritional effects of high soybean meal diets for nursery pigs through multienzyme and acidifier supplementation**

Ashir Foreman Atoo ¹, Andres Bolivar-Sierra ¹, Jorge Y. Perez-Palencia ¹, Rob Patterson ², Hari B. Krishnan ³, Crystal L. Levesque ¹, Jinsu Hong ⁴
¹South Dakota State University, ²CBS Bio Platforms Inc., ³USDA, ⁴University of Minnesota

4:45 p.m. 53 **Evaluation of the impact of high doses of phytase and marketing strategy on performance and carcass characteristics of late finishing pigs in commercial settings**

Izadora B. Kuneff¹, David S. Rosero², Ximena Paz³, Samuel F. Leiva³, Pete Wilcock⁴, Eric van Heugten¹, Amanda Elsbernd³

¹North Carolina State University, ²Iowa State University, ³The Hanor Company, Inc., ⁴AB Vista

5:00 p.m. 54 **Effects of a new biosynthetic 6-phytase supplementation on nutrient digestibility, phytate disappearance and growth efficiency in weaning piglets fed low in calcium and digestible phosphorus diets**

Maamer Jlali¹, Sarper Ozbek¹, Estelle Devillard¹, Haitham Yakout²

¹Adisseo France SAS, ²Adisseo North America

Ruminant Nutrition I

Chair: Zachary Smith, South Dakota State University

2:00 PM - 3:45 PM

Meeting Room K-O-L-P

2:00 p.m. 56 **Metabolic status of respiratory disease challenged beef steers altered by intranasal Zn and vitamin A treatments**

Emma L. Rients¹, Carlos Franco¹, Jodi McGill², Stephanie L. Hansen¹

¹Iowa State University, ²Iowa State University

2:15 p.m. 57 **Effect of diet mixing strategies on growth performance and carcass characteristic in feedlot steer**

Naomi L. Waldon¹, Lyda Garcia¹, Doug Clevenger¹, Alejandro E. Relling¹

¹The Ohio State University

2:30 p.m. 58 **Evaluation of a phytogenic blend on growth performance, health, carcass traits, and efficiency of dietary net energy utilization in finishing beef steers**

Thiago Lauro Maia Ribeiro¹, Becca B. Grimes Francis², Zachary K. Smith¹, Forest L. Francis¹, Cassidy R. Ross¹, Jeff S. Heldt³, Warren C. Rusche¹, Emma H. Wall⁴

¹South Dakota State University, ²Animal Science/ South Dakota State University, ³Selko USA, ⁴Nutreco

2:45 p.m. 59 **Effects of serial harvest on growth and carcass characteristics of beef x dairy crossbred steers**

Grant I. Crawford¹, Lee-Anne J. Walter¹, Alyssa B. Word², Kendall Karr³, Ben P. Holland², John P. Hutcheson¹, Wade T. Nichols¹, Marshall N. Streeter¹, Brandon L. Nuttelman¹

¹Merck Animal Health, ²Cactus Research, ³Kendall Karr Consulting

3:00 p.m. 60 **Effects of phase feeding rolled hybrid rye on feedlot performance in backgrounded beef steers**

Riley J. Leeson¹, Erin R. DeHaan¹, Justin J. Delver¹, Forest L. Francis¹, Becca B. Grimes Francis², Thiago L. Maia Ribeiro¹, Zachary K. Smith¹, Warren C. Rusche¹

¹South Dakota State University, ²Animal Science/ South Dakota State University

3:15 p.m. 61 **Effects of botanical composition on grazing system management, forage quality, forage availability, and ewe performance**

Emma G. Prybylski¹, Alyssa Brown¹, Lauren Neuleib², Joshua C. McCann³, Nicholas Heller², Jennifer E. Earing²

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

3:30 p.m. 204 **Detecting subclinical mastitis in meat-breed ewes using infrared thermography**

Gretchen Peckler¹, Sarah J J Adcock²

¹University of Wisconsin–Madison, ²University of Wisconsin Madison

Graduate Student Oral Competition MS
Sponsored by the Gretchen Hill Appreciation Club

Chair: Kwangwook Kim, Michigan State university

2:00 PM - 4:45 PM

Hall of Ideas F/I

2:00 p.m. 96 **Evaluating the impact of macroenvironment temperature on thermoregulatory and milk quality parameters in lactating sows and their litter**

Mekenzie R. Cecil¹, Samantha M Neeno¹, MaryKate H. Byrd¹, Tyler C C. field¹, Jeremy N Marchant¹, Allan P. Schinckel¹, Brian T. Richert¹, Ji-Qin Ni¹, Robert M M. Stwalley III¹, Jay S. Johnson²

¹Purdue University, ²USDA-ARS Livestock Behavior Research Unit

2:15 p.m. 97 **Effects of crude protein content and supplementing probiotics in late gestation and lactation sow diets on performance of sows and suckling pigs**

Leah E. Chrapun¹, Jinyoung Lee¹, S. María S. Mendoza², John K. Htoo³, C. Martin Nyachoti¹

¹University of Manitoba, ²Evonik Corporation, ³Evonik Operations GmbH

2:30 p.m. 98 **Adding parasite resistance to the breeding objective in Hair Sheep**

Robert M. Forbes¹, Tom W. Murphy², Joan M. Burke³, Ronald M. Lewis¹

¹University of Nebraska - Lincoln, ²USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center, ³USDA, ARS, Dale Bumpers Small Farms Research Center

2:45 p.m. 99 **Phytochemicals as medical growth promoter replacement on growth performance in wean to finisher pigs**

Hannah G. Grogan¹, Rebecca Allen¹, Robert Story¹, Bernard Sam¹, Jamie Andrés Ángel Isaza², Blanca Cecilia Martinez², Álvaro José Uribe², Charles V. Maxwell¹, Tsung Cheng Cheng Tsai¹

¹University of Arkansas, ²PROMITEC SANTANDER S.A.S

3:00 p.m. 100 **Evaluating the effect of liver copper concentration on vaccine response in lightweight dairy-beef steers**

Jacob A. Henderson¹, Jodi McGill², Stephanie L. Hansen¹

¹Iowa State University, ²Iowa State University

3:15 p.m. **Graduate Student Oral Competition MS Break**

3:30 p.m. 101 **Supplementation of Valine, Isoleucine, and Tryptophan may overcome the negative effects of dietary excess Leucine in high protein corn protein when fed to weanling pigs**

Andrea P. Mallea ¹, Su A Lee ¹, Minoy Cristobal ¹, Leidy J. Torres-Mendoza ², Hans H. Stein ¹

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

3:45 p.m. 102 **Circadian patterns of behavior, respiration, rectal temperature, saliva melatonin, cytokine levels, and milk immune cells are altered by cooling heat-stressed lactating sows**

Wonders Ogundare ¹, Leriana Garcia Reis ², Amber Jannasch ², Linda M. Beckett ², Allan P. Schinckel ², Theresa M. Casey ², Radiah C. Minor ¹

¹North Carolina A&T State University, ²Purdue University

4:00 p.m. 103 **Effects of partial or total replacement of dried distillers with soybean meal on growth performance, carcass characteristics, sera urea nitrogen, and net energy utilization in finishing beef steers**

Cassidy R. Ross ¹, Erin R. DeHaan ¹, Forest L. Francis ¹, Becca B. Grimes Francis ², Thiago L. Maia Ribeiro ¹, Zachary K. Smith ¹, Warren C. Rusche ¹

¹South Dakota State University, ²Animal Science/ South Dakota State University

4:15 p.m. 104 **Effects of providing vitamin and mineral supplementation throughout gestation on subsequent F1 replacement heifer liver and muscle oxygen consumption and mitochondrial function throughout pregnancy**

Kathryn RM Slavick ¹, Ana Clara B. Menezes ², Jennifer L. Hurlbert ¹, Kazi Sarjana Safain ¹, Kerri A. Bochantin ¹, Julia Travassos da Silva ¹, Pauliane Pucetti ¹, James D. Kirsch ¹, Kevin K. Sedivec ³, Kendall C. Swanson ⁴, Carl R. Dahlen ¹

¹North Dakota State University, ²South Dakota State University, ³NDSU, ⁴Department of Animal Sciences, North Dakota State University

4:30 p.m. 105 **Water quality analysis and flow rate comparison between wean-finish swine barns**

olivia C S kittle ¹, Suzanne M. Leonard ², Mark Knauer ², Glen Almond ¹

¹NCSU, ²North Carolina State University

David Baker Symposium - Sponsored by David H. Baker Appreciation Club

Chair: Hans H. Stein, University of Illinois at Urbana-Champaign

2:00 PM - 5:30 PM

Ballroom B

2:00 p.m. **David Baker Symposium Introduction**

2:05 p.m. 32 **Overview over methionine metabolism: Implications in swine nutrition and health**

Shengfa F. Liao ¹, Emmanuel O. Oladejo ²

¹Department of Animal & Dairy Sciences, Mississippi State University, ²Mississippi State University

2:45 p.m. 33 **1-carbon metabolism: Methionine and more**

Jaap Van Milgen ¹

¹PEGASE, INRAE, Institut Agro, France

3:25 p.m. **David Baker Symposium Break**

3:40 p.m. 34 **DPP Lecture: Evidence of methionine effects on health and immune response of animals**

Daniel A. Columbus ¹

¹Prairie Swine Centre, Inc.

4:20 p.m. 35 **Role and mechanism of supplemental methionine in metabolic stress of broilers raised at high ambient temperature or stock density**

Xin Gen Lei ¹

¹Cornell University

5:00 p.m. 36 **Effects of grinding method on ileal digestibility of amino acids in different short-season corn cultivars fed to growing pigs**

Jinyoung Lee ¹, C. Martin Nyachoti ¹

¹University of Manitoba

Poster Session III

4:45 PM - 5:30 PM

Grand Terrace

4:45 p.m. PSIII-7 **7&7 Synch improved pregnancy rates in beef cows experiencing estrus over 24 h before fixed-time insemination**

Garrett Havelka ¹, Friederike Baumgaertner ¹, Kerri A. Bochantin ¹, Jennifer L. Hurlbert ¹, Timothy Long ², Cody Wieland ¹, Kevin K. Sedivec ², Carl R. Dahlen ¹

¹North Dakota State University, ²NDSU

4:45 p.m. PSIII-1 **Clinical benefits of an in-water essential oil blend on antibiotic-free pigs with post-weaning diarrhea: A field study**

Gillian GREAVES ¹, Clint LICHTY ¹, Ashley L. Wagner ², Bertrand MEDINA ², Ivan D. GIRARD ²

¹SouthWest Ontario Veterinary Service, ²Probiotech International Inc.

4:45 p.m. PSIII-17 **Comparative assessment of New Generation Phytase (HiPhorius™ vs. Ronozyme HiPhos in growing-finishing pigs**

Aileen Joy L. Mercado ¹, Terry Weeden ¹, Huyen T. Tran ¹, Murali Raghavendra Rao ², Jon R. Bergstrom ³, Brenda de Rodas ¹

¹Purina Animal Nutrition, ²Purina Animal Nutrition LLC, ³dsm-firmenich

4:45 p.m. PSIII-14 **Effect of a combined supplementation of *Bacillus* spp. and lactic acid bacteria probiotics on growth performance and fecal score in nursery pigs**

Tiffany Petersen ¹, Chan Ho Kwon ², Young Dal Jang ²

¹University of Wisconsin–River Falls, ²University of Georgia

4:45 p.m. PSIII-15 **Effect of dietary fatty acids composition on growth performance, fecal consistency, and plasma fatty acid profile of weaned pigs**

Alejandra Forero Salamanca ¹, Crystal L. Levesque ¹, Jorge Y. Perez-Palencia ¹

¹South Dakota State University

4:45 p.m. PSIII-16 **Effects of dietary corn origin (U.S., Argentina, and Brazil) on pig growth performance**

Joseph Halbur ¹, Alejandra Forero Salamanca ¹, Jordan K. Jansen ¹, Jinsu Hong ², Jorge Y. Perez-Palencia ¹, Crystal L. Levesque ¹, Shane Mueller ³, Robert C. Thaler ¹, Eric Weaver ¹

¹South Dakota State University, ²University of Minnesota, ³Northern Crops Institute

4:45 p.m. PSIII-18 **Effects of HiPhorius and Ronozyme HiPhos on performance of nursery pigs**

Huyen T. Tran ¹, Aileen Joy L. Mercado ¹, Terry Weeden ¹, Jon R. Bergstrom ², Brenda de Rodas ¹

¹Purina Animal Nutrition, ²dsm-firmenich

4:45 p.m. PSIII-4 **Evaluating the variability of the dual sugar absorption test as a measure of intestinal permeability in pigs**

Cameron S. White ¹, Laura L. Greiner ², Mike D. Tokach ³, Jason C. Woodworth ³, Ryan N. Dilger ⁴

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

4:45 p.m. PSIII-2 **Evaluation of medium-chain fatty acids on just-weaned piglet performance and diarrhoea scores: A nursery trial**

Bertrand MEDINA ¹, Dan BUSSIÈRES ², Ivan D. GIRARD ¹

¹Probiotech International Inc., ²Groupe CÉRÈS Inc.

4:45 p.m. PSIII-3 **Evaluation of remote detection of heart rate, respiratory rate, and body temperature for improved detection of bovine respiratory disease in high-risk receiving calves**

Robin A. Cheek ¹, Elizabeth B. Kegley ², Jana L. Reynolds ¹, Scott Ijaz ¹, Kirsten A. Midkiff ¹, Jeremy G. Powell ²

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

4:45 p.m. PSIII-8 **Expression of Toll-Like Receptors in endometrium of gilts during early gestation**

Kyle J. Hickman-Brown¹, Molly S. Smith¹, Brooke E. McAnally¹, Joseph Cain¹, Heewon Seo¹, Claire Stenhouse², Fuller W. Bazer¹, Gregory Johnson¹, Jeffrey Wiegert¹, Rebecca K. Poole¹

¹Texas A&M University, ²Pennsylvania State University

4:45 p.m. PSIII-9 **Field fertility following the practice of post-cervical artificial insemination (PCAI) at multiple North American swine units.**

Bradley A. Didion¹, Michael Kleve-Feld²

¹Genus PIC, ²PIC North America

4:45 p.m. PSIII-19 **Impact of EnduraPig™ and EnduraSow™ supplementation on growth performance of wean to finish pigs naturally infected with porcine reproductive and respiratory syndrome virus**

Aileen Joy L. Mercado¹, Huyen T. Tran¹, Stacie Crowder², Brenda de Rodas¹

¹Purina Animal Nutrition, ²PMI Additives

4:45 p.m. PSIII-20 **Impact of EnduraPig™ on Performance of PRRSV-Negative growing-finishing pigs**

Huyen T. Tran¹, Aileen Joy L. Mercado¹, Murali Raghavendra Rao², Stacie Crowder³, Brenda de Rodas¹

¹Purina Animal Nutrition, ²Purina Animal Nutrition LLC, ³PMI Additives

4:45 p.m. PSIII-21 **Impact of high zinc oxide supplementation or lignocellulose supplement on chronic markers of intestinal inflammation and growth of weaned piglets**

Eya Selmi¹, Antony T. Vincent², Marie-Pierre Létourneau-Montminy¹, Luca Lo Verso¹, Frédéric Guay¹

¹Laval University, ²Département des sciences animales, Université Laval

4:45 p.m. PSIII-10 **Impact of late gestation vitamin A and D injection on offspring growth and immune parameters in piglets**

Samantha Yankocy¹, Laura Loughlin¹, Rachel Walker¹, Elizabeth A. Hines¹

¹Penn State University

4:45 p.m. PSIII-5 **Impact of multiple suckling of litters during lactation on pre-weaning piglet performance**

Noah Gainey¹, Caleb M. Shull², Mike Ellis¹

¹University of Illinois at Urbana-Champaign, ²The Maschhoffs, LLC

4:45 p.m. PSIII-11 **Impacts of late gestational in utero heat stress on small intestine dynamics of neonatal dairy calves**

Maverick C. Guenther¹, Brittney D. Davidson¹, Sena Field¹, Bethany Dado-Senn¹, Geoffrey Dahl², Michael A. Steele³, Lautaro Rostoll Cangiano¹, Jimena Laporta⁴

¹University of Wisconsin–Madison, ²University of Florida, ³Department of Animal Bioscience, University of Guelph, Guelph, ON, Canada, ⁴University of Wisconsin-Madison

4:45 p.m. PSIII-12 **Influence of early gestational heat stress on biomarkers of mammary gland development in replacement gilts genomically selected for thermotolerance or thermosensitivity**

Jacob Musa ¹, MaryKate H. Byrd ¹, Theresa M. Casey ¹, Luiz F. Brito ², Aridany Suarez-Trujillo ³, Allan P. Schinckel ¹, Christian Maltecca ⁴, Francesco Tiezzi ⁵, Jay S. Johnson ⁶
¹Purdue University, ²Department of Animal Sciences, Purdue University, West Lafayette, IN, 47907, USA, ³Berry College, ⁴Department of Animal Science, North Carolina State University, ⁵University of Florence, ⁶USDA-ARS Livestock Behavior Research Unit

4:45 p.m. PSIII-13 **Putative metabolites for sow lifetime opportunity and production traits**

Lea A. Rempel ¹, Robert Lee ²

¹USDA-ARS US Meat Animal Research Center, ²USDA, ARS, USMARC

4:45 p.m. PSIII-6 **Tail damage caused by tail biting in growing-finishing pigs housed in two group sizes**

Yuzhi Li ¹, Courtney A. Archer ², Adrienne Hilbrands ¹, Ty B. Schmidt ³, Benny E. Mote ⁴, Lee J. Johnston ¹

¹West Central Research and Outreach Center, University of Minnesota, ²University of Minnesota, ³University of Nebraska, ⁴University of Nebraska-Lincoln

Tuesday, March 12, 2024

Poster Session IV-A - Sponsored by Gretchen Hill Appreciation Club

7:30 AM - 8:30 AM

Grand Terrace

7:30 a.m. PSIV-A-1 **Comparing early and late spring grazing of cereal rye utilizing a high-density, short-duration grazing system**

Rachel Stone ¹, Joshua C. McCann ², Keela Trennepohl ¹

¹Western Illinois University, ²University of Illinois Urbana-Champaign

7:30 a.m. PSIV-A-2 **Comparison of rising plate meter and total collection methods for forage mass determination of tall fescue**

Fernando Delgado ¹, Kylie P. Ewing ¹, Joshua C. McCann ², Daniel W. Shike ²

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

7:30 a.m. PSIV-A-3 **Effect of fiber and stimbiotic on growth performance and the gut microbiome in pigs challenged with F18 enterotoxigenic *Escherichia coli* (ETEC).**

Erika Shirer ¹, Alisun N. Watson ¹, Robert Story ¹, Charles V. Maxwell ¹, Spenser L. Becker ², Pete Wilcock ², Amanda J. Gearhart ³, Jiangchao Zhao ¹, Tsung Cheng Cheng Tsai ¹

¹University of Arkansas, ²AB Vista, ³JBS Live Pork

7:30 a.m. PSIV-A-4 **Effect of late gestational nutrient restriction on locomotor activity of beef heifers**

Mattie T. DeHaven¹, Colby A. Redifer¹, Abigail R. Rathert-Williams², Allison M. Meyer³
¹University of Missouri, ²Division of Animal Sciences, College of Agriculture, Food and Natural Resources, University of Missouri, ³Division of Animal Sciences, University of Missouri

7:30 a.m. PSIV-A-5 **Effect of roughage inclusion in limit-fed cow rations on behavior, cow hygiene, and manure scores**

Meg Fowler¹, Brayden Freeman¹, Kylie P. Ewing¹, W. Travis T. Meter¹, Wesley P. Chapple¹, Joshua C. McCann², Daniel W. Shike²
¹University of Illinois at Urbana-Champaign, ²University of Illinois Urbana-Champaign

7:30 a.m. PSIV-A-6 **Effects of a yeast cell wall additive on the growth performance and fecal *Eimeria* load of finishing lambs**

Kristen Kahler¹, Payton L. Dahmer¹
¹Kansas State University

7:30 a.m. PSIV-A-7 **Effects of late gestational nutrient restriction of beef heifers on small intestinal crypt depth in neonatal calves**

Samuel G. Bradshaw¹, Abigail R. Rathert-Williams², Colby A. Redifer¹, Allison M. Meyer³
¹University of Missouri, ²Division of Animal Sciences, College of Agriculture, Food and Natural Resources, University of Missouri, ³Division of Animal Sciences, University of Missouri

7:30 a.m. PSIV-A-8 **Effects of meal frequency on heart rate in horses**

Alora V. Brown¹, Elizabeth R. Share¹, Nettie Liburt², Jessica K. Suagee Bedore³, Patricia Harris⁴, Sara L. Mastellar⁵
¹The Ohio State University, ²Mars Petcare, ³Virginia Tech School of Animal Sciences, ⁴Waltham Petcare Science Institute, ⁵Ohio State University Agricultural Technical Institute

7:30 a.m. PSIV-A-9 **Effects of non-nutritive sweeteners on growth performance and diarrhea of weaned pigs**

Mariah Jansen¹, Veronica I. Polniak¹, Andrea M. Luttman¹, Riley Barber¹, Delani Stull¹, Dale W. Rozeboom¹, Kwangwook Kim²
¹Michigan State University, ²Michigan State university

7:30 a.m. PSIV-A-10 **Pilot study: acute changes in mare milk composition in response to concentrate feeding**

Carlee Oberlin¹, Savea Zimmerman-Cameron¹, Morgan Pyles¹, Izabell H. Gerbracht¹
¹University of Minnesota Crookston

7:30 a.m. PSIV-A-12 **Ruminal in vitro digestibility of novel pennycress meal using the Daisy II incubator**

Alyssa Brown¹, Emma G. Prybylski¹, Lauren Neuleib², Joshua C. McCann³, Nicholas Heller², Jennifer E. Earing²
¹University of Illinois at Urbana-Champaign, ²Illinois State University, ³University of Illinois Urbana-Champaign

7:30 a.m. PSIV-A-13 **The relationship between breed-wide expected progeny differences, genomic predictors, and phenotypic values in mature Angus cows**

Jacy Riddle¹, Amanda Holder¹

¹College of the Ozarks

Poster Session IV

7:45 AM - 8:30 AM

Grand Terrace

7:45 a.m. PSIV-14 **Assessing sow and suckling pig hemoglobin status in a single lactation following one or two iron supplementations of piglets in a commercial farm**

Aryeri S. Bardales¹, Casey L. Bradley², Crystal L. Levesque¹

¹South Dakota State University, ²Sunswine Group

7:45 a.m. PSIV-17 **Effects of butyryl-based additive supplementation on nursery pig performance, fecal dry matter, serum cytokines, short chain fatty acid production, and serum chemistry**

Ethan B. Stas¹, Jason C. Woodworth¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University

7:45 a.m. PSIV-15 **Effects of dietary supplementation of carbohydrase on growth performance and health status of growing-finishing pigs**

Woong Bi Kwon¹, Steve J. England¹, Greg Hartsook¹, Pornpim Aparachita¹, Kevin Soltwedel¹, Robert Fischer¹, Fredrik Sandberg¹

¹Furst-McNess Company

7:45 a.m. PSIV-19 **Effects of Flavolac feed top dress in lactation on sow body weight change and litter performance**

Rafe Q. Royall¹, Karley Stephens², Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Analia Ribeiro da Silva³, Kyle Coble⁴, Jimmy Karl⁴, Paul Corns⁴, Tag Bradley⁴

¹Kansas State University, ²Texas Tech University, ³Agrocerec Multimix, ⁴JBS Live Pork

7:45 a.m. PSIV-18 **Evaluation of lactose level and whey permeate form on nursery pig performance**

Ethan B. Stas¹, Jason Frank², Tingting Wang², Joel M. DeRouchey¹, Mike D. Tokach¹, Jason C. Woodworth¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University, ²International Ingredients Corporation

7:45 a.m. PSIV-20 **Evaluation of pectinase on nursery pig performance**

Mitchell J. Nisley¹, Nicholas K. Gabler¹, Erik Vanderbeke², David Nolan²

¹Iowa State University, ²Huvepharma

7:45 a.m. PSIV-16 **Evaluation of specialty soybean products and organic acids to alter nursery diet acid-binding capacity-4 on pig performance and fecal dry matter**

Ethan B. Stas¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University

7:45 a.m. PSIV-21 **Ileal digestibility of amino acids in feed ingredients for 22-, 56-, and 87-kilogram pigs**

Jung Y. Sung¹, Sun Jong Yoo², Beob Gyun Kim²

¹Purdue University, ²Konkuk University

7:45 a.m. PSIV-11 **Potential of black soldier fly (*Hermetia illucens*) larvae frass as a functional ingredient for nursery pigs**

Sarah Rubio¹, Izadora B. Kuneff², Fernando Soler², Charmaine Espinosa³, Liz Koutsos³, Eric van Heugten²

¹Zamorano Pan-American Agricultural School and Department of Animal Science, North Carolina State University, ²North Carolina State University, ³EnviroFlight LLC

Nonruminant Nutrition IV - Digestibility

Chair: Jinsu Hong, University of Minnesota

8:00 AM - 10:15 AM

Meeting Room M-N-Q-R

8:00 a.m. 153 **Standardized ileal digestibility of amino acids and concentration of metabolizable energy in three sources of corn protein fed to weanling pigs**

Nelson C. Ruiz-Arias¹, Su A Lee¹, Hans H. Stein¹

¹University of Illinois at Urbana-Champaign

8:15 a.m. 154 **Reduction of particle size of field peas increases net energy and digestibility of starch when fed to growing pigs**

Jimena A. Ibagón¹, Su A Lee¹, Hans H. Stein¹, C. Martin Nyachoti²

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

8:30 a.m. 155 **Standardized ileal digestibility of amino acids in soybean meal, fermented soybean meal, and soy protein concentrate fed to nursery pigs**

Yoon Soo Song¹, Beob Gyun Kim¹

¹Konkuk University

8:45 a.m. 156 **Growth performance, energy, and nutrient digestibility of nursery pigs fed high-shear dry extruded corn and soy meal**

Thomas A. Crome¹, Nicholas K. Gabler¹

¹Iowa State University

9:00 a.m. 157 **Effects of increasing dietary protein concentration on digestibility of amino acids by growing pigs**

Su A Lee¹, Hans H. Stein¹

¹University of Illinois at Urbana-Champaign

9:15 a.m. 158 **Nutrient digestibility in growing pigs fed a corn distillers dried grains with soluble (cDDGS)-based diet with multi-enzyme supplementation**

Joseph Halbur¹, Jinsu Hong², Sara Llamas-Moya³, Tri Duong³, Mark J. Bertram⁴, Amy L. Petry⁵, Eric Weaver¹

¹South Dakota State University, ²University of Minnesota, ³Kerry Inc., ⁴First Choice Livestock, ⁵University of Missouri, Division of Animal Science

9:30 a.m. 159 **Concentrations of energy in pistachio shell powder fed to gestating sows and lactating sows**

Yeonwoo Kim¹, Su A Lee², Hans H. Stein²

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

9:45 a.m. 160 **Awardee Talk: Impact of indigestible protein on coccidiosis and meat and bone meal autoclaving time-related reduction in amino acid digestibility for broiler chickens and growing pigs**

Jung Y. Sung¹, Darryl Ragland¹, Markus K. Wiltafsky-Martin², Olayiwola Adeola¹

¹Purdue University, ²Evonik Operations

Growth, Development, Muscle Biology and Meat Science

Chair: Bailey Harsh, University of Illinois Urbana-Champaign

8:00 AM - 10:45 AM

Hall of Ideas F/I

8:00 a.m. 125 **Effects of Saccharmyces yeast postbiotics on nurse pig Muscle fiber cross-sectional area and oxidative capacity**

Daniela A. Alambarrio¹, Mathew A. Vaughn², Sung Woo Kim³, John M. Gonzalez¹

¹University of Georgia, ²Puretein Bioscience, ³North Carolina State University

8:15 a.m. 126 **A nutritional solution based on calcidiol (25-OH-D3, HyD®) and triterpenoids affects muscle protein synthesis pathways in grower-finisher pigs**

Laura Payling¹, Luis F Romero¹, Ursula M. McCormack², Maria C Walsh², Laurent Roger², Estefania Perez Calvo²

¹Biofractal, ²dsm-firmenich

8:30 a.m. 127 **Utilizing predictive models for bone mineral content and bone mineral density as a tool to assess dietary phosphorous**

William E. Taylor¹, Thomas A. Crome¹, Grace C. McKibben¹, Jason W. Ross¹, Steven M. Lonergan¹, Juan P. Steibel², Nicholas K. Gabler¹

¹Iowa State University, ²ISU

8:45 a.m. 128 **Effects of dietary hybrid rye on quality and consumer acceptability of pork from pigs raised under organic conditions**

Megan Kavanagh¹, Gabriella Lima¹, Adrienne Hilbrands², Ryan Cox³, Lee J. Johnston², Yuzhi Li²

¹Department of Animal Science, University of Minnesota, ²West Central Research and Outreach Center, University of Minnesota, ³University of Minnesota

9:00 a.m. 129 **Evaluating effects of myostatin loss-of-function mutation on piglets for potential causes of early mortality**

Elli S. Burris¹, Anna C. Dilger²

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

9:15 a.m. **Growth, Development, Muscle Biology and Meat Science Break**

9:30 a.m. 130 **Parity affects mammary development in late-pregnant swine**

Chantal Farmer¹, Jakob C. Johannsen², Caroline Gillies³, Lee-Anne Huber³, Russell C. Hovey⁴

¹Agriculture and Agri-Food Canada, ²Aarhus University, Dept. of Animal and Veterinary Sciences, ³University of Guelph - Department of Animal Biosciences (OAC), ⁴University of California, Davis

9:45 a.m. 131 **DNA methylation profile in bovine fetal liver is affected by maternal vitamin and mineral supplementation during early gestation**

Muhammad Anas¹, Alison K. Ward², Kacie L. McCarthy³, Pawel P. P. Borowicz⁴, Lawrence P. P. Reynolds⁴, Joel S. S. Caton⁴, Carl R. Dahlen⁴, Wellison J. S. j. Diniz⁵

¹NDSU, ²University of Saskatchewan, ³University of Nebraska - Lincoln, ⁴North Dakota State University, ⁵Auburn University

10:00 a.m. 132 **Carcass merit, primal cutout, and retail yield of Holstein and Holstein x SimAngus finished calves.**

Teagan Schnurbusch¹, Zachary D. Callahan¹, Amy L. Petry², Bryon R. Wiegand¹

¹University of Missouri, ²University of Missouri, Division of Animal Science

10:15 a.m. 133 **The effect of sire lines and endpoint cooking temperature on consumer eating experience and visual appeal in pork loin chops**

Jonathan J. McDonald¹, Brandon Fields², Bailey Harsh¹, Anna C. Dilger¹

¹University of Illinois Urbana-Champaign, ²PIC

10:30 a.m. 134 **Does inclusion of high oleic soybeans in a swine finishing ration influence lipid oxidation and Consumer taste panel preference?**

Natalie Acosta Castellanos¹, Robert Maddock², Robert C. Thaler³, Jennifer M. Young¹, Shane Mueller⁴, Kim Koch⁴, Eric P. Berg¹

¹North Dakota State University, ²American Meat Science association, ³South Dakota State University, ⁴Northern Crops Institute

Harlan Ritchie Symposium - Sponsored by Harlan D. Ritchie Appreciation Club

Chair: Allison Meyer, University of Missouri

8:30 AM - 11:15 AM

Ballroom B

8:30 a.m. **Harlan Ritchie Symposium Introduction**

8:45 a.m. 309 **How do cover crops fit into beef production in a changing climate?**

Mary Drownoski¹

¹University of Nebraska

9:30 a.m. 310 **Can emerging technology improve beef cattle production in ways we never envisioned?**

Jason Nickell ¹

¹Allflex Livestock Intelligence

10:15 a.m. **Harlan Ritchie Symposium Break**

10:30 a.m. 311 **High quality beef: How did we get to this level of production?**

Daniel D. Loy ¹, Randie Culbertson ¹

¹Iowa State University

Animal Behavior, Health and Well-Being Symposium

Chair: Stephanie Wetter, The National Pork Board

8:00 AM - 11:30 AM

Hall of Ideas E/H

8:00 a.m. **Animal Behavior, Health and Well-Being Symposium Introduction**

8:05 a.m. 303 **What's next for animal welfare from a legal perspective?**

Elizabeth Rumley ¹

¹University of Arkansas

8:45 a.m. 304 **What does Prop 12 mean for the swine industry**

Kristina Horback ¹

¹University of California, Davis

9:25 a.m. **Animal Behavior, Health and Well-Being Symposium Break**

9:40 a.m. 305 **Prop 12 has passed: What does that mean for sustainability?**

John Scott Radcliffe ¹

¹University of Kentucky

10:20 a.m. 302 **Prop 12 passed: What research do swine producers need next?**

Liz Wagstrom ¹

¹Wagstrom Consulting, LLC

11:00 a.m. **Animal Behavior, Health and Well-Being Symposium Q&A**

Nonruminant Nutrition V - Nursery I

Chair: Omarh Mendoza, The Maschhoffs, LLC; Chad Pilcher, Cargill

8:00 AM - 11:30 AM

Hall of Ideas G/J

8:00 a.m. **Maxwell Lecture Introduction**

Crystal L. Levesque ¹

¹South Dakota State University

8:00 a.m. 301 **Maxwell Lecture: Bacillus probiotics in nursery pigs: The effects of dose on gut health and performance**

Young Dal Jang ¹

¹University of Georgia

8:30 a.m. 137 **Impact of dietary soybean-mediated trypsin inhibitor concentrations on nursery pig performance**

Mitchell J. Nisley ¹, Joel D. Spencer ², Omarh F. Mendoza ³, Hari B. Krishnan ⁴, Kayla A. Miller ¹, Nicholas K. Gabler ¹

¹Iowa State University, ²United Animal Health, ³The Maschhoffs, LLC, ⁴USDA

8:45 a.m. 138 **Growth performance and physiological response of nursery pigs fed a high canola meal diet with acidifiers**

Katlyn A. McClellan ¹, Jorge Y. Perez-Palencia ¹, Eric Weaver ¹, Crystal L. Levesque ¹, Jinsu Hong ²

¹South Dakota State University, ²University of Minnesota

9:00 a.m. 139 **Effect of dietary crude protein concentration and sensory feed additive on nursery pig growth performance**

Kara Pounds ¹, Brian T. Richert ¹, Taw Scaff ¹, Alexandra Fisk ¹, Mekenzie R. Cecil ¹, Emily Otto-Tice ², Allan P. Schinckel ¹

¹Purdue University, ²Lucta

9:15 a.m. 140 **Response of 6 to 13 kg nursery pigs to increasing SID Arg:Lys**

Dalton C. Humphrey ¹, Margaret Putnam ¹, Chloe S. Hagen ¹, Caitlyn Wileman ¹, Keith D. Haydon ², Laura L. Greiner ¹

¹Iowa State University, ²CJ Bio America

9:30 a.m. **Nonruminant Nutrition V - Nursery I Break**

9:45 a.m. 141 **Determination of the optimum standardized ileal digestible lysine for nursery pigs fed high levels of dietary fiber**

Morgan Hart ¹, Henrique S. Cemin ¹, Jose A. Soto ², Sharlie A. Hansen ¹, Ernie L. Hansen ¹

¹Hubbard Feeds, ²Alltech

10:00 a.m. 142 **Evaluation of low SID lysine diets fed to enteric health challenged pigs on wean-to-finish performance**

Kayla A. Miller ¹, Omarh F. Mendoza ², Caleb M. Shull ², Eric R. Burrough ¹, Nicholas K. Gabler ¹

¹Iowa State University, ²The Maschhoffs, LLC

10:15 a.m. 143 **Effect of increasing dietary net energy content at a constant lysine on feed intake and performance of 7- to 11-kg and 11- to 20-kg pigs**

John K. Htoo ¹, S. María S. Mendoza ², Joaquin Morales ³

¹Evonik Operations GmbH, ²Evonik Corporation, ³Animal Data Analytics

10:30 a.m. 144 **Bioavailability of calcium salt of hydroxy analogue of methionine relative to DL-methionine to support growth performance of 11- to 20-kg pigs**

Balachandar Jayaraman¹, Joaquin Morales², Maria Rodriguez², John K. Htoo¹

¹Evonik Operations GmbH, ²Animal Data Analytics

10:45 a.m. 145 **Performance, postweaning diarrhea, and apparent total tract nutrient digestibility responses of weanling pigs to nucleotide supplementation of low-protein diets**

Abiola S. Lawal¹, Tobi Z. Ogunribido¹, Yuechi Fu¹, Olayiwola Adeola¹, Kolapo M. Ajuwon¹

¹Purdue University

11:00 a.m. 135 **Effects of altering diet acid-binding capacity-4 (ABC-4) with specialty soy protein sources or acidifiers on nursery pig performance and fecal dry matter**

Ethan B. Stas¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University

11:15 a.m. 136 **Effects of acid-binding capacity in low-zinc diets on growth performance of weaned pigs**

Jose Landero¹, L.F. Wang², Lingjun Zhu², Jon R. Bergstrom³, Malachy Young¹, Ruurd T. Zijlstra²

¹Gowans Feed Consulting, ²University of Alberta, ³dsm-firmenich

Billy Day Symposium - Sponsored by Billy N. Day Appreciation Club

Chair: Timothy Safranski, University of Missouri

8:00 AM - 11:45 AM

Ballroom C

8:00 a.m. **Billy Day Symposium Introduction**

8:05 a.m. 115 **Gene editing: Where are we on campus and where can it go?**

Randall S. Prather¹

¹University of Missouri

8:35 a.m. 116 **Gene editing: How are we thinking about it?**

Tom Rathje¹

¹DNA Genetics LLC

9:05 a.m. 117 **Gene editing on the farm: Current status and future prospects**

Benjamin Beaton¹

¹Genus R&D

9:35 a.m. **Billy Day Symposium Break**

9:55 a.m. 118 **Gene editing: A European perspective**

Maria Antonia Gil¹

¹University of Murcia

10:25 a.m. **Bentley Lecture Introduction**

Laura L. Greiner¹

¹Iowa State University

10:30 a.m. 119 **Bentley Lecture: Gene editing: A Japanese perspective**

Hiroaki Funahashi¹

¹Okayama University

11:00 a.m. 120 **Gene editing: From the general public perspective**

Alison L. Van Eenennaam¹

¹University of California, Davis

11:30 a.m. **Billy Day Symposium Q&A**

Nonruminant Nutrition Symposium I

Chair: Richard Faris, Cargill; Jorge Perez-Palencia, South Dakota State University

8:00 AM - 11:45 AM

Ballroom A

8:00 a.m. **Nonruminant Nutrition Symposium I Introduction**

8:05 a.m. 106 **Net energy of soybean meal**

Hans H. Stein¹

¹University of Illinois at Urbana-Champaign

8:35 a.m. 107 **Soybean meal energy value under field conditions: where are we at and where are we going?**

Henrique S. Cemin¹, Jose A. Soto², Ernie L. Hansen¹, Mike D. Tokach³

¹Hubbard Feeds, ²Alltech, ³Kansas State University

9:05 a.m. 108 **Estimating net energy of soybean meal for 47 to 110 kg growing pigs using a growth assay**

JIYAO GUO¹, Apichat Wantanasak², Fengrui Zhang², Taiji Wang², Gary Stoner²

¹CP Group China, ²CP Group

9:20 a.m. 109 **Evaluation of net energy, standardized ileal digestible lysine, and soybean meal content interaction in 13 to 25 kg pigs using a central composite design**

Hilario M. Cordoba¹, Mike D. Tokach¹, Jason C. Woodworth¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Henrique S. Cemin², Jose A. Soto³

¹Kansas State University, ²Hubbard Feeds, ³Alltech

9:35 a.m. 110 **Effects of increasing levels of soybean meal in nursery diets on growth performance and fecal dry matter of 10- to 25-kg pigs**

Jamil Faccin¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹

¹Kansas State University

9:50 a.m. **Nonruminant Nutrition Symposium I Break**

10:05 a.m. 111 **Current and future usage of soybean meal in swine diets in China**

Shuai Zhang¹, Junjun Wang¹, Defa Li¹

¹China Agricultural University

10:35 a.m. 112 **Nutritional, feed safety, and environmental benefits and limitations of using soybean co-products in swine diets**

Zhaohui Yang¹, Pedro E. Urriola², Gerald C. Shurson³

¹Nutribins, ²University of Minnesota College of Food, Agricultural and Natural Resource Sciences, ³University of Minnesota

11:05 a.m. 113 **Evaluation of high soybean meal diets with inclusion of dietary enzymes on the effect of growth performance and greenhouse gas emissions**

Caitlyn Wileman¹, Dalton C. Humphrey¹, Kenwood Scoggin², Steven L. Trabue³, Jon R. Bergstrom⁴, Estefania Perez-Calvo⁵, Laura L. Greiner¹

¹Iowa State University, ²Digital Agronomy, LLC, ³USDA ARS, ⁴dsm-firmenich, ⁵DSM-Firmenich

11:20 a.m. 114 **Effects of higher levels of soy protein and methionine on periparturient health of sows**

Lauren Olson¹, Moul Dey¹, Eric Weaver¹

¹South Dakota State University

Ruminant Nutrition II

Chair: Kendall Swanson, North Dakota State University

8:30 AM - 9:45 AM

Meeting Room K-O-L-P

8:30 a.m. 161 **Effect of replacement of dried distillers grains plus solubles with increasing extruded and expelled soybean meal on feedlot performance and carcass characteristics in finishing steers**

Becca B. Grimes Francis¹, Justin J. Delver², Forest L. Francis², Erin R. DeHaan², Thiago L. Maia Ribeiro², Cassidy R. Ross², Warren C. Rusche², Zachary K. Smith²

¹Animal Science/ South Dakota State University, ²South Dakota State University

8:45 a.m. 162 **Effect of molasses-based liquid supplement vs. corn-based dry supplement on beef cattle feedlot performance, carcass characteristics, and intestinal length**

Lester Nolasco¹, Tyler J. Vincent¹, Howard M. Blalock², Jon P. Schoonmaker¹

¹Purdue University, ²Quality Liquid Feeds

9:00 a.m. 163 **Impact of feeding wet or dry traditional or fractionated (Solbran®) distillers grains on feedlot cattle performance and carcass characteristics**

Debora Gomes Sousa¹, Rebecca L. McDermott², Mitch M. Norman², James C. MacDonald², Rick A. Stock², Rayan Mass³, Galen E. Erickson²

¹University of Nebraska–Lincoln, ²University of Nebraska–Lincoln, ³ICM

9:15 a.m. 164 **Impact of varying dietary inclusion of modified distillers grains plus solubles weekly compared to constant inclusion on feedlot cattle performance and carcass characteristics**

Debora Gomes Sousa ¹, Rebecca L. McDermott ², Mitch M. Norman ², James C. MacDonald ², Rick A. Stock ², Galen E. Erickson ²

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

9:30 a.m. 165 **Comparing corn earlage to a blend of corn silage and grain when fed at two different inclusions for finishing cattle**

Garrett Lemon ¹, Rebecca L. McDermott ¹, Galen E. Erickson ¹, Pablo L. Loza ¹

¹University of Nebraska-Lincoln

Genetics, Genomics and Bioinformatics Symposium

Chair: Michael Gonda, South Dakota State University

9:00 AM - 11:30 AM

Ballroom D

9:00 a.m. **Genetics, Genomics and Bioinformatics Symposium Introduction**

9:05 a.m. 121 **Evaluation of sensing technologies as indicator traits for feed intake in dairy cattle**

James E. Koltes ¹

¹Iowa State University

9:35 a.m. 122 **Automated animal biometrics acquisition for improved breeding**

Isabella C F S Condotta ¹

¹University of Illinois at Urbana-Champaign

10:05 a.m. **Genetics, Genomics and Bioinformatics Symposium Break**

10:20 a.m. 123 **Phenomics enabled quantitative genetic modeling of complex traits**

Gota Morota ¹

¹Virginia Tech

10:50 a.m. 124 **Artificial Intelligence for high-throughput phenotyping and farm management**

Joao R. R. Dórea ¹

¹University of Wisconsin

Nonruminant Nutrition VI - Mycotoxins and Models

Chair: Molly McGhee, Cargill

10:00 AM - 11:45 AM

Meeting Room K-O-L-P

10:00 a.m. 146 **Comparing feeding strategies during heat stress in finishing pigs using a stochastic swine model**

Noud Aldenhoven¹, Neil W. Jaworski¹, Nestor A. Gutierrez¹, Neil S. Ferguson¹

¹Trouw Nutrition Innovation

10:15 a.m. 147 **The interaction between growth and immunity: Insights into the immune response of finisher pigs with divergent feed efficiency**

Laura Payling¹, Luis F Romero¹

¹Biofractal

10:30 a.m. 148 **Evaluating water characteristics and their effects on reducing water pH using citric acid**

Maxwell L. Corso¹, Jason C. Woodworth², Mike D. Tokach², Jordan T. Gebhardt², Joel M. DeRouchey², Robert D. Goodband²

¹Kansas State University Applied Swine Nutrition, ²Kansas State University

10:45 a.m. 149 **Development of a leaky gut model: Impact of 24-hour feed restriction on ileal expression of tight junction proteins in weaned pigs**

Sarah E. Schuling¹, Megan N. Engeseth¹, Sue M. Knudtson¹, Ran Song¹, Dan E. Schimek¹

¹NutriQuest

11:00 a.m. 150 **Development of a leaky gut model: Meta-analysis of plasma and fecal markers of leaky gut**

Sarah E. Schuling¹, Megan N. Engeseth¹, Sue M. Knudtson¹, Ran Song¹, Dan E. Schimek¹

¹NutriQuest

11:15 a.m. 151 **Use of a clay and algae-based decontaminant on sows naturally exposed to mycotoxins in gestation and lactation**

Marie Gallissot¹, Jeremy Perez², Eric Parr², Michael Welch², Paul Olsen³, Maria Rodriguez¹

¹Olmix Group, ²Carthage Innovative Swine Solutions, ³Olmix NA

11:30 a.m. 152 **Reducing the bioavailability of a mix of mycotoxins in broiler chickens with a clay- and algae-based decontaminant**

Marie Gallissot¹, Sofie Rutjens², Maria Rodriguez¹, Mathias Devreese³

¹Olmix Group, ²Ghent University, Faculty of Veterinary Medicine, ³Ghent University

Equine Translational Symposium - Sponsored by Pack Pride Racing, LLC

Chair: Michelle DeBoer, University of Wisconsin–River Falls

10:30 AM - 1:00 PM

Meeting Room M-N-Q-R

10:30 a.m. **Equine Translational Symposium Introduction**

10:35 a.m. 299 **Building and maintaining an engaged undergraduate equine research team**

W. Burton Staniar ¹

¹Pennsylvania State University

11:20 a.m. 300 **A microbial perspective on equine nutrition**

Amy S. Biddle ¹

¹University of Delaware

12:05 p.m. 312 **Invited Speaker Dr. Katie Young**

Katie Young ¹

¹Kentucky Equine Research (KER)

Poster Session V

11:45 AM - 12:30 PM

Grand Terrace

11:45 a.m. PSV-7 ***greatOPlus* (extruded blend of flaxseed and *Nannochloropsis oculata* biomass) Improves Finishing Cattle Performance and Carcass Characteristics**

Firman Nasiu ¹, Luis F B B Feitoza ¹, Adrian N. Baker ¹, Ross L. Thorn ¹, Ludmila S.

Monteiro ¹, James S. S. Drouillard ¹

¹Kansas State University

11:45 a.m. PSV-1 **A comparison of Holstein-cross cattle and beef-cross cattle in terms of performance and carcass quality**

Deedra M. Winebold ¹, Rebecca L. Tollefson ¹, Claire Deaton ¹, Adam King ¹, Riley Case ¹,

Joel Robertson ¹, Emily R. Church ¹, Amanda Holder ¹

¹College of the Ozarks

11:45 a.m. PSV-14 **Determination of optimal digestible phosphorus level in lactating sows**

Qiong Hu ¹, Junmei Zhao ¹, Stephanie Walston ¹

¹Cargill

11:45 a.m. PSV-8 **Development of genetically engineered microbes as probiotics to enhance ruminant productivity**

Tien Doan ¹, Alison C. Neujahr ¹, Samodha C. Fernando ¹

¹University of Nebraska–Lincoln

11:45 a.m. PSV-2 **Digestible indispensable amino acid scores (DIAAS) in pork products**

Juliana Carolina Florencio Ravagnani Martins ¹, Natalia Dos Santos Fanelli ¹, Hans H. Stein ¹

¹University of Illinois at Urbana-Champaign

11:45 a.m. PSV-15 **Effect of functional amino acids and fiber on growth performance of post-weaning pigs**

Caroline Gonzalez Vega ¹, Stephanie Walston ¹, Sabrina May ¹, Qiong Hu ¹, Richard Faris ¹

¹Cargill

11:45 a.m. PSV-16 **Effect of precision feeding and functional amino acids on immune response and protein metabolism of growing pigs raised in poor sanitary conditions**

Pedro Righetti Arnaut ¹, Aline Remus ², Candido Pomar ², Luciano Hauschild ¹

¹São Paulo State University - School of Agricultural and Veterinary Sciences,, ²AAFC

11:45 a.m. PSV-9 **Effects of increasing amounts of high-oleic or conventional soybeans in diets fed to mid-lactation dairy cows on measures of dry matter intake and lactation**

Tiffany Hagemann ¹, Emily A. Petzel ¹, Eric Bailey ¹, Derek W. Brake ¹

¹University of Missouri

11:45 a.m. PSV-3 **Effects of maternal early gestational weight gain on multigenerational skeletal muscle gene regulation in offspring**

German D. D. Ramirez-Zamudio ¹, Carl R. Dahlen ², Friederike Baumgaertner ², Ana Clara B. Menezes ², Jennifer L. Hurlbert ², Kerri A. Bochantin ², Sarah R. R. Underdahl ², Kacie L. McCarthy ², Lawrence P. P. Reynolds ², Alison Ward ², Pawel P. P. Borowicz ², Kevin K. Sedivec ³, Joel S. S. Caton ², Wellison J. S. j. Diniz ⁴

¹University of São Paulo/North Dakota State University, ²North Dakota State University, ³NDSU, ⁴Auburn University

11:45 a.m. PSV-10 **Evaluation of the effect of probiotic feed additives in the diet to improve dairy production and quality measures**

Riley Case ¹, Amanda Holder ¹, Ryan Bilyeu ¹

¹College of the Ozarks

11:45 a.m. PSV-4 **Exposure to prenatal tributyrin improved pre-weaning growth performance and reduced fat deposition in the muscle of market age pigs**

Elizabeth Cooper ¹, Robert Murray ², Rousset Palou ¹, Grace I. Markley ¹, Chad H. Stahl ¹

¹University of Maryland, College Park, ²University of Maryland

11:45 a.m. PSV-17 **Glycerol monolaurate improves litter performance and modifies milk composition when fed to lactating sows**

Chad Risley ¹, Johnny Lopez ¹, Christian Cordts ², Fiona von Brandestein ²

¹Berg+Schmidt America, LLC, ²Berg+Schmidt GmbH & Co KG

11:45 a.m. PSV-19 **Impact of precision feeding and bump feeding strategy during gestation on the performance of post-weaning pigs**

Carole Pierre ¹, Laetitia Cloutier ², Lucie Galiot ², Frédéric Guay ¹

¹Laval University, ²Centre de développement du porc du Québec

11:45 a.m. PSV-18 **Improved performance of PRRSV challenged pigs fed 1- α -glycerol monolaurate**

Chad Risley ¹, Johnny Lopez ¹, Christian Cordts ²

¹Berg+Schmidt America, LLC, ²Berg+Schmidt GmbH & Co KG

11:45 a.m. PSV-11 **In vitro screening of selected compounds to reduce ruminal methane production**

Alice H. Peres Assumpcao ¹, Hilário C. Cuquetto Mantovani ², Xia Zhu-Barker ¹

¹University of Wisconsin–Madison, ²Department of Animal and Dairy Science, University of Wisconsin-Madison, Madison, WI, USA

11:45 a.m. PSV-5 **Influence of an oregano-based essential oil on growth performance and carcass traits of beef steers**

Bergin M. DeBruin ¹, Christina Bakker ¹, Zachary K. Smith ¹, Keith Underwood ¹, Judson K. Grubbs ¹, Amanda Blair ¹, Warren C. Rusche ¹

¹South Dakota State University

11:45 a.m. PSV-12 **Microbial community structure of dairy cattle is stable through oscillating crude protein inclusion**

Fiorella L. Viquez-Umana ¹, Mary Grace Erickson ², Geoffrey Zanton ², Michel Wattiaux ², Garret Suen ², Hilário C. Cuquetto Mantovani ¹

¹Department of Animal and Dairy Science, University of Wisconsin-Madison, Madison, WI, USA, ²University of Wisconsin–Madison

11:45 a.m. PSV-20 **Mycotoxin contamination trends in United States corn grain: 2019-2023**

Paige N. Gott ¹, Lan Zheng ¹, Shelby Corray ¹, Chasity Pender ¹, Sara Hough ², April Levy ¹

¹dsm-firmenich, ²dsm-firmenich, Animal Nutrition & Health

11:45 a.m. PSV-21 **Pediococcus acidilactici survives an in vitro simulated digestion**

Rebecca Brown ¹, Rui Zheng ², Sheila K. Jacobi ¹

¹The Ohio State University, ²Ohio State University

11:45 a.m. PSV-6 **The additive effect of hormonal implant and inclusion of beta-agonists in carcass quality in beef cattle**

Rebecca L. Tollefson ¹, Deedra M. Winebold ¹, Claire Deaton ¹, Adam King ¹, Riley Case ¹, Joel Robertson ¹, Emily R. Church ¹, Amanda Holder ¹

¹College of the Ozarks

11:45 a.m. PSV-13 **The influence of diet type on beef cattle performance and meat quality characteristics**

Claire Deaton¹, Rebecca L. Tollefson¹, Adam King¹, Riley Case¹, Joel Robertson¹, Emily R. Church¹, Amanda Holder¹

¹College of the Ozarks

Poster Session VI

12:45 PM - 1:30 PM

Grand Terrace

12:45 p.m. PSVI-7 **A traceable signature for a recovery microbiome composition after a dysbiosis caused by a sanitary challenge in pigs**

Antônio Diego Brandão Brandão Melo¹, Graziela Alves da Cunha Valini², João Carlos Gomes-Neto³, Marllon José Karpeggiane de Oliveira⁴, Danilo Alves Marçal¹, Pedro Righetti Arnaut¹, Ismael França¹, Nate Korth³, Natasha Pavlovikj⁵, John K. Htoo⁶, Henrique Gastmann Gastmann Brand⁷, Andrew K. Benson³, Luciano Hauschild¹

¹São Paulo State University - School of Agricultural and Veterinary Sciences, ²AAFC and UNESP, ³University of Nebraska, Lincoln, NE, USA. Nebraska Food for Health Center, University of Nebraska, Lincoln, NE, USA., ⁴School of Agricultural and Veterinarian Sciences, Universidade Estadual Paulista (Unesp), São Paulo, Jaboticabal, Brazil, 14884-900., ⁵University of Nebraska–Lincoln, ⁶Evonik Operations GmbH, ⁷Evonik Brasil Ltda

12:45 p.m. PSVI-15 **Assessing the implications of a silymarin-enriched diet on the performance and blood absorption rate of broiler and laying hen**

Kye Jin Lee¹, Sungbo Cho¹, Sarbani Biswas¹, In Ho Kim¹

¹Dankook University

12:45 p.m. PSVI-1 **Backgrounding and finishing systems for cattle fed corn silages and corn grains differing in amylase expression**

Ludmila de Souza Monteiro¹, James S. S. Drouillard¹

¹Kansas State University

12:45 p.m. PSVI-14 **Changes in zinc oxide concentration in feed and effects of probiotic addition to weaning to finishing pig diet by microbiome analysis**

Sungbo Cho¹, Kye Jin Lee¹, Sarbani Biswas¹, In Ho Kim¹

¹Dankook University

12:45 p.m. PSVI-2 **Economic evaluation of forage-fed vs concentrate-fed beef finishing systems**

Joel Robertson¹, Rebecca L. Tollefson¹, Deedra M. Winebold¹, Claire Deaton¹, Adam King¹, Riley Case¹, Emily R. Church¹, Amanda Holder¹

¹College of the Ozarks

12:45 p.m. PSVI-8 **Effect of botanical extracts and calcium gluconate fed during lactation on sow and litter performance**

Chris P A van de Ligt¹, S. Nielsen², N. S. Tillman³, Emma H. Wall⁴

¹Selko USA, ²Eagle Estates, ³Nutritional Statistics LLC, ⁴Nutreco

12:45 p.m. PSVI-9 **Effect of botanical extracts in diets with nutritional or pharmacological levels of copper and zinc on growth performance and fecal dry matter in nursery pigs**

Ty Kim ¹, Jason C. Woodworth ¹, Mike D. Tokach ¹, Joel M. DeRouchey ¹, Robert D. Goodband ¹, Jordan T. Gebhardt ¹, Chris P A van de Ligt ², Emma H. Wall ³

¹Kansas State University, ²Selko USA, ³Nutreco

12:45 p.m. PSVI-10 **Effect of sulfate or hydroxychloride forms of zinc, manganese, and copper on growth performance, weight variation, and carcass characteristics of grow-finish pigs**

Hilario M. Cordoba ¹, Jason C. Woodworth ¹, Robert D. Goodband ¹, Joel M. DeRouchey ¹, Mike D. Tokach ¹, Jordan T. Gebhardt ¹, Chris P A van de Ligt ²

¹Kansas State University, ²Selko USA

12:45 p.m. PSVI-3 **Effects of dried distillers grains on performance of suckling beef calves in a creep-feeding system**

Ellem Maria De Almeida Matos ¹, Sebastiao De Campos Valadares Filho ², Gabriel Santos Souza David ³, Nathalia Veloso Tropaia ², Dhones Rodrigues de Andrade ², Julia Travassos da Silva ², Pauliane Pucetti ², Fernando Cidrini ⁴, Luiz Carlos Oliveira de Sousa ², Joel S. S. Caton ⁵

¹Universidade Federal de Vicosa, ²Universidade Federal de Viçosa, ³Department of Animal Science, Universidade Estadual Paulista "Júlio de Mesquita Filho" (UNESP), Jaboticabal, São Paulo, Brazil, ⁴School of Animal Sciences, Virginia Polytechnic Institute and State University, ⁵North Dakota State University

12:45 p.m. PSVI-4 **Effects of ruminal acidosis on rumen fermentation of steers adapted to a high concentrate diet**

Haley F. Linder ¹, Larry L. Berger ², Joshua C. McCann ¹

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

12:45 p.m. PSVI-11 **Effects of S-Abscisic Acid administration on the antioxidative status and glucose absorption in the gut of rats**

Izuru Shinzato ¹, Hiroshi Kojo ¹, Daisuke Matsui ¹, Tsuyoshi Tonoue ¹, Takamitsu Tsukahara ²

¹Sumitomo Chemical Co., Ltd., ²Kyoto Institute of Nutrition & Pathology, Inc.

12:45 p.m. PSVI-12 **Effects of sodium gluconate supplementation on growth performances of nursery piglets and growing pigs**

Daisuke Matsui ¹, Keiichiro Iwamae ², Tsuyoshi Tonoue ¹, Izuru Shinzato ¹

¹Sumitomo Chemical Co., Ltd., ²FUSO Corporation Co., LTD.

12:45 p.m. PSVI-5 **Extruded blend of *Nannochloropsis oculata* microalgae and flaxseed and its effects on ruminal fermentation and nutrient digestion**

Ross L. Thorn ¹, James S. S. Drouillard ¹

¹Kansas State University

12:45 p.m. PSVI-13 **Formulated botanical preparation improves passive immunity from sows to piglets**

Chris P A van de Ligt¹, S. Ravichandran², Emma H. Wall³

¹Selko USA, ²AVT Natural North America, ³Nutreco

12:45 p.m. PSVI-16 **Inclusion of dietary micelle silymarin on production performance, egg quality, storage capacity, and blood profile Sin Hy-line brown laying hens**

Kye Jin Lee¹, Sungbo Cho¹, Golam Sagir Ahammad¹, In Ho Kim¹

¹Dankook University

12:45 p.m. PSVI-17 **Inclusion of glutathione precursor to sows' diet from 114th of lactation through to weaning day 21 improves serum hormone levels and piglet performance**

Kye Jin Lee¹, Sungbo Cho¹, Sumaya Tanzin Wahid¹, In Ho Kim¹

¹Dankook University

12:45 p.m. PSVI-18 **Low and high feed efficiency grower-finisher pigs fed three different levels of dietary crude protein showed no immediate difference in blood metabolomics profile**

Marleen Elise van der Heide¹, Elham Assadi Soumeh², Mihai Curtasu¹, Jan Værum Nørgaard¹, Johannes Gulmann Madsen³

¹Aarhus University, ²University of Queensland, ³University of Copenhagen

12:45 p.m. PSVI-6 **Metabolic potential of three novel rumen bacterial species from sheep characterized by utilizing a metagenomic-based approach**

Reid F. Anema¹, Zachary K. Smith¹, Benoit St-Pierre¹

¹South Dakota State University

12:45 p.m. PSVI-19 **No apparent association between the microbiome in the distal part of the small intestine and feed efficiency in grower-finisher pigs fed three different levels of dietary crude protein**

Marleen Elise van der Heide¹, Nilay Büdeyri Gökgöz², Dennis Sandris Nielsen², Jan Værum Nørgaard¹, Johannes Gulmann Madsen²

¹Aarhus University, ²University of Copenhagen

12:45 p.m. PSVI-20 **The effect of a probiotic feed additive on average daily gain and feed intake**

Grady A. Privett¹, Benjamin Carpenter¹, Emily R. Church¹, Amanda Holder¹

¹College of the Ozarks

12:45 p.m. PSVI-21 **The effects of soybean meal concentration and *Yucca schidigera* extract supplementation on growth performance of nursery swine**

Jose A. Soto¹, Henrique S. Cemin², Morgan D. Hart³, Sharlie A. Hansen², Ernie L. Hansen²

¹Alltech, ²Hubbard Feeds, ³Hubbard Feed

Genetics, Genomics and Bioinformatics

1:15 PM - 3:00 PM

Hall of Ideas G/J

1:15 p.m. 225 **Genomic diversity of Katahdin sheep and impacts on genomic prediction**

Sara M. Nilson¹, Joan M. Burke², Gabrielle M. Becker³, Brenda M. Murdoch³, Jessica L. Petersen⁴, Ronald M. Lewis¹

¹University of Nebraska - Lincoln, ²USDA, ARS, Dale Bumpers Small Farms Research Center, ³University of Idaho, ⁴University of Nebraska-Lincoln

1:30 p.m. 226 **Oral and rumen microbiome characterization to predict host phenotypes**

Seidu Adams¹, Matthew L. Spangler¹, Samodha Fernando¹

¹University of Nebraska-Lincoln

1:45 p.m. 227 **Comparative analysis of rumen bacterial communities from bison heifers fed two forage-based diets of different quality**

Anlly M. Fresno Rueda¹, Benoit St-Pierre¹, Carter Kruse²

¹South Dakota State University, ²Turner Institute of Ecoagriculture

2:00 p.m. 228 **The effect of temperature-humidity index in different pregnancy stages on litter traits in Taiwan Landrace sows**

Kai-Hsiang Lin¹, Billy Flowers¹, Jicai Jiang², Mark Knauer¹, En-Chung Lin³

¹North Carolina State University, ²Department of Animal Science, North Carolina State University, ³National Taiwan University

2:15 p.m. 229 **Effects of sire line on survivability traits of commercial pigs sired by PIC@800 or a North American competitor Duroc Line from birth to market**

Isaiah T. Spath¹, Erin Little², Roy Edler², Luis E. Zaragoza¹, Michelle Wuebker¹, Matthew Spindler¹, Danielle Wilson-Wells¹

¹Genus PIC, ²Pipestone Research

2:30 p.m. 230 **Using phenotypes with uncertain identification leveraging computer vision models**

Mina Shumaly¹, Juan P. Steibel²

¹Iowa State University, ²ISU

2:45 p.m. 231 **Anomaly detection for breed purity analysis**

Xiaohan Jiang¹, Juan P. Steibel²

¹Iowa state university, ²ISU

Nonruminant Nutrition Symposium II - Sponsored by AB Vista

Chair: Spenser Becker, AB Vista

1:15 PM - 5:00 PM

Ballroom A

1:15 p.m. **Nonruminant Nutrition Symposium II Introduction**

1:20 p.m. 166 **Beyond solubility: Navigating the complex landscape of dietary fiber in swine digestion and physiology**

Amy L. Petry¹, Hannah Miller²

¹University of Missouri, Division of Animal Science, ²University of Missouri

1:50 p.m. 167 **The benefit and challenges of fiber in the nursery pig diet**

Nicholas K. Gabler¹

¹Iowa State University

2:20 p.m. 168 **Effects of feeding barley-based diets differing in fermentable starch and fiber on nutrient digestion and body composition in weaned pigs**

Joaquin J. Sanchez-Zannatta¹, L.F. Wang¹, Eduardo Beltranena¹, Aaron D. Beattie², Rex N. Newkirk², Ruurd T. Zijlstra¹

¹University of Alberta, ²University of Saskatchewan

2:35 p.m. 169 **The impact of corn-based fiber on intestinal morphology and disaccharidase activity in growing pigs**

Hannah Miller¹, Rachel Self¹, Cassidy Sasser², Amelia Balser², Rand R. Broadway³, Nicole C. Burdick Sanchez⁴, Jeff A. Carroll⁵, Michael Cruz Penn⁶, Amy L. Petry⁷

¹University of Missouri, ²Texas Tech University, ³Livestock Issues Research Unit, ⁴USDA-ARS, ⁵Livestock Issues Research Unit USDA, ⁶School of Veterinary Medicine, Texas Tech, ⁷University of Missouri, Division of Animal Science

2:50 p.m. **Nonruminant Nutrition Symposium II Break**

3:05 p.m. 170 **Feeding the modern sow: Unlocking the value of dietary fiber**

David S. Rosero¹

¹Iowa State University

3:35 p.m. 171 **Current limitations to implement fiber in U.S. sow and nursery diets; and nutritional strategies to support ideal fiber profile**

Laura A. Merriman¹

¹AB Vista

4:05 p.m. 172 **Effects of post-MSC DDGS inclusion in gestation diets on total tract nutrient and energy digestibility compared to other fiber sources**

Garrin Shipman¹, Jorge Y. Perez-Palencia¹, Jinsu Hong², Kevin J. Herrick³, Melissa L. Jolly-Breithaupt³, Crystal L. Levesque¹

¹South Dakota State University, ²University of Minnesota, ³POET Bioproducts

4:20 p.m. 173 **Assessing the impact of fiber and antioxidant supplementation during the periparturient period on gilt constipation, piglet viability, and body condition score**

Erick Fuentes Cardona ¹, Hannah Miller ¹, Rachel Self ¹, Ben Haberl ², Cesar A A Moura ², Spenser L. Becker ³, Pete Wilcock ³, Amy L. Petry ⁴

¹University of Missouri, ²Iowa Select, ³AB Vista, ⁴University of Missouri, Division of Animal Science

4:35 p.m. **Nonruminant Nutrition Symposium II Q&A**

Nonruminant Nutrition VII - Nutritional Strategies Under Health Challenge

Chair: Jorge Estrada, Carthage Veterinary Service

1:30 PM - 5:00 PM

Ballroom C

1:30 p.m. 307 **Awardee Talk: Effects of dietary valerate glycerides on weanling piglet diarrhea and immunity**

Lauren L. Kovanda ¹, Sofia Rengman ², Snehal Tawde ², Jeroen Pos ², Jungjae Park ¹, Sangwoo Park ¹, Kwangwook Kim ³, Yanhong Liu ¹

¹University of California, Davis, ²Perstorp, ³Michigan State university

2:00 p.m. 175 **Impact of common dietary strategies on piglet growth and scouring with an Enterotoxigenic Escherichia coli F18 challenge**

Chloe S. Hagen ¹, Laura L. Greiner ¹

¹Iowa State University

2:15 p.m. 176 **Impact of dietary crude protein level and water-based arginine on piglet growth and scouring with an Enterotoxigenic Escherichia coli F18 challenge**

Chloe S. Hagen ¹, Laura L. Greiner ¹

¹Iowa State University

2:30 p.m. 177 **Modulation of fecal microbiome by phytogenics, a postbiotic, and mix of organic acids with essential oils in weaned pigs subjected to F18 Escherichia coli challenge**

Allison Knoell ¹, Maria I. Sardi ¹, Corinne Schut ², Caroline Gonzalez Vega ¹, Brooke Smith ¹, Zhenbin Zhang ¹, Vahab Farzan ², Ehsan Khafipour ¹

¹Cargill, ²University of Guelph

2:45 p.m. 178 **Effects of L-glutamate and L-aspartate supplementation on systemic and intestinal immune responses of weaned piglets challenged with F18 ETEC**

Supatirada Wongchanla ¹, Sangwoo Park ¹, Kwangwook Kim ², Shuhan Sun ¹, Xunde Li ¹, Yanhong Liu ¹

¹University of California, Davis, ²Michigan State university

3:00 p.m. 179 **Effects of Saccharomyces yeast postbiotics on intestinal health of newly weaned pigs challenged with F18+ E. coli**

Alexa R. Gormley ¹, Marcos Elias Duarte ¹, Sung Woo Kim ¹

¹North Carolina State University

3:15 p.m. **Nonruminant Nutrition VII - Nutritional Strategies Under Health Challenge Break**

3:30 p.m. 180 **Dietary milk fat globule membrane alters intestinal microbiota of neonatal piglet following lipopolysaccharide challenge and marker of neuroinflammation**

Rui Zheng ¹, Ming Yan ¹, Rebecca Brown ¹, Zhongtang Yu ², Rafael Jiménez-Flores ¹, Sheila K. Jacobi ¹

¹The Ohio State University, ²The Ohio State University

3:45 p.m. 181 **Effects of Soy protein concentrate replacing conventional soybean meal on intestinal health and growth of newly weaned pigs challenged with F18+ Escherichia coli**

Zixiao Deng ¹, Marcos Elias Duarte ¹, Sung Woo Kim ¹

¹North Carolina State University

4:00 p.m. 182 **Evaluation of the effects of F18 enterotoxigenic Escherichia coli intestinal attachment in nursery pigs**

Elizabeth M. Due ¹, Eric R. Burrough ¹, Emma Helm ², Nicholas K. Gabler ¹

¹Iowa State University, ²Virginia Polytechnic Institute and State University

4:15 p.m. 183 **Evaluation of phytogetic formulations on intestinal health and the performance of nursery pigs challenged with F18+Escherichia coli**

Yesid R. Garavito Duarte ¹, Marcos Elias Duarte ¹, Sung Woo Kim ¹

¹North Carolina State University

4:30 p.m. 184 **The metabolism of vitamin D is modulated by vitamin C supplementation during Porcine Reproductive and Respiratory Syndrome challenge in post-weaning piglets**

Danyel Bueno Dalto ¹, Frédéric Guay ², Carl A. Gagnon ³, Laetitia Cloutier ⁴, Marie-Pierre Létourneau-Montminy ²

¹Agriculture and Agri-Food Canada, ²Laval University, ³Montreal University, ⁴Centre de développement du porc du Québec

4:45 p.m. 185 **Maternal live yeast supplementation protects newly weaned piglets against lipopolysaccharide challenge by regulating immune-associated milk proteins**

Yuechi Fu ¹, Theresa M. Casey ¹, Timothy A. Johnson ¹, Jun Xie ², Olayiwola Adeola ¹, Kolapo M. Ajuwon ¹

¹Purdue University, ²Department of Statistics, Purdue University

Ruminant Nutrition III

Chair: Kendall Swanson, North Dakota State University

1:45 PM - 3:00 PM

Meeting Room K-O-L-P

1:45 p.m. 232 **Evaluation of a phytogetic feed additive with essential oils and plant extracts on growth performance in single sourced steer calves fed a forage-based diet during the initial 53 d receiving period**

Justin J. Delver¹, Warren C. Rusche¹, Zachary K. Smith¹

¹South Dakota State University

2:00 p.m. 233 **Inclusion of a multispecies fungal feed additive in forage-based diets fed to beef cattle: effects on growth performance and ruminal fermentation**

Alejandro Pittaluga¹, Alejandro E. Relling¹

¹The Ohio State University

2:15 p.m. 234 **Evaluation of a phytogetic blend on post-weaning growth performance, health, and sera metabolite responses during the initial 56 d feedlot receiving period in newly-weaned steers**

Thiago Lauro Maia Ribeiro¹, Zachary K. Smith¹, Emma H. Wall², Forest L. Francis¹, Becca B. Grimes Francis³, Cassidy R. Ross¹, Warren C. Rusche¹, Jeff S. Heldt⁴

¹South Dakota State University, ²Nutreco, ³Animal Science/ South Dakota State University,

⁴Selko USA

2:30 p.m. 235 **Evaluation of an exogenous fibrolytic enzyme combination in forage-based growing diets fed to growing beef cattle**

Madeliene S. Nichols¹, Grady J. Gullickson¹, Yssi L. Entzie¹, Sarah R. R. Underdahl¹, Lydia E. Hansen¹, Jessie G. Syring¹, Joshua Wianeki¹, Danielle Jensen¹, Kathlyn Hauxwell¹, Zachary E. Carlson¹, Thomas Winders²

¹North Dakota State University, ²Danisco Animal Nutrition and Health

2:45 p.m. 236 **The effects of replacing dried distillers grains with solubles with heat-treated soybean meal on nutrient intake and digestibility in forage-based diets**

Grady J. Gullickson¹, Madeliene S. Nichols¹, Yssi L. Entzie¹, Lydia E. Hansen¹, Jessie G. Syring¹, Terry Skunberg¹, Justin Gilbertson¹, Colin T. Tobin¹, Kendall C. Swanson², Zachary E. Carlson¹

¹North Dakota State University, ²Department of Animal Sciences, North Dakota State University

Swine Translational I

Chair: Caleb Shull, The Maschhoffs, LLC

2:00 PM - 4:00 PM

Hall of Ideas E/H

2:00 p.m. 216 **Is weaning body weight more important than early post-weaning feed intake? – A meta-analysis exploring electronic feeding stations data**

Lluís Fabà¹, Tetske G. Hulshof¹, G B G Balemans¹, Hubèrt M J van Hees¹

¹Trouw Nutrition R&D

2:15 p.m. 217 **Weaning weight associated with improved nursery pig growth rate.**
Michelle McCallum¹, Gregory Krahn¹, Julie Mahoney¹, Rodney Hinson¹, Chris L. Eden¹
¹United Animal Health

2:30 p.m. 218 **Weaning weight associated with improved performance of grow-finish pigs**
Gregory Krahn¹, Michelle McCallum¹, Julie Mahoney¹, Rodney Hinson¹, Chris L. Eden¹
¹United Animal Health

2:45 p.m. 219 **Effect of stocking density on F1 Gilt grow-finish performance**
Rachel Self¹, Clara K. Henry², Christine Mainquist-Whigham³, Amanda Cross⁴, Ethan Stephenson³, Brady McNeil⁴
¹University of Missouri, ²Michigan State University, ³Pillen Family Farms, ⁴DNA Genetics

3:00 p.m. **Swine Translational I Break**

3:15 p.m. 220 **Litter performance, serum collagen, and hormone concentrations in prolapsed and non-prolapsed sows**
Jared A. Harshman¹, Scott D. Carter², Kyle Coble³
¹Huvepharma, ²Oklahoma State University, ³JBS Live Pork

3:30 p.m. 221 **Impact of parity on stall utilization in free access stall systems**
Simon A. Collier¹, Andrea M. Luttman¹, Janice M. Siegford¹, Catherine W. Ernst¹
¹Michigan State University

3:45 p.m. 222 **Effect of electronically controlled floor cooling pads on thermoregulatory performance of Duroc boars during the summer heat stress period**
Daphne Licuan¹, Allan P. Schinckel¹, Jamie Hundley², RJ Nepomuceno³, Matt Robins³, Randolph Crasto³, Bradley A. Didion⁴, Michael Kleve-Feld⁵, Kara R. Stewart¹
¹Purdue University, ²Pig Improvement Company Inc., ³Innovative Heating Technology, ⁴Genus PIC, ⁵PIC North America

Animal Behavior, Health and Well-Being

Chair: Kelsey Bruno-Bayliff, Oklahoma State University

2:00 PM - 5:00 PM

Hall of Ideas F/I

2:00 p.m. 205 **Detection of anemic sheep using ocular conjunctiva images and deep learning technology**
Luara Freitas¹, Rafael Ferreira², Anderson A. Alves¹, Joao R. R. Dórea², Claudia Paz³, Guilherme J M Rosa¹
¹University of Wisconsin-Madison, ²University of Wisconsin, ³Sustainable Livestock Research Center, Animal Science Institute

2:15 p.m. 206 **Evaluation of the effect of oral administration of bivalent VHH constructs in weaned piglets challenged with enterotoxigenic Escherichia coli F4+**
Laia Ferreres Serafini ¹, Susana Martín Orúe ¹, Sandra W. Thrane ², Lorena Castillejos Velázquez ¹

¹Animal Nutrition and Welfare Service, Department of Animal and Food Science, ²Bactolife A/S

2:30 p.m. 207 **Impacts of beak trimming and dietary fiber on welfare and productivity of laying hens**

Haipeng Shi ¹, Samar Tolba ¹, Vanessa Leone ¹, Sarah J J Adcock ²

¹University of Wisconsin-Madison, ²University of Wisconsin Madison

2:45 p.m. 208 **The antiviral and immunomodulating properties from glycerides of lauric acid in PRRSV-infected PAM cells**

Darlene J. Bloxham ¹, Tim Goossens ², Olga Lemâle ³, Retno Rahayu ⁴, Isaura Christiaens ⁴

¹Adisseo North America, ²Adisseo, ³Adisseo NL B.V, ⁴Poulpharm

3:00 p.m. 209 **Influence of litter origin on performance and tail biting in growing-finishing pigs**

Courtney A. Archer ¹, Adrienne Hilbrands ², Benny E. Mote ³, Ty B. Schmidt ⁴, Lee J. Johnston ², Yuzhi Li ²

¹University of Minnesota, ²West Central Research and Outreach Center, University of Minnesota, ³University of Nebraska-Lincoln, ⁴University of Nebraska

3:15 p.m. **Animal Behavior, Health and Well-Being Break**

3:30 p.m. 210 **Sleeping beauties: A daily time budget for individually-housed research pigs at 6-days of age**

Tawni N. Williams-Stroud ¹, Ryan N. Dilger ², Angela R. Green-Miller ¹

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

3:45 p.m. 211 **Analysis of microbial communities from a commercial-size swine manure pit and their association with production of volatile organic compounds**

Emily Fowler ¹, Ryan S. Samuel ¹, Benoit St-Pierre ¹

¹South Dakota State University

4:00 p.m. 212 **Growth and behavior of Yorkshire gilts exhibiting physiological resilience to weaning stress**

Andrea M. Luttman ¹, Janice M. Siegford ¹, Catherine W. Ernst ¹

¹Michigan State University

4:15 p.m. 213 **Evaluation of tissue depths and thalamic measurements for two captive bolt placements and types on cadaver heads from sows > 200 kg body weight**

Karly N. Anderson ¹, Ashlynn A. Kirk ², Jennifer Berger ³, Arquimides A. Reyes ², Ruth Woiwode ⁴, Perle E. Zhitnitskiy ⁵, Kurt D. Vogel ²

¹University of Nebraska-Lincoln; University of Wisconsin-River Falls, ²University of Wisconsin - River Falls, ³Abbyland Pork Pack, ⁴University of Nebraska-Lincoln, ⁵University of Minnesota - College of Veterinary Medicine

4:30 p.m. 214 **Impact of a nutritional water supplement on nursery mortality as determined by different statistical methods and consequences for on-farm application of technology**

Fredrik Sandberg¹, Steve J. England¹, Kevin Soltwedel¹, Pornpim Aparachita¹, Robert Fischer¹, Greg Hartsook¹, Woong Bi Kwon¹

¹Furst-McNess Company

4:45 p.m. 215 **The effect of a Lactobacillus fermentation postbiotic on nursery pig growth performance after experimental inoculation with F18 Escherichia coli**

Michael Welch¹, Danielle Johnson¹, Eric Parr¹, Dustin Boler¹, Steve Pollmann², John Stockham³, Sean Yang³

¹Carthage Innovative Swine Solutions, ²DSP Consulting LLC, ³Verdesian Life Sciences

Nonruminant Nutrition VIII - Nursery II

Chair: Lucas Rodrigues, Zinpro Corporation

2:00 PM - 5:00 PM

Ballroom D

2:00 p.m. 186 **Evaluation of the effects of a Lactobacillus postbiotic product (Lumensa™) in medicated and non-medicated nursery pig diets**

Thomas E. Weber¹, Julie Salyer², Sean Yang³, John Stockham³, Steve Pollmann⁴

¹Kent Nutrition Group, ²Kalmbach Feeds, ³Verdesian Life Sciences, ⁴DSP Consulting LLC

2:15 p.m. 187 **Polyphenols as a partial replacement for vitamin E in nursery pig diets**

Zhong-Xing Rao¹, Mike D. Tokach², Jason C. Woodworth², Joel M. DeRouchey², Robert D. Goodband², Apoorva Shah³, Brandon Foley³, Karsten Kjeldsen⁴, Grete Brunsgaard⁴, Jordan T. Gebhardt²

¹IFF (Danisco animal nutrition), ²Kansas State University, ³SAM Nutrition, ⁴R2 Agro

2:30 p.m. 188 **A combination of green tea and butyric acid as a potential alternative for zinc oxide improves gut microbiota composition and growth performance in weaning pigs**

Sungbo Cho¹, Robie Vasquez¹, Ji Hoon Song¹, Dae-Kung Kang¹, In Ho Kim¹

¹Dankook University

2:45 p.m. 189 **Combination of organic acid and monoglyceride blends improved growth performance in nursery pigs with and without added antibiotics and ZnO**

Ying Chen¹, Mark Whitney¹, Ross Wolfenden¹

¹Eastman Chemical Company

3:00 p.m. 190 **Phytogenic feed additive improved growth performance and health of nursery pigs in diets with and without combination of several feed additives**

Sabrina May¹, Caroline Gonzalez Vega¹, Brooke Smith¹, Kory Moran¹, Ellyn Teddy¹

¹Cargill

3:15 p.m. **Nonruminant Nutrition VIII - Nursery II Break**

3:30 p.m. 191 **Supplementing short- and medium-chain fatty acid-based products increases the health and performance of weaned piglets**

Darlene J. Bloxham¹, Tim Goossens², Joaquin Morales³, Olga Lemâle⁴

¹Adisseo North America, ²Adisseo, ³Animal Data Analytics, ⁴Adisseo NL B.V

3:45 p.m. 192 **Effects of inclusion of a probiotic and/or a postbiotic in diets containing a phytogetic feed additive on growth performance and fecal microbiome composition and function of nursery pigs**

Sabrina May¹, Allison Knoell¹, Caroline Gonzalez Vega¹, Maria I. Sardi¹, Ehsan Khafipour¹

¹Cargill

4:00 p.m. 193 **The effects of mannan oligosaccharides on mortality and full value nursery swine**

Jose A. Soto¹, Henrique S. Cemin², Morgan Hart², Sharlie A. Hansen², Ernie L. Hansen²

¹Alltech, ²Hubbard Feeds

4:15 p.m. 194 **Effects of combining plant and yeast extracts with essential oils or protected betaine on performance and health of weaned piglets**

DAVID GUILLOU¹, DAVID BRILLOUET¹, JIM BRYTE¹, NOEMIE LEMOINE¹

¹MIXSCIENCE

4:30 p.m. 195 **Incidence of porcine ear necrosis in nursery pigs under commercial conditions is reduced with stimbiotic**

Laura A. Merriman¹, Pete Wilcock¹, Spenser L. Becker¹, Gustavo Cordero¹

¹AB Vista

4:45 p.m. 69 **Effect evaluation of two sources of zinc at EU-authorized level on growth performance and gut health of piglets with a low or normal birth weight**

Clara Negrini¹, Diana Luise¹, Federico Correa¹, Sara Viridis¹, Agathe Roméo², Alessandra MONTEIRO³, Paolo Trevisi¹

¹University of Bologna, ²Animine Precision Minerals, ³ANIMINE

Physiology

Chair: Kolapo Ajuwon, Purdue University

3:15 PM - 5:00 PM

Meeting Room K-O-L-P

3:15 p.m. 237 **Disrupted insulin signaling due to an acute immune response in swine**

Grace I. Markley¹, Chad H. Stahl¹, Elizabeth Cooper¹, Rousset Palou¹

¹University of Maryland, College Park

3:30 p.m. 238 **Effect of electronically controlled floor cooling pads on semen performance of Duroc boars during the summer heat stress**

Daphne Licuan¹, Allan P. Schinckel¹, Jamie Hundley², RJ Nepomuceno³, Matt Robins³, Randolph Crasto³, Bradley A. Didion⁴, Michael Kleve-Feld⁵, Kara R. Stewart¹

¹Purdue University, ²Pig Improvement Company Inc., ³Innovative Heating Technology,

⁴Genus PIC, ⁵PIC North America

3:45 p.m. 239 **Variation in muscle protein synthesis in growing gilts is partially associated with insulin resistance and sensitivity**

Aline Remus¹, H el ene Lapierre², Marie-France Palin², Candido Pomar¹
¹AAFC, ²Agriculture and Agri-Food Canada (AAFC)

4:00 p.m. 240 **Impact of structural traits on semen collection training and lesion characteristics in Duroc boars**

Ashley R. Hartman¹, Macie C. Weigand², David M. Grieger², Karol E. Fike²
¹DNA Genetics / Pillen Family Farms, ²Kansas State University

4:15 p.m. 241 **Immunophysiology and performance of broilers supplemented with macroalgal sulfated polysaccharides during a subclinical necrotic enteritis challenge**

Maria Garcia Suarez¹, Rami Dalloul², Candice Blue²
¹Olmix, ²UGA

4:30 p.m. 242 **Comparison of GnRH administration day in the 7&7 Synch versus 8&6 Synch Protocol for fixed-timed artificial insemination in beef heifers**

Clayton E. Schowe¹, Bryan R. Kutz¹, Jeremy G. Powell², Jana L. Reynolds¹, Kirsten A. Midkiff¹, Charles R. Looney¹, Wyatt E. Weber¹

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

4:45 p.m. 243 **Effects of body weight change in pre-production Duroc boars on semen collection training, semen production parameters, and longevity in a commercial boar stud**

Ashley R. Hartman¹, Macie C. Weigand², Steven L. Terlouw³, Brad S. Garrison³, David M. Grieger², Jason C. Woodworth², Kara R. Stewart⁴, Karol E. Fike²

¹DNA Genetics / Pillen Family Farms, ²Kansas State University, ³DNA Genetics, ⁴Purdue University

Nonruminant Nutrition IX - Zinc and Copper

Chair: Morgan Hart, Hubbard Feeds

3:15 PM - 5:15 PM

Hall of Ideas G/J

3:15 p.m. 196 **Effects of zinc source and level in low ABC-4 diets on nursery pig growth performance and fecal dry matter**

Jamil Faccin¹, Jonathan Riedm uller², Alessandra MONTEIRO³, J urgen Zentek², Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹, Mike D. Tokach¹

¹Kansas State University, ²Universit at Berlin, ³ANIMINE

3:30 p.m. 197 **Effects of dietary zinc supplementation strategy on immune response, bacterial load and disease severity in growing gilts infected with *Mycoplasma hyopneumoniae***

Corey B. Carpenter¹, Pedro E. Urriola², Gerald C. Shurson¹, Maria Pieters³, Lee J. Johnston⁴, Wesley Schweer⁵, Lucas Rodrigues⁵

¹University of Minnesota, ²University of Minnesota College of Food, Agricultural and Natural Resource Sciences, ³University of Minnesota College of Veterinary Medicine, ⁴West Central Research and Outreach Center, University of Minnesota, ⁵Zinpro Corporation

3:45 p.m. 198 **Evaluation of zinc source and concentration on growth performance of nursery swine**

Jose A. Soto¹, Henrique S. Cemin², Morgan Hart², Sharlie A. Hansen², Ernie L. Hansen²
¹Alltech, ²Hubbard Feeds

4:00 p.m. 199 **Phytosorb improves feed efficiency in pigs of two different commercial Duroc sire lines in late finishing compared to Tri-Basic Copper Chloride**

Woong Bi Kwon¹, Steve J. England¹, Greg Hartsook¹, Pornpim Aparachita¹, Kevin Soltwedel¹, Robert Fischer¹, Fredrik Sandberg¹

¹Furst-McNess Company

4:15 p.m. 200 **Effects of zinc oxide removal and different nutritional plans on the growth performance, health, and behavior of nursery pigs from different genetic lines**

Vitor Hugo Moita¹, Jordi Camp¹, Carine M. Vier¹, Wayne R. Cast¹, Steve Dritz¹, Luis E. Zaragoza¹, Danielle Wilson-Wells¹, Ning Lu¹, Weasley A. Orlando¹, Jose Landero², Malachy Young²

¹Genus PIC, ²Gowans Feed Consulting

4:30 p.m. 201 **The effects of the supplementation of a Zinc-amino acid complex in pig nursery diets with differing pharmacological levels of Zinc Oxide and complexity**

Wesley Schweer¹, Alyssa S. Cornelison¹, Mike Socha¹, Todd E. Williams², Lucas Rodrigues¹

¹Zinpro Corporation, ²Pipestone Research

4:45 p.m. 202 **Source matters: long-term effects of nursery sanitary condition and dietary Zinc source and level on growth performance, diarrhea incidence, and carcass metrics of pigs**

Lucas Rodrigues¹, Alyssa S. Cornelison¹, Wesley Schweer¹, Ton Kramer¹, Stefan Langer¹, Mike Socha¹, Rhuan F. Chaves², Vinicius Cantarelli²

¹Zinpro Corporation, ²AnimalNutri - Science and Technology

5:00 p.m. 203 **The relationship between potentiated zinc oxide and monovalent copper in a dietary administration for weanling piglets**

Luca Marchetti¹, Raffaella Rebucci¹, Paola Cremonesi², Bianca Castiglioni², Filippo Biscarini², Yron Joseph Y. Manaig³, Valentino Bontempo¹

¹Università degli Studi di Milano, ²Institute of Agricultural Biology and Biotechnology (IBBA-CNR), ³Animine Precision Minerals

Teaching and Extension Education

Chair: Krista Eiseman, University of Wisconsin-Platteville

4:15 PM - 4:30 PM

Hall of Ideas E/H

4:15 p.m. 223 **Survey of veterinarians who use pentobarbital for euthanasia suggests knowledge gaps regarding animal disposal**

Mike Murphy ¹, Emily Cornwell ²

¹American Veterinary Medical Association, ²Food and Drug Administration Center for Veterinary Medicine

Wednesday, March 13, 2024

Ruminant Nutrition IV

Chair: Kendall Swanson, North Dakota State University

8:00 AM - 9:45 AM

Hall of Ideas F/I

8:00 a.m. 294 **Development of a model to predict forage intake and growth of bottle-fed Holstein calves**

Phillip A. Lancaster ¹, Geovana C. Baldin ¹, Caleb Hildebrand ¹, Robert Larson ¹

¹Beef Cattle Institute, Kansas State University

8:15 a.m. 295 **Development of a model to predict forage intake and growth of nursing beef calves**

Phillip A. Lancaster ¹, Geovana C. Baldin ¹, Caleb Hildebrand ¹, Robert Larson ¹

¹Beef Cattle Institute, Kansas State University

8:30 a.m. 296 **Effects of dietary antimicrobials on the ruminant gastrointestinal tract microbiome**

Tyler J. Vincent ¹, Lester Nolasco ¹, Chaichana Suriyapha ², Timothy A. Johnson ¹, Jon P. Schoonmaker ¹

¹Purdue University, ²Khon Kaen University

8:45 a.m. 297 **Effects of plasma zinc concentration on longissimus thoracis metabolic status of beef steers**

Brock M. Ortner ¹, Dathan T. Smerchek ¹, Stephanie L. Hansen ¹

¹Iowa State University

9:00 a.m. 298 **Impact of ruminal acidosis on cattle energy metabolism**

Haley F. Linder ¹, Jiangong Li ¹, Larry L. Berger ², Angela R. Green-Miller ², Joshua C. McCann ¹

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

9:15 a.m. 306 **Awardee Talk: Characterization and surveillance testing of problematic pathogens within the livestock industry using metagenomic and long read sequencing**

Alison C. Neujahr ¹

¹University of Nebraska–Lincoln

Nonruminant Nutrition X - Grow-Finish II
Chair: Shannon Dierking, CSA Animal Nutrition
8:00 AM - 10:45 AM
Hall of Ideas G/J

8:00 a.m. 246 **The effect of trypsin inhibitor unit concentrations from raw soybeans in grower pig performance and protein digestibility**

Kayla A. Miller¹, Mitchell J. Nisley¹, Omarh F. Mendoza², Joel D. Spencer³, Hari B. Krishnan⁴, Nicholas K. Gabler¹

¹Iowa State University, ²The Maschoffs, LLC, ³United Animal Health, ⁴USDA

8:15 a.m. 247 **Evaluating the use of soybean hulls on growth performance, carcass composition, and digestibility when fed to grow-finish pigs**

Kayla A. Miller¹, Omarh F. Mendoza², Chris Sparks¹, Nicholas K. Gabler¹

¹Iowa State University, ²The Maschoffs, LLC

8:30 a.m. 248 **Effects of feeding finishing pig diets differing in Ca:P ratio, added phytase and 25(OH)D3 on growth performance, serum 25(OH)D3, carcass characteristics, and bone characteristics**

Hilario M. Cordoba¹, Jason C. Woodworth¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Jordan T. Gebhardt¹, Jon R. Bergstrom²

¹Kansas State University, ²dsm-firmenich

8:45 a.m. 249 **A nutritional solution based on calcidiol (25-OH-D3, HyD®) and triterpenoids improves growth performance in grower-finisher pigs fed low Ca and P diets without compromising bone health**

Ursula M. McCormack¹, Ramon Muns², Christina Mulvena³, Maria C Walsh¹, Laurent Roger¹, Estefania Perez Calvo¹

¹dsm-firmenich, ²AFBI, ³Agri-food and Biosciences Institute

9:00 a.m. 250 **Effects of premix carriers rich in iron, calcium, or fiber on growth performance of early-growing pigs**

Liangkai Cheng¹, Xule Liu², Apichat Wantanasak³, Tingting Ju⁴, Gary Stoner⁵, Apichat Wantanasak⁵, JIYAO GUO², Xiao Xu¹

¹Wuhan Polytechnic University, ²CP Group China, ³CP INVESTMENT CO. LTD, ⁴University of Alberta, ⁵CP Group

9:15 a.m. **Nonruminant Nutrition X - Grow-Finish II Break**

9:30 a.m. 251 **Effects of feeding increasing levels of dimethylglycine (DMG) on growth performance, livability, and carcass characteristics of commercial finishing pigs**

Ran Song¹, Nick Shelton¹, Sarah E. Schuling¹, Sue M. Knudtson¹, Jodi Miller¹, Dan E. Schimek¹, Kim Friesen¹

¹NutriQuest

9:45 a.m. 252 **Evaluation of phase feeding and complete diet blending at different standardized ileal digestible lysine levels on finishing pig growth performance, carcass characteristics and diet costs**

Ron Aldwin S. Navales¹, Mike D. Tokach¹, Dwayne Krogstad², Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹

¹Kansas State University, ²ComDel Innovation

10:00 a.m. 253 **The influence of corn-based fiber on digesta short chain fatty acid composition and pH in growing pigs**

Hannah Miller¹, Rachel Self¹, Cassidy Sasser², Amelia Balsler², Jerrad F. Legako², Manuel S. Hernandez², Rand R. Broadway³, Nicole C. Burdick Sanchez⁴, Jeff A. Carroll⁵, Amy L. Petry⁶

¹University of Missouri, ²Texas Tech University, ³Livestock Issues Research Unit, ⁴USDA-ARS, ⁵Livestock Issues Research Unit USDA, ⁶University of Missouri, Division of Animal Science

10:15 a.m. 254 **Effect of feeding high oleic soybean oil to finishing pigs on growth performance, carcass characteristics, and meat quality**

Ashir Foreman Atoo¹, Crystal L. Levesque¹, Robert C. Thaler¹, Keith Underwood¹, Erin S. Beyer², Jorge Y. Perez-Palencia¹

¹South Dakota State University, ²North Dakota State University

Nonruminant Nutrition XII - Nursery III

Chair: Jamil Faccin, Kansas State University

8:00 AM - 10:45 AM

Ballroom D

8:00 a.m. 265 **Effect of L-Glutamine and enzyme supplementation of liquid creep feed from day 8 to 28 of age on pre-weaning growth and health of pigs**

Elisa A. Arnaud¹, Gillian E. Gardiner², John V. O'Doherty³, Torres Sweeney³, Peadar G. Lawlor¹

¹Teagasc, ²South East Technological University, ³University College Dublin

8:15 a.m. 266 **Evaluation of anchovy fish meal with or without added fish solubles on nursery pig performance**

Ethan B. Stas¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University

8:30 a.m. 267 **Effects of replacing soybean meal with a hydrothermal mechanical processed soybean meal on growth performance and health of nursery pigs fed a low complexity diet**

Sabrina May¹, Caroline Gonzalez-Vega¹, Chad M. Pilcher¹, Chris W. Parks¹

¹Cargill

8:45 a.m. 268 **Effect of soybean gums and soybean soapstocks on weanling pig growth performance**

Katelyn N. Gaffield¹, Robert D. Goodband¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Jordan T. Gebhardt¹

¹Kansas State University

9:00 a.m. 269 **Influence of herbal active D on nursery pig growth performance, bone characteristics and blood measures**

Larissa L. Becker¹, Mike D. Tokach¹, Jason C. Woodworth¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹

¹Kansas State University

9:15 a.m. **Nonruminant Nutrition XII - Nursery III Break**

9:30 a.m. 270 **Interactive effects of available phosphorus and Ca:P on growth performance of nursery pigs fed diets containing phytase**

Henrique S. Cemin¹, Morgan Hart¹, Sharlie A. Hansen¹, Jose A. Soto², Ernie L. Hansen¹

¹Hubbard Feeds, ²Alltech

9:45 a.m. 271 **The effects of supplementing diets with 25-OH-D₃, with or without increased vitamin E, on the performance of nursery pigs**

Jon R. Bergstrom¹, Jose Landero², Malachy Young², Sara Hough³

¹dsm-firmenich, ²Gowans Feed Consulting, ³dsm-firmenich, Animal Nutrition & Health

10:00 a.m. 272 **Effects of increasing folic acid on nursery pig growth performance and serum homocysteine**

Larissa L. Becker¹, Jordan T. Gebhardt¹, Mike D. Tokach¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Jason C. Woodworth¹

¹Kansas State University

10:15 a.m. 273 **Effect of dietary iodine supplementation on the growth performance and thyroid hormone concentrations of nursery pigs**

Robert Dove¹, Savannah Locke¹, Clint Edmunds², Mallory Sterling³, Jordan Sanvidge³, Nuan Wang³, Clay A. Lents⁴, Michael Azain³

¹University of Georgia, ²Clayton State University, ³UGA, ⁴USDA

10:30 a.m. 274 **Socialization of piglets during suckling enhanced feed intake after weaning but did not alter their response to dietary amino acid concentration**

Lluís Fabà¹, Michael O. Wellington¹, Hubèrt M J van Hees¹, Tetske G. Hulshof¹

¹Trouw Nutrition R&D

Nonruminant Nutrition XIII - Breeding Herd II

Chair: Andrea Hanson

8:00 AM - 10:45 AM

Ballroom C

8:00 a.m. 275 **Assessment of changes in hemoglobin concentration (Hb) in sows and their offspring over two consecutive reproductive cycles**

Katlyn A. McClellan¹, Merlin D. Lindemann², Crystal L. Levesque¹

¹South Dakota State University, ²University of Kentucky

8:15 a.m. 276 **Effects of a phytogenic feed additive fed during lactation on sow and litter performance**

Gabriella Lima¹, Hayford Manu², Chris P A van de Ligt³, Emma H. Wall⁴, Lee J. Johnston⁵

¹Department of Animal Science, University of Minnesota, ²University of Minnesota, ³Selko USA, ⁴Nutreco, ⁵West Central Research and Outreach Center, University of Minnesota

8:30 a.m. 277 **Effect of yeast probiotics in lactation and nursery diets on progeny lifetime growth performance, immune response, and carcass characteristics**

Abigail K. Jenkins¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Jason C. Woodworth¹, Mike D. Tokach¹, Robert D. Goodband¹, Joseph Loughmiller², Brian Kremer²

¹Kansas State University, ²Phileo by Lesaffre

8:45 a.m. 278 **Phytogenic feed additive increased sow lactation average daily feed intake, litter weaning weight, and subsequent conception rate when fed in summer environmental conditions**

Molly L. McGhee¹, Chad M. Pilcher¹, Brent Frederick¹, Kory Moran¹

¹Cargill

9:00 a.m. 279 **Effect of multiple feed additives on sow inflammatory status and reproductive performance during lactation**

Qiong Hu¹, Junmei Zhao¹, Thomas Pecqueur¹, Stephanie Walston¹

¹Cargill

9:15 a.m. **Nonruminant Nutrition XIII - Breeding Herd II Break**

9:30 a.m. 280 **Feeding a combination of feed additives prior and during sows' farrowing reduces inflammation and oxidative stress and increases blood calcium to support uterine contraction**

Laia Blavi¹, Laia Sobrevia¹, Steven Laird¹, Mai Anh Ton Nu², Simon Tibble¹

¹AB Neo, ²AB Neo, AB Agri Ltd

9:45 a.m. 281 **Effects of dietary *Aspergillus oryzae* postbiotic during gestation and lactation on sow and progeny performance**

Sudario Roberto Silva Junior¹, Lee J. Johnston², Hayford Manu¹, Andres Gomez¹, Cesar Ocazio³, Ignacio R. Ipharraguerre⁴, Pedro E. Urriola⁵

¹University of Minnesota, ²West Central Research and Outreach Center, University of Minnesota, ³BioZyme Inc, ⁴Institute of Human Nutrition and Food Science, University of Kiel, ⁵University of Minnesota College of Food, Agricultural and Natural Resource Sciences

10:00 a.m. 282 **Effect of dietary supplementation with Guanidinoacetic acid, a creatine precursor, in gestating and lactating sows on sow and litter performance**

S. María S. Mendoza¹, L. Bauer², John K. Htoo², Sarah Asmussen³, S. Richert²

¹Evonik Corporation, ²Evonik Operations GmbH, ³Livestock feed tests Denmark ApS

10:15 a.m. 283 **Identification of new or existing risk factors associated with the development of sow pelvic organ prolapse**

Lori Kociemba¹, Carine M. Vier¹, Sergio Canavate¹, Andres diaz¹, Julia A. Calderon Diaz¹, Kendall Weger¹, Weasley A. Orlando¹, Steve Dritz¹

¹Genus PIC

10:30 a.m. 284 **Relationship between sow caliper measurements with sow reproductive performance and longevity in the herd**

Carine M. Vier¹, Steve Dritz¹, Weasley A. Orlando¹, Julia A. Calderon Diaz¹, Jordi Camp¹, Wayne R. Cast¹, Ning Lu¹, Sergio Canavate¹, Dan Hamilton¹, Mark Knauer², Jean Poulin¹

¹Genus PIC, ²North Carolina State University

Swine Translational II: Applied Nutrition & Health

Chair: David Rosero, Iowa State University

8:00 AM - 10:30 AM

Hall of Ideas E/H

8:00 a.m. 285 **Impact of feeding strategies on semen concentration, motility, and morphology of the mature AI boar**

Taw Scaff¹, Alicia N. Denton², Ally ford¹, Emma Zaicow¹, Kara R. Stewart¹, Brian T. Richert¹

¹Purdue University, ²University of Missouri

8:15 a.m. 286 **Impact of feeding strategies on bodyweight and body condition in mature AI boars**

Taw Scaff¹, Lauren A. Brizgys¹, Mekenzie R. Cecil¹, Alicia N. Denton², Alexandra Fisk¹, Ally ford¹, Kara Pounds¹, Jacob A. Richert¹, Emma Zaicow¹, Kara R. Stewart¹, Brian T. Richert¹

¹Purdue University, ²University of Missouri

8:30 a.m. 287 **The effect of cooling pads and Moringa oleifera on lactating sows under heat stress**

McKeeley C. Stansberry¹, Wonders Ogundare², Linda M. Beckett¹, Leriana Garcia Reis¹, Elizabeth G. Fisher¹, Evy M. Tobolski¹, Brian T. Richert¹, Theresa M. Casey¹, Allan P. Schinckel¹, Radiah C. Minor²

¹Purdue University, ²North Carolina A&T State University

8:45 a.m. 288 **Effects of increasing water concentrations of oregano essential oil supplementation for lactating sows**

Alexandra Fisk¹, Alicia N. Denton², Taw Scaff¹, Kara Pounds¹, Rafael A. Cabrera³, M. Dolores Cabrera³, Kara R. Stewart¹, Brian T. Richert¹

¹Purdue University, ²University of Missouri, ³Nutrinae, LLC

9:00 a.m. 289 **Evaluation of fecal microbiota transplantation in primiparous sows**
Dalton C. Humphrey ¹, Caitlyn Wileman ¹, Chloe S. Hagen ¹, Margaret Putnam ¹, Ayva Bohr ¹, Kamryn Leslie ¹, Stephan Schmitz-Esser ¹, Laura L. Greiner ¹
¹Iowa State University

9:15 a.m. **Swine Translational II Break**

9:30 a.m. 290 **Commercial farm evaluation of enzymatically processed soybean meal in lactating sows**

Megan R. Bible ¹, Simone H. Rasmussen ², Jessika van Leeuwen ²
¹Hamlet Protein Inc, ²Hamlet Protein A/S

9:45 a.m. 291 **An evaluation of soybean meal inclusion rate in pigs fed from wean to market**

Eric Weaver ¹, Jinsu Hong ², Ryan S. Samuel ¹, Crystal L. Levesque ¹, Autumn Kramer ¹, Robert C. Thaler ¹
¹South Dakota State University, ²University of Minnesota

10:00 a.m. 292 **Effects of feeding mycotoxins-contaminated feed with a mitigation strategy on growth performance and health status in weaned pigs**

Yuan-Tai Hung ¹, Gary Reznik ¹, Emily Fruge ¹, Trevor Lutz ¹
¹Devenish Nutrition

10:15 a.m. 293 **Effects of Saccharmyces yeast postbiotics on pig feed performance and carcass characteristics when included in an elevated protein diet**

Xiaohan Li ¹, Chad B. Paulk ², John M. Gonzalez ¹, Matthew Vaughn ³, Daniela A. Alambarrio ¹, Siara Zedonek ¹
¹University of Georgia, ²Kansas state university, ³Puretein Bioscience LLC

10:30 a.m. 308 **Awardee Talk: Prevention and mitigation of pathogens in feed and feed manufacturing systems**

Olivia Harrison ¹, Jason C. Woodworth ¹, Chad B. Paulk ², Jordan T. Gebhardt ¹, Cassandra K. Jones ¹
¹Kansas State University, ²Kansas state university

Nonruminant Nutrition XI - Calcium and Phosphorus

Chair: Qiong Hu, Cargill; Caroline Gonzalez-Vega, Cargill

8:00 AM - 11:15 AM

Ballroom A

8:00 a.m. 255 **Anchor Talk: Consider intrinsic factors that regulate homeostasis to optimize sustainability of mineral supplements for swine**

Thomas D. Crenshaw ¹, Mariola Grez-Capdeville ², Laura A. Amundson ², Brittney P. Kokinos ¹
¹University of Wisconsin-Madison, ²University of Wisconsin-Madison

8:30 a.m. 256 **Anchor Talk: Accounting for effects of microbial phytase on digestibility of calcium and phosphorus**

Hans H. Stein¹

¹University of Illinois at Urbana-Champaign

9:00 a.m. 257 **Estimating bone mineral replenishment following phosphorus deficiency in growing pigs**

Grace C. McKibben¹, Gustavo Cordero², Gilson A. Gomes², Spenser L. Becker², Pete Wilcock², Nicholas K. Gabler¹

¹Iowa State University, ²AB Vista

9:15 a.m. 258 **Nutritional strategies allowing inorganic phosphates reduction in maintaining maximum growth performance and bone mineralisation in piglets**

Xavière Rousseau¹, Tristan BREHELIN², Cécile Rougier-Borne³, Gustavo Cordero¹

¹AB Vista, ²Techna France Nutrition, ³Techna

9:30 a.m. **Nonruminant Nutrition XI - Calcium and Phosphorus Break**

9:45 a.m. 259 **Effect of very low calcium diet supplemented with microbial phytase in post-weaning piglets**

Marie-Pierre Létourneau Montminy¹, Marllon De Oliveira²

¹Université Laval, ²UNESP

10:00 a.m. 260 **Effect of different doses of phytase (HiPhorius™) and two primary calcium sources on nutrient digestibility, retention and blood parameters in weaned piglets**

Xiaonan Guan¹, Vanessa Lagos¹, Adam Smith², Carrie Walk², Heng-Xiao Zhai³, Francesc Molist¹

¹Schothorst Feed Research, ²DSM Nutritional Products Ltd, ³DSM-Firmenich (China) Animal Nutrition Research Center

10:15 a.m. 261 **Relationship between dietary calcium and available phosphorus in growing pigs**

Grace C. McKibben¹, Chris Sparks¹, Kayla A. Miller¹, Elizabeth M. Due¹, Mitchell J. Nisley¹, Nicholas K. Gabler¹

¹Iowa State University

10:30 a.m. 262 **Modulation of vitamin D, calcium and phosphorous metabolism and immune response in pre- and post-weaning piglets under different vitamin D supplementation strategies**

Danyel Bueno Dalto¹, Geneviève Villeneuve¹, Frédéric Guay², J. Jacques Matte¹, Jérôme Lapointe¹

¹Agriculture and Agri-Food Canada, ²Laval University

10:45 a.m. 263 **Effects of source of calcium carbonate and microbial phytase on standardized total tract digestibility of calcium by growing pigs**

Megan E. Nelson¹, Su A Lee¹, Carrie Walk², Hans H. Stein¹

¹University of Illinois at Urbana-Champaign, ²DSM Nutritional Products Ltd

11:00 a.m. 264 **Effects of increasing available phosphorus for 6 to 16 kg pigs fed diets containing phytase**

Henrique S. Cemin¹, Morgan Hart¹, Sharlie A. Hansen¹, Jose A. Soto², Ernie L. Hansen¹
¹Hubbard Feeds, ²Alltech

Pork Quality Symposium

Chair: Bailey Harsh, University of Illinois Urbana-Champaign

8:00 AM - 2:00 PM

Ballroom B

8:00 a.m. **Pork Quality Symposium Introduction**

8:10 a.m. **The Economic Situation of the Pork Loin: Economic overview of the myriad factors affecting pork loin value**

Glynn Tonsor¹

¹Kansas State University

8:30 a.m. **The Pork Demand Situation: Consumer data and insights on pork loin purchasing and use patterns**

David Newman¹, Mia Newman¹

¹National Pork Board

9:15 a.m. **Consumer Perception of Pork Loin Palatability**

Rhonda K. Miller¹, Anna C. Dilger²

¹Texas A&M University, ²University of Illinois Urbana-Champaign

10:00 a.m. **Pork Quality Symposium Discussion**

Collette Kaster¹

¹American Meat Science Association (AMSA) and Professional Animal Auditor Certification Organization

10:15 a.m. **Pork Quality Symposium Break**

10:30 a.m. **How Has the Pork Loin Changed: Changes in muscle biology of the pork loin**

Elisabeth Huff-Lonergan¹

¹Iowa State University

11:00 a.m. **Pork Benchmarking Survey: How do changes over time in retail pork loin products relate to consumer needs**

Chad Carr¹, David Newman²

¹University of Florida, ²National Pork Board

11:30 a.m. **Nutritional Value of Pork: Fat flavor research and communication strategies about the nutritional value of pork loin**

Kristin Hicks-Roof¹

¹National Pork Board

12:00 p.m. **Pork Quality Symposium Lunch and Discussion**

12:45 p.m. **Moderated Discussion: Top scientific questions to be answered about the pork loin and top research needs**

Collette Kaster ¹

¹American Meat Science Association (AMSA) and Professional Animal Auditor Certification Organization