



2019

INTERNATIONAL POULTRY SCIENTIFIC FORUM

FEBRUARY 11 – 12

2019 INTERNATIONAL POULTRY SCIENTIFIC FORUM

Concurrent Meeting of

The Southern Poultry Science Society 40th Annual Meeting

The Southern Conference on Avian Diseases 60th Annual Meeting

February 11-12, 2019

Registration:

You may register on site on Monday, Feb. 11, 7:00 a.m. — 4 p.m., and Tuesday, Feb. 12, 7:00 — 11 a.m., in Registration Lobby - Building B, Georgia World Congress Center.

Program Summary

MONDAY SESSIONS FEBRUARY 11	ROOM NUMBER	TIME	PAGE NUMBER
Physiology/Endocrinology	B-311	7:30 a.m. — 10:30 a.m. (Dr. Drew Benson)	1
Processing & Products I	B-311	10:45 a.m. — Noon (Dr. Dianna Bourassa)	3
Processing & Products II	B-311	1:00 p.m. — 3:15 p.m. (Dr. Amit Morey)	4
Pathology	B-312	7:30 a.m. — 10:15 a.m. (Dr. Laura Chen)	5
SCAD I	B-312	10:30 a.m. — Noon (Dr. Rüdiger Hauck)	6
SCAD II	B-312	1:00 p.m. — 3:30 p.m. (Dr. Ha-Jung Roh)	7
Metabolism & Nutrition I General Nutrition	B-313	7:30 a.m. — 10:00 a.m. (Dr. Chad Paulk)	8
Metabolism & Nutrition II General Nutrition/Enzymes/ Feed Additives	B-313	10:15 a.m. — Noon (Dr. Woo Kyun Kim)	9
Metabolism & Nutrition III Enzymes/Feed Additives	B-313	1:00 p.m. — 3:30 p.m. (Dr. John Boney)	10
Metabolism & Nutrition IV Vitamins/Minerals/ Feed Additives	B-314	7:45 a.m. — 9:45 a.m. (Dr. Pratima Adhikari)	11
Metabolism & Nutrition V Amino Acids	B-314	10:00 a.m. — Noon (Dr. Elijah Kiarie)	12
Metabolism & Nutrition VI General Nutrition	B-314	1:00 p.m. — 3:30 p.m. (Dr. Raj Murugesan)	13
Environment Management I Env. Factors/Bird Welfare	B-315	7:45 a.m. — 10:00 a.m. (Dr. Kimberly Livingston)	14
Environment Management II Stress Response/Behavior	B-315	10:15 a.m. — Noon (Dr. Yang Zhao)	15
Environment Management III Env. Factors/Bird Welfare	B-315	1:00 p.m. — 3:30 p.m. (Dr. Maja Makagon)	16
Student Luncheon	B-310	Noon — 1:00 p.m.	
USPOULTRY Presentation	B-313	3:30 p.m. — 4:00 p.m. (Dr. John Glisson)	
Posters Displayed	B-313 Foyer	1:00 p.m. — 6:00 p.m. (Dr. Sheila Purdum, Dr. Aaron Kiess)	28
Poster Reception	B-313 Foyer	4:00 p.m. — 6:00 p.m.	28

TUESDAY SESSIONS February 12	ROOM NUMBER	TIME	PAGE NUMBER
Posters Displayed	B-313 Foyer	8:00 a.m. — Noon	28
Metabolism & Nutrition VII Minerals/Probiotics/ Feed Additives	B-311	7:30 a.m. — 11:00 a.m. (Dr. Sergio Vieira)	17
SCAD III	B-312	8:00 a.m. — 11:00 a.m. (Dr. Kiril Dimitrov)	19
Metabolism & Nutrition VIII Feed Additives	B-313	7:45 a.m. — 11:00 a.m. (Dr. Mahmoud Masa'deh)	21
Metabolism & Nutrition IX Feed Additives	B-314	7:45 a.m. — 11:00 a.m. (Dr. Mike Persia)	23
Metabolism & Nutrition X Probiotics/Feed Additives	B-315	7:45 a.m. — 11:00 a.m. (Dr. Anita Menconi)	25
Milton L. Dendy Keynote Lecture	B-313	11:00 a.m. — Noon	27
SCAD Business Meeting	B-312	Noon — 1:00 p.m.	
SPSS Business Meeting	B-313	Noon — 1:00 p.m.	

Officers of the SPSS 2018-2019

President	Dr. April Levy, DSM Nutritional Products
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Second VP	Dr. Miguel Barrios, Synexis Biodefense
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Executive Secretary	Dr. Mary Beck Poultry Science Department Mississippi State University Mail Stop 9665 Mississippi State, MS 39762
Phone:	662.325.3416
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Officers of the SCAD 2018-2019

President	Dr. Rüdiger Hauck, Auburn
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Secretary / Treasurer	Dr. Mark W. Jackwood, UGA Department of Population Health University of Georgia 953 College Station Road Athens, Georgia 30602-4875
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Physiology/Endocrinology

Moderator: Dr. Drew Benson, NCSU

Room Number: B311

Monday, February 11, 2019

7:30 a.m. M1

Broiler breeder hen zona pellucida B2 protein expression in the granulosa cell and perivitelline layer

Josh Steed^{*1}, Andrew Benson¹, R Bramwell², Adam Davis¹ ¹*The University of Georgia*;

²*University of Arkansas*

7:45 a.m. M2

Gut health priming from breeders to chicks – Evidence of direct pathogen transfer and shared environments

Terry Parrott, Elizabeth Kim, Jordon Gruber^{*} *DuPont Animal Nutrition*

8:00 a.m. M3

Bacillus subtilis 29784 prevents a pro-inflammatory response in an induced inflammation condition using the Caco-2 cells model

Damien Preveraud^{*1}, Lamya Rhayat², Marc Maresca³, Erik Eckhardt², Estelle Devillard² ¹*Adisseo France SAS*; ²*Adisseo CERN*; ³*Aix Marseille University CNRS*

8:15 a.m. M4

Reproductive toxicity of RoundUp® in broiler breeder roosters

Zachery Jarrell^{*GS}, Muslah Ahammad, Andrew Benson *University of Georgia*

8:30 a.m. M5

Effect of amino acid levels during broiler breeder pullet rearing on: 2. Egg weight and characteristics from 26 to 34 wk of age

Yilmar Matta^{*1,2UG}, Edgar Oviedo-Rondon¹, Andres Ortiz^{1,2}, Ivan Ospina¹, Hernan Cordova¹, Lina Penuela^{1,2}, Miguel Chico¹, Viviana San Martin¹, Justina Calda³ ¹*North Carolina State University*; ²*Universidad del Tolima*; ³*Cobb Vantress Inc.*

8:45 a.m. M6

Incubational and embryonic temperature relationships in Ross 708 broiler hatching eggs

Lauren Lindsey^{*1UG}, Katie Elliott¹, Seyed Fatemi¹, Peter Ishola¹, Patrick Gerard², Edgar Peebles¹ ¹*Mississippi State University*; ²*Clemson University*

9:00 a.m. M7

An immunostimulatory injection on day of hatch leads to altered cellular signaling later in the grow out period in modern broiler birds

Bridget Aylward^{*1GS}, Casey Johnson¹, Iyana Admasu¹, Famatta Perry¹, Dr. Rose Whelan², Dr. Ryan Arsenault¹ ¹*Department of Animal and Food Sciences, University of Delaware*; ²*Evonik Nutrition & Care GmbH*

9:15 a.m. M8

Effect of dietary protein source and litter condition on macrophage and mitotically active cell densities in the duodenum of broiler chickens at 3 days of age

A. Jake Keel^{*UG}, Allan Calderon, Oscar Tejeda, Jessica Starkey, Charles Starkey *Auburn University*

9:30 a.m. M9

Effect of different basal culture media and sera combinations on primary broiler chicken muscle satellite cell proliferation and heterogeneity

Joshua Flees^{*GS}, Cierla McGuire Sams, Jessica Starkey *Auburn University*

9:45 a.m. M10

In ovo injection of probiotic bacteria and its influence on the broiler immune system during a coccidia challenge

Chrysta Beck^{*1GS}, Christopher McDaniel¹, Kelley Wamsley¹, G. Pharr², Aaron Kiess¹ ¹*Department of Poultry Science, Mississippi State University*; ²*Department of Basic Sciences, Mississippi State University College of Veterinary Medicine*

10:00 a.m. M11

Role of the HPT axis in the regulation of the preovulatory surge in low and high egg producing turkey hens

Kristen Brady^{*1GS}, Julie Long², Tom Porter¹ ¹*University of Maryland*; ²*USDA ARS Beltsville Agricultural Research Center*

10:15 a.m. M12

Use of shape index to determine differences of eggs from Heritage breeds vs. commercial white egg strain

Lauren Nolan^{*GS}, Anthony Pescatore, Micheal Pescatore *University of Kentucky*

10:30 a.m. Break

Processing and Products I

Moderator: Dr. Dianna Bourassa, Auburn

Room Number: B311

Monday, February 11, 2019

10:45 a.m. M13

Enhanced statistical process control systems for monitoring and predicting live operations and plant performance and pathogens

Isaac Duerr* *Smart Data Science Solutions*

11:00 a.m. M14

Impact of postmortem holding temperature on feather retention force and broiler carcass microbiology

Dianna Bourassa*¹, Caitlin Harris^{2,3}, L Bartenfeld², Stephanie Richter⁴, Wayne Daley⁴, R Buhr²

¹*Auburn University*; ²*US National Poultry Research Center, USDA-ARS*; ³*University of Georgia*;

⁴*Georgia Tech Research Institute*

11:15 a.m. M15

Whole Carcass Salt-Uptake Tendencies during Immersion Chilling

Stephanie Richter*, Daniel Sabo, Comas Haynes *Georgia Tech Research Institute*

11:30 a.m. M16

Poultry parts cooling

Aklilu G Giorges*, John Pierson *Georgia Institute of Technology*

11:45 a.m. M17

Differential effects of formaldehyde, formic acid, and mono-glycerides on carcass and meat quality traits of Cobb 700 broilers

Joshua Jendza*¹, Kristina Feye², Juan Caldas-Cueva², Barbara Mallmann², Dana Dittoe², Casey Owens², Mike Kidd², Steve Ricke² ¹*BASF Corporation*; ²*University of Arkansas*

12:00 p.m. Lunch

Processing and Products II

Moderator: Dr. Amit Morey, Auburn

Room Number: B311

Monday, February 11, 2019

1:00 p.m. M18

Survey of egg quality in commercially available table eggs

Cirenio Hisasaga*^{UG}, Sara Shinn, Katy Tarrant *Fresno State*

1:15 p.m. M19

Effect of red seaweed (*Chondrus crispus*) on laying hen eggshell thickness

Cassie Stupart*^{GS}, Bruce Rathgeber, Janice MacIsaac *Dalhousie University*

1:30 p.m. M20

Assessment of peroxyacetic acid as a post-defeathering antimicrobial intervention during broiler processing

Ella Lawley*^{UG}, Dianna Bourassa *Auburn University*

1:45 p.m. M21

A scald water detergent combined with an organic acid carcass dip reduces microbial loads on post-harvested broiler carcasses

Grayson Walker*^{1GS}, Dianna Bourassa², Rasha Qudsieh¹, Brittany Wall¹, Matthew Livingston¹

¹*North Carolina State University*; ²*Auburn University*

2:00 p.m. M22

NIRS analysis to assess the nutritional value of two corn hybrids dried at different temperatures: a comparative analysis between laboratories

Hernan Cordova-Noboa*^{GS}, Edgar Oviedo-Rondón, Ivan Ospina-Rojas, Viviana San Martin, Miguel Chico, Andres Ortiz-Diaz, Yilmar Matta-Lozano, Lina Peñuela-Sierra *Prestage Department of Poultry Science North Carolina State University*

2:15 p.m. M23

Effect of alternative lighting program and low protein starter feed on growth and meat quality parameters.

Brittany Wall*^{UG}, Matthew Livingston, Daniel Adams, Kimberly Livingston *North Carolina State University*

2:30 p.m. M24

Evaluating the effects of Functional Ice (FICE) on shelf life and quality of raw poultry meat

Jasmine Kataria*^{GS}, Avery Smith, Laura Garner, Amit Morey *Auburn University*

2:45 p.m. M25

Woody breast incidence in commercial broiler strains at various ages

Barbara A. Mallmann*^{1GS}, Ashunti Jackson², Andy Mauromoustakos¹, Casey Owens¹ ¹*University of Arkansas*; ²*Cobb-Vantress*

3:00 p.m. M26

Influence of utilizing breast meat afflicted with woody breast myopathy on sausage textural properties

Macc Rigdon*^{1GS}, Alexander Stelzleni¹, Brian Bowker², Hong Zhuang², Dean Pringle¹, Harshavardhan Thippareddi¹ ¹*University of Georgia*; ²*USDA-ARS*

3:30 p.m. USPOULTRY Presentation – Room Number B313

4:00 p.m. - 6:00 p.m. Poster Reception – Room Number B313 Foyer

Pathology

Moderator: Dr. Laura Chen, NCSU

Room Number: B312

Monday, February 11, 2019

7:30 a.m. M27

Tannins to control Salmonella in poultry

Leandro Redondo¹, Natalia Casanova¹, Enzo Redondo¹, Patricia Joaquim¹, Johana Dominguez^{1,2}, Mariano Fernandez Miyakawa^{1,2}, Pablo Chacana^{*1} ¹*Instituto Nacional de Tecnología Agropecuaria*; ²*Consejo Nacional de Investigaciones Científicas y Técnicas*

7:45 a.m. M28

Survey of Mycoplasma synoviae prevalence and economic impact in the Middle East and North Africa area

Husam Bakri*, Entisar Al-Hallaq *Vaxxinova International BV*

8:00 a.m. M29

The effects of in ovo administration of 6/85 Mycoplasma gallisepticum vaccine on layer chicken embryo hatchability and early post-hatch performance

Abdulmohsen Alqhtani^{*GS}, Scott Branton, Jeff Evans, Katie Elliott, David Peebles *Mississippi State University*

8:15 a.m. M30

Examining intestinal microenvironments using immunohistochemistry to evaluate the chicken immune response to Eimeria infection

Maria Arendt^{*GS}, Jonathan Elissa, Emily Michael, Laura Knoll, Mark Cook *University of Wisconsin - Madison*

8:30 a.m. M31

Heat stress causes inhibition of Eimeria replication in broiler chickens

Gustavo Schneiders^{*GS}, James Foutz, Alberta Foutz, Romdhane Rekaya, Samuel Aggrey *University of Georgia*

8:45 a.m. M32

Characterization of growth performance changes and lesion development in commercial toms infected with intestinal parasite Tetratrichomonas gallinarum

Kelly Grace Keen^{*GS}, Robert Beckstead *North Carolina State University*

9:00 a.m. M33

Genetic resistance to blackhead disease in commercial turkeys

Alessandro Ferrarini^{*GS}, Robert Beckstead *NORTH CAROLINA STATE UNIVERSITY*

9:15 a.m. M34

Utilization of sub-lethal bacteriostatic tetracycline co-administration for development of a novel in ovo challenge model for virulent Escherichia coli strains

Danielle Graham^{*GS}, Callie Selby, Kyle Teague, Lucas Graham, Christine Vuong, Juan Latorre, Guillermo Tellez, Billy Hargis *University of Arkansas*

9:30 a.m. M35

Supplementation of a probiotic alone or in combination with prebiotics and phytonutrients alleviates the negative impact of subclinical necrotic enteritis in broiler chickens

Nima Khodambashi Emami^{*1}, Emily Kimminau², Ali Calik¹, Mallory White¹, Aaron Oxendine¹, Rami Dalloul¹ ¹*Avian Immunobiology Laboratory, Department of Animal and Poultry Sciences, Virginia Tech*; ²*Huvepharma, Inc., 525 Westpark Drive*

9:45 a.m. M36

Stimulation of endogenous butyrate producers in the intestinal tract of broilers by in ovo exposure inoculation with lactic acid bacteria

Denise Russi-Rodrigues*, Kimberly Wilson, Whitney Briggs, Audrey Duff, Kaylin Chasser, Lisa Bielke *Ohio State University*

10:00 a.m. M37

Effects of dietary supplementation of OPTIGUT on the performance and intestinal microbiota in a necrotic enteritis challenge model in broiler chicks

Vasileios Tsiouris^{*1}, Ioanna Georgopoulou¹, Tilemachos Mantzios¹, Kostas Kiskinis¹, Angelo Lauwaerts², Giorgos Filiouis¹, Giorgos Papadopoulos¹, Paschalis Fortomaris¹ ¹*Aristotle University*; ²*Provion Industries nv*

10:15 a.m. Break

SCAD I

Moderator: Dr. Rüdiger Hauck, Auburn

Room Number: B312

Monday, February 11, 2019

10:30 a.m. M38

Comparison of the impact of monobutylin, other glycerides, and glycerol (SiloHealth 104), sodium formate (Amasil NA) and bacitracin methylene disalicylate (BMD) on intestinal and processed parts bacteria count when fed to broiler chickens challenged with mild coccidia and clostridium perfringens (Cp).

Mike Coelho^{*1}, Peter Ader^{2 1} *BASF Corporation*; ²*BASF SE*

10:45 a.m. M39

Field observations on Activo Liquid as an intervention for Clostridial Dermatitis in Turkeys

Mark Blakley*, John Smalley, Rafael Cabrera *EW Nutrition, USA*

11:00 a.m. M40

Characterizing and assessing the safety and immunogenicity of Chitosan and Polyanhydride nanoparticle vaccines loaded with Clostridium perfringens antigens.

Gabriel Akerele^{*2GS}, Renukaradhya Gourapura¹, Ramesh Selvaraj^{2 2} *University of Georgia*; ¹*Ohio State University*

11:15 a.m. M41

Novel subunit vaccine targeting Clostridium perfringens mucinases for control of necrotic enteritis in broilers

Audrey Duff^{*1GS}, Kendal Searer¹, Whitney Briggs¹, Kimberly Wilson¹, Christine Vuong², Billy Hargis², Luc Berghman³, Lisa Bielke^{1 1} *Ohio State University*; ²*University of Arkansas*; ³*Texas A&M University*

11:30 a.m. M42

Effects of glycinated zinc on host immune response to necrotic enteritis in broilers

Theros Ng^{*GS}, Ramesh Selvaraj *Department of Poultry Science, University of Georgia*

11:45 a.m. M43

Necrotic enteritis predisposed by coccidiosis: efficacy of challenge models in broilers

Shelby Curry*, G. Raj Murugesan, Chasity Pender *BIOMIN America, Inc*

12:00 p.m. Lunch

SCAD II

Moderator: Dr. Ha-Jung Roh, CEVA

Room Number: B312

Monday, February 11, 2019

1:00 p.m. M44

Evaluating effectiveness of live *Salmonella* vaccination of broilers from day of age to the carcass rinse

Charles Hofacre^{*1}, Roy Berghaus², Doug Cosby³, Mark Berrang³, Arthur Hinton, Jr.³, Kalen Cookson⁴, Manuel DaCosta⁴ ¹*Southern Poultry Research Group*; ²*University of Georgia*; ³*USDA-ARS*; ⁴*Zoetis Global Poultry*

1:15 p.m. M45

Cross protection effects of live *salmonella typhimurium* vaccination against early and late *Salmonella* spp. challenges

Manuel Da Costa^{*}, Kalen Cookson, Jean Sander, Andy McRee, Tak Niino, Jon Schaeffer, John Dickson *Zoetis - U.S. Poultry*

1:30 p.m. M46

Efficacy of chitosan based nanoparticle vaccine administration in broiler birds challenged with *Salmonella enterica* serovar enteritidis

Keila Acevedo-Villanueva^{*1GS}, Renukaradhya Gourapura², Ramesh Selvaraj¹ ¹*University of Georgia*; ²*The Ohio State University*

1:45 p.m. M47

Mucosal immunity of the broiler chicken vaccinated with nanoparticle vaccine and challenged with *Salmonella enterica* Enteritidis

Bailey Lester^{*1GS}, Ramesh Selvaraj¹, Renukaradhya Gourapura² ¹*Department of Poultry Science, University of Georgia*; ²*Food Animal Research Program, OARDC, The Ohio State University*

2:00 p.m. M48

Evaluation of a Subunit *Salmonella* Vaccine to Control and Reduce the Contamination of *Salmonella* Heidelberg in Cecae of Broiler Chickens

Igor Praxedes-Campagnoni^{*1,2GS}, Fabrizio Matte², Fábio Gazoni², Thalita Malta², Emanuel Gumina³, Sherry Layton⁴ ¹*UDESC - Universidade do Estado de Santa Catarina*; ²*Vetanco do Brasil*; ³*Vetanco SA*; ⁴*BV Science*

2:15 p.m. M49

In vitro and in vivo assessment of probiotics as an on-farm control strategy against *Campylobacter jejuni* in broilers

Mohamad Mortada^{*1GS}, Revathi Shanmugasundaram¹, G Raj Murugesan², Ramesh Selvaraj¹ ¹*The University of Georgia*; ²*BIOMIN America Inc.*

2:30 p.m. M50

Validation of ATP bioluminescence swabs to determine microbial loads in a controlled laboratory setting

Julia McElreath^{*1GS}, Brian Jordan¹, Miguel Barrios² ¹*University of Georgia*; ²*Synexis Biodefense Systems*

2:45 p.m. M51

Impact of dietary chitosan and coccidia challenge in broiler chickens

Saheed Osho^{*GS}, Olayiwola Adeola *PURDUE UNIVERSITY*

3:00 p.m. M52

Effects of glutamine supplementation on broiler performance and intestinal immune parameters during an experimental coccidiosis infection

Jarred Oxford^{*GS}, Ramesh Selvaraj *University of Georgia*

3:15 p.m. M53

Next-generation Illumina sequencing for improved speciation of common *Eimeria* species infecting chickens

Grace Albanese^{*1}, Dong-Hun Lee², Brian Jordan¹ ¹*University of Georgia*; ²*University of Connecticut*

3:30 p.m. USPOULTRY Presentation – Room Number B313

4:00 p.m. - 6:00 p.m. Poster Reception – Room Number B313 Foyer

Metabolism and Nutrition I – General Nutrition

Moderator: Dr. Chad Paulk, KSU

Room Number: B313

Monday, February 11, 2019

7:30 a.m. M54

Black Soldier Fly larvae oil and meal as dietary ingredients for laying hens

Luke Trimble^{*UG}, Arianna Ferguson, Heather Scubba, Paul Patterson, Nuket Acar *The Pennsylvania State University*

7:45 a.m. M55

Evaluation of differential scanning calorimetry to assess starch gelatinization of multi-component feed processed with different conditioner temperatures and Hygieniser retention times

Lindsey Spencer^{*GS}, Luis Avila, Allan Calderon, Danny Patino, Wilmer Pacheco, Emea Monu, Oladiran Fasina, Charles Starkey *Auburn University*

8:00 a.m. M56

Determining the influence of diet formulation, particle size, and analytical method on the crude protein predictability of Near Infrared Reflectance Spectroscopy

Caitlin Evans^{*1GS}, Nana Frempong¹, Chad Paulk¹, Thomas Nortey², Charles Stark¹ ¹*Kansas State University*; ²*University of Ghana*

8:15 a.m. M57

Effects of pellet diameter and crumble size on the growth performance and relative gizzard weight of broilers

Frank Idan^{*1GS}, Thomas Nortey², Chad Paulk¹, Scott Beyer¹, Chance Fiehler¹, Courtney Truelock¹, Christopher Delfelder¹, Charles Stark¹ ¹*Kansas State University*; ²*University of Ghana*

8:30 a.m. M58

Determining the average particle size (APS) consumed between two broiler strains (S) receiving diets varying in feed form (FF) and feed quality (FQ) and the subsequent impact on starter performance (0-6 and 0-18 d)

Andrew Brown^{*1GS}, Mark Lemons¹, Christopher McDaniel¹, Joseph Moritz², Kelley Wamsley¹ ¹*Mississippi State University*; ²*West Virginia University*

8:45 a.m. M59

Effects of corn particle size and formic acid on productive and processing performance of broilers

Andrea Rubio^{*1GS}, JT Pope¹, Joshua Jendza², Adam Fahrenholz¹ ¹*North Carolina State University*; ²*BASF*

9:00 a.m. M60

Using individual ingredients with Ark NE system in broiler diets

Katie Hilton^{*GS}, Antonio Beitia, Pramir Maharjan, Jordan Weil, Naiwin Suesuttajit, Craig Coon *University of Arkansas*

9:15 a.m. M61

Influence of coccidiosis vaccination on nutrient digestibility of feed ingredients in broilers

Alyson Gautier^{*GS}, Samuel Rochell *University of Arkansas*

9:30 a.m. M62

Supplementation of betaine in diets adequate in choline and methionine improves breast meat yield of broilers under varying experimental conditions

Kenia Mitre Herrera^{*1GS}, Brooke Bodle¹, Franco Mussini², Chance Williams³, Samuel Rochell¹ ¹*University of Arkansas*; ²*DuPont*; ³*Wayne Farms LLC*

9:45 a.m. M63

Effects of hatch basket feed and water access and hatch window on broiler performance and processing yield

Joshua Deines^{*1GS}, R Bramwell², Doug Yoho¹, Samuel Rochell¹ ¹*University of Arkansas*; ²*Jamesway Incubator Company*

10:00 a.m. Break

Metabolism and Nutrition II – General Nutrition/Enzymes/

Feed Additives

Moderator: Dr. Woo Kim, UGA

Room Number: B313

Monday, February 11, 2019

10:15 a.m. M64

Role of Biocholine on growth performance, hepatic gene expression, and adiponectin in broilers
Dima White^{*1GS}, Woo Kim¹, Shivi Maini^{2 1} *University of Georgia*; ²*Indian Herbs Specialities Ltd.*

10:30 a.m. M65

Immunometabolic influences of Salmonella enteritidis and Salmonella heidelberg in chicken macrophages

Famatta Perry^{*GS}, Ryan Arsenault, Casey Johnson *University of Delaware*

10:45 a.m. M66

Effect of broiler breeder age and different dietary oil sources on gene expression and egg fatty acid profile

Antonio Beitia^{*1GS}, Justina Caldas², Nirun Boonsinchai³, Katie Hilton¹, Pramir Maharjan¹, Nawin Suesuttajit¹, Garrett Mullenix¹, Michael Schlumbohm¹, Judith England¹, Craig Coon^{1 1} *University of Arkansas*; ²*Cobb-Vantress*; ³*Charoen Pokpham Group*

11:00 a.m. M67

Effects of inositol and gradient phytase supplementation on growth performance and meat yield of broilers from 1 to 41 days of age

Ruben Kriseldi^{*1GS}, Carrie Walk², Mike Bedford², William Dozier, III^{1 1} *Auburn University*; ²*AB Vista*

11:15 a.m. M68

Impact of calcium to available phosphorus ratio and phytase calcium matrix values on broiler live performance

Shuja Majeed^{*1GS}, Rasha Qudsieh¹, Jon Broomhead², Mike Lanahan², John Brake(t)^{1 1} *North Carolina State University*; ²*Agrivida*

11:30 a.m. M69

Effect of a combination of phytase and multi-carbohydrase on broiler growth performance and bone mineralization

Jinquan Wang^{*1GS}, Robert Patterson², Woo Kim^{1 1} *University of Georgia*; ²*Canadian Bio-system*

11:45 a.m. M70

Effects of limestone particle size, limestone source, and phytase on Ca and P digestibility in broilers

Stuart Taylor^{*1,2GS}, Micaela Sindair Black¹, Roselina Angel³, Christine Jansen van Rensburg², Peter Plumstead^{1 1} *Chemunique PTY LTD*; ³*University of Maryland*; ²*University of Pretoria*

12:00 p.m. Lunch

Metabolism and Nutrition III – Enzymes/Feed Additives

Moderator: Dr. John Boney, Penn State

Room Number: B313

Monday, February 11, 2019

1:00 p.m. M71

Effects of superdosing phytase and use of carbohydrase enzymes in low energy diets on 56 day male broiler performance and processing

Courtney Ennis^{*1GS}, Mark Jackson², Omar Gutierrez², Staci Cantley², Kelley Wamsley¹ ¹*Mississippi State University*; ²*Huvepharma, Inc.*

1:15 p.m. M72

Effects of dietary lysine and exogenous protease inclusion on turkey growth performance.

Courtney Truelock^{*1GS}, Christopher Delfelder¹, Miguel Barrios², Charles Stark¹, R Beyer¹, John Gonzalez¹, Chad Paulk¹ ¹*Kansas State University*; ²*Jefo*

1:30 p.m. M73

Effects of xylanase and xylo-oligosaccharide application in corn-soy diets on performance of male broilers fed diets with two different corn sources

Kyle Brown^{*1GS}, Austin Jasek¹, Gemma González-Ortiz², Craig Wyatt³, Tri Duong¹, Jason Lee¹ ¹*Texas A&M University*; ²*AB Vista*; ³*AB Vista NAM*

1:45 p.m. M74

Administration of refined functional carbohydrate with yeast culture improves growth performance and reduces pathogen colonization in broiler chickens

Lindy Froebel^{*1GS}, Sangita Jakular², Theresia Lavergne², Jason Lee¹, Tri Duong¹ ¹*Department of Poultry Science, Texas A&M University*; ²*Arm and Hammer Animal and Food Production*

2:00 p.m. M75

Effects of the combination of mannan-oligosaccharides and β -glucan on growth performance, intestinal morphology and immune gene expression in broilers

Po-Yun Teng^{*1GS}, Roshan Adhikari², Woo Kim¹ ¹*University of Georgia*; ²*Kerry Inc.*

2:15 p.m. M76

Pellet mill die feed retention and enzyme thermostability.

J. T. Pope^{*1GS}, Joel McAtee², Paul Steen², Adam Fahrenholz¹ ¹*North Carolina State University*; ²*AB Vista*

2:30 p.m. M77

Replacement of antibiotic growth promoters by a combination of eubiotics and an enzyme blend in broilers diets under commercial conditions.

Oscar Sanabria-Bernal^{*1GS}, Carlos Lozano-Poveda², Javier Bohórquez-Quevedo³, Douglas Korver¹ ¹*University Of Alberta*; ²*DSM Nutritional Products Colombia S.A.*; ³*Avicola San Isidro S.A. Avisid*

2:45 p.m. M78

The effect of dietary inclusions of guanidinoacetic acid on broiler performance and carcass yield

Nathaniel Barrett^{*1GS}, Paul Patterson¹, Fausto Solís², John Boney¹ ¹*The Pennsylvania State University*; ²*Wenger Feeds*

3:00 p.m. M79

Dietary methylsulfonylmethane supplementation and oxidative stress in broiler

Muhammed Shameer Abdul Rasheed^{*1GS}, Maci Oelschlager¹, Brooke Smith¹, Laura Bauer¹, Rose Whelan², Ryan Dilger¹ ¹*University of Illinois*; ²*Evonik Nutrition & Care GmbH*

3:15 a.m. M80

The effect of exogenous enzyme supplementation on performance and AME in broiler chickens challenged with coccidia vaccine, 7- and 14-days post challenge

Andrew Dunaway^{*GS}, Sunday Adedokun *University of Kentucky*

3:30 p.m. USPOULTRY Presentation – Room Number B313

4:00 p.m. - 6:00 p.m. Poster Reception – Room Number B313 Foyer

Metabolism and Nutrition IV – Vitamins/Minerals/Feed Additives

Moderator: Dr. Pratima Adhikari, MSSTATE

Room Number: B314

Monday, February 11, 2019

7:45 a.m. M81

Effect of feeding pronutrient (Alquernat Nebsui L) on hen day egg production, egg quality and small intestine histomorphology of laying hens.

Milan Sharma^{*1GS}, Carlos Domenech², Pratima Adhikari¹ ¹*Mississippi State University*; ²*Biovet S. A*

8:00 a.m. M82

Effects of FortiShell® on performance and egg shell quality of Hy-Line W-36 laying hens under late egg production (46 to 70 weeks of age)

Kolby Foltz^{*1GS}, Nicholas Evans², Michael Persia¹ ¹*Virginia Tech*; ²*PMI Nutritional Additives*

8:15 a.m. M83

Dietary supplementation of an antioxidant (EconomasE™) to ameliorate the effect of stressors on physiological parameters, intestinal morphology, intestinal integrity, and cellular immune response in broilers

Opeyemi Olojede^{*1GS}, Sunday Adedokun¹, Anthony Pescatore¹, Tuoying Ao² ¹*University of Kentucky*; ²*Alltech Inc.*

8:30 a.m. M84

Effects of riboflavin on growth performance, processing yield, and internal organ development of Ross 708 male broilers

Bo Zhang^{*GS}, Wei Zhai *Mississippi State University*

8:45 a.m. M85

Effects of the in ovo injection of vitamin D3 and 25-hydroxyvitamin D3 on immunity and small intestine morphology in broilers fed commercial or calcium and phosphorous-restricted diets

Saman Fatemi^{*1GS}, Katie Elliot¹, Abiodun Bello², Bradley Turner³, Haijun Zhang¹, Edgar Peebles¹ ¹*Mississippi State University*; ²*University of Alberta*; ³*DSM*

9:00 a.m. M86

Feed ingredient handling characteristic evaluation of lipid encapsulated versus non-encapsulated poultry vitamin and trace mineral premixes

Olivia Wedegaertner^{*1GS}, Adam Fahrenholz¹, Jean-Christophe Bodin², Jean Fontaine², Peter Ferker¹ ¹*North Carolina State University*; ²*JEFO Nutrition, Inc*

9:15 a.m. M87

Zinc requirements of broiler breeder hens

Elisa Francois^{*GS}, Sergio Vieira, Liris Kindlein, Andre Mayer, Eveline Berwanger, Thiago Noetzold *UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL*

9:30 a.m. M88

Effect of dietary supplementation of layer hens with a hydroxy-analogue of selenomethionine on performance and egg quality

Luis Avila^{*GS}, Diego Puron, Mario Sierra, L. Gabriela Aragon, Jessica Starkey, Charles Starkey *Auburn University*

9:45 a.m. Break

Metabolism and Nutrition V – Amino Acids

Moderator: Dr. Elijah Kiarie, U. of Guelph

Room Number: B314

Monday, February 11, 2019

10:00 a.m. M89

Amino acid digestibility of broilers fed diets varying in amino acid density and supplemental copper concentration from 1 to 14 days of age

Stephanie Philpot^{*1GS}, Kurt Perryman², William Dozier¹ ¹*Auburn University*; ²*Micronutrients USA, LLC*

10:15 a.m. M90

Determination of the digestible valine to lysine ratio in broilers from 1 to 14 days of age

Tanner Wise^{*1GS}, Paul Tillman², Kevin Touchette³, William Dozier III¹ ¹*Auburn University*; ²*Poultry Technical Nutrition Services LLC*; ³*Ajinomoto Animal Nutrition North America Inc.*

10:30 a.m. M91

Effect of amino acid levels during broiler breeder pullet rearing on: 1. Growth and development

Andres Ortiz^{*1,2UG}, Edgar Oviedo-Rondon¹, Ivan Ospina¹, Hernan Cordova¹, Viviana San Martin¹, Camila Alfaro^{1,2}, Gustavo Quintana^{1,2}, Ivan Cardenas^{1,2}, Miguel Chico¹, Yilmar Matta^{1,2}, Lina Penuela^{1,2}, Justina Calda³ ²*Universidad del Tolima*; ¹*North Carolina State University*; ³*Cobb Vantress Inc.*

10:45 a.m. M92

The effect of nutrient density on performance and processing yield in Cobb 700 mixed-sex broilers

Corey Johnson^{*1GS}, Rocky Latham², Rob Shirley³, Tri Duong¹, Jason Lee¹ ¹*Poultry Science Department, Texas A&M Agrilife Research*; ²*Tyson Foods*; ³*Adisseo USA, Inc.*

11:00 a.m. M93

Impact of feeding varying grower digestible lysine and energy levels to female Cobb MV × Cobb 500 broilers on 42-day growth performance and processing yield

Rosana Hirai^{*1GS}, Leonel Mejia², Cesar Coto², Justina Caldas², Christopher McDaniel¹, Kelley Wamsley¹ ¹*Mississippi State University*; ²*Cobb-Vantress*

11:15 a.m. M94

Responses of Cobb 700 broiler chickens to eight levels of digestible lysine.

Leasea Butler^{*1,2}, Andy Mauromoustakos¹, Cody Keen², Colin Scanes¹, Justina Caldas², Michael Kidd¹, Sam Rochell¹ ²*Cobb-Vantress, Inc.*; ¹*University of Arkansas*

11:30 a.m. M95

Responses of varying levels of DL-methionine and TSAA and their subsequent effects on [1-13C] methionine and [1-13C] cysteine oxidation

Jordan Weil^{*1GS}, Pramir Maharjan¹, Antonio Beitia¹, Katie Hilton¹, Nawin Suesuttajit¹, Victor Naranjo², Craig Coon¹ ¹*University of Arkansas*; ²*Evonik Nutrition & Care*

11:45 a.m. M96

Evaluating the effects of isoleucine supplementation in low crude protein amino acid fortified diets on nitrogen retention, body composition and egg production in White Shaver hens 20-48 weeks of age

Ilona Parenteau^{*1GS}, Marvin Stevenson², Elijah Kiarie¹ ¹*University of Guelph*; ²*Halchemix Canada Inc.*

12:00 p.m. Lunch

Metabolism and Nutrition VI – General Nutrition

Moderator: Dr. Raj Murugesan, Biomin

Room Number: B314

Monday, February 11, 2019

1:00 p.m. M97

Application of a high density distiller's protein in diets for turkey poult 0-42 days of age; impact on performance and nitrogen retention

Peter Williams^{*1}, Emily Burton², Dawn Scholey² ¹*Fluid Quip Process Technologies, LLC;*

²*Nottingham Trent University*

1:15 p.m. M98

Beneficial effects of different extracts of edible mushroom species on production performance of healthy and Eimeria infected commercial broiler birds

Muhammad Ullah^{*1}, Masood Akhtar¹, Mian Awais¹, Muhammad Anwar¹, Kashfa Khaliq²

¹*Bahauddin Zakariya University;* ²*Government College University*

1:30 p.m. M99

Effect of dried moringa oleifera leaves on growth and immunity of broilers

Anjum Khaliq^{*}, Kaleem Ul-Hassan, Talat Naseer *University of Veterinary and Animal Sciences*

1:45 p.m. M100

Effect of feeding spray-dried plasma in the starter diet at different doses and duration in broilers undergoing a severe health challenge

Ricardo Gonzalez-Esquerre^{*1}, Joy Campbell¹, Javier Polo¹, Vieira Sergio², Liris Kindlein², Andre Favero² ¹*APC, Inc.;* ²*Universidade Federal de Rio Grande do Sul*

2:00 p.m. M101

Growth performance of commercial breed broilers raised on imported versus commercial feed in Nigeria – A preliminary study

Akinniyi Dare^{*1}, Adelumola Oladeinde² ¹*Obafemi Awolowo University, Ile-Ife;* ²*USDA-ARS*

2:15 p.m. M102

Evaluation of flowability characteristics of feed ingredients for poultry

Ahmet Pekel^{*} *Istanbul University-Cerrahpasa*

2:30 p.m. M103

Field observation: Urease activity (Delta pH Method) versus urease activity (European Method) determined on 45 commercial soybean meal samples and correlations with trypsin inhibitor contents.

Nelson Ruiz^{*1}, Fabiola de Belalcázar², Jorge Castillo³ ¹*Nelson Ruiz Nutrition, LLC;* ²*Nutrianálisis Ltda.;* ³*Castillo Consulting, Inc.*

2:45 p.m. M104

Evaluation of the combined effect of probiotics and coccidia vaccine in coccidia-challenged broilers

Luis Valenzuela¹, Eduardo Vicuna^{*1}, Marc Pages², Martina Dardi² ¹*BIOMIN;* ²*HIPRA*

3:00 p.m. M105

The impact of mycotoxins (deoxynivalenol, fumonisin, and their combination) on performance in broiler chickens.

Jundi Liu^{*1}, Barbara Doupovec², Raj Murugesan³, Cristiano Bortoluzzi¹, Ana Villegas¹, Todd Applegate¹ ¹*Department of Poultry Science, University of Georgia;* ²*BIOMIN Research Center;* ³*BIOMIN America Inc*

3:15 p.m. M106

Trends in mycotoxin contamination in the United States corn 2015-2018

G. Raj Murugesan^{*1}, Erika Hendel¹, Paige Gott¹, Shelby Curry¹, Ursula Hofstetter² ¹*BIOMIN America, Inc.;* ²*BIOMIN Holding GmbH*

3:30 p.m. USPOULTRY Presentation – Room Number B313

4:00 p.m. - 6:00 p.m. Poster Reception – Room Number B313 Foyer

Environment Management I – Env. Factors/Bird Welfare

Moderator: Dr. Kimberly Livingston, NCSU

Room Number: B315

Monday, February 11, 2019

7:45 a.m. M107

Evaluation of the combined effects of moderate house relative humidity and increased air movement on bird health and welfare in a commercial broiler house

Connie Mou^{*GS}, Michael Czarick, Brian Fairchild *University of Georgia*

8:00 a.m. M108

Effects of dual warmth LED lights on broiler chicken performance

Douglas Aldridge^{*GS}, Colin Scanes, Michael Kidd *University of Arkansas*

8:15 a.m. M109

A new ventilation system to reduce temperature fluctuations in laying hen housing in continental climate

Yang Wang^{*GS}, Weichao Zheng, Qin Tong, Baoming Li, Gang Chen *China Agricultural University*

8:30 a.m. M110

Growth performance of four lines of chicken provided light during incubation

Janessa Henry^{*GS}, Bruce Rathgeber, Xujie Li, Janice MacIsaac *Dalhousie University*

8:45 a.m. M111

Impact of low protein starter feed and alternative lighting program on broiler performance parameters

Daniel Adams^{*GS}, Matthew Livingston, Brittany Wall, Kimberly Livingston *North Carolina State University*

9:00 a.m. M112

Evaluation of timing of hatching egg sanitization using the combination of hydrogen peroxide and ultraviolet light

Karely Cantu^{*GS}, Craig Coufal *Texas A&M University*

9:15 a.m. M113

Evaluation of dry hydrogen peroxide as a commercial hatchery sanitizer

Laura Oxford^{*1GS}, Julia McElreath¹, Miguel Barrios², Brian Jordan¹, Jeanna Wilson¹, Nelson Cox³

¹*University of Georgia*; ²*Synexis Biodefense Systems*; ³*USDA-ARS*

9:30 a.m. M114

Impact of Every-day versus Skip-a-day feeding of broiler breeder pullets during rearing to compare intestinal development and overall performance

Kelly Sweeney^{*GS}, Laura Oxford, Carla Aranibar, Woo Kim, Susan Williams, Jeanna Wilson *University of Georgia*

9:45 a.m. M115

Comparison of sites colonized in broilers through various routes when challenged with *Salmonella Enteritidis* at day 14

Lasheda Brooks^{*GS}, James Krehling, Kaicie Chasteen, Brittany Singh, Kenneth Macklin *Auburn University*

10:00 a.m. Break

Environment Management II – Stress Response/Behavior

Moderator: Dr. Yang Zhao, MSSTATE

Room Number: B315

Monday, February 11, 2019

10:15 a.m. M116

Effects of Stocking Density and Antibiotic-free Diet on Feeding and Drinking Behaviors of Broilers

Guoming Li^{*1GS}, Yang Zhao¹, Joseph Purswell², Daniel Chesser¹, John Lowe¹ ¹*Mississippi State University*; ²*USDA ARS Poultry Research Unit*

10:30 a.m. M117

EFFECT OF DIETARY CALCIUM TO NON-PHYTATE PHOSPHORUS RATIO ON GROWTH PERFORMANCE OF BROILERS RAISED UNDER LOW AND HIGH HEAT STRESS TROPICAL CONDITIONS

Lorena Ramos de Mejia^{*1GS}, Jorge Camacho², Humberto Ugalde³, Marlon Menjivar³, Emilio Cura³, Peter Ferket¹ ¹*North Carolina State University*; ²*Serv Stats Camacho & Fernandez*; ³*Cargill Protein Latin America*

10:45 a.m. M118

Amino acid chelated trace minerals reduces the severity of muscle myopathy in heat-stressed broilers

Mikayla Baxter^{*}, Sami Dridi, Elizabeth Greene, Juan David Latorre, Guillermo Tellez-Isaias, Casey Owens, Barabara Mallmann *University of Arkansas*

11:00 a.m. M119

Identification of stress related to feed restriction and the use of a probiotic to modulate breeder pullet stress.

Kristin Moncada^{*1GS}, Reagan Leger¹, Tara Price¹, Sohini Bhatia¹, Sean Davies², Suresh Pillai¹, Rosemary Walzem¹ ¹*Texas A&M University*; ²*Vanderbilt University*

11:15 a.m. M120

Antemortem detection of wooden breast in commercial broilers and association with mortality, "turtle birds", and pulmonary disease

Sesny Gall^{*1}, Hannah Sather¹, Marion Suyemoto¹, A. Sharpton², Luke Borst¹, H. Barnes¹, Rocio Crespo¹ ¹*North Carolina State University*; ²*Perdue Farms*

11:30 a.m. M121

Evaluation of electrocution, Koehnner euthanasia device, Turkey euthanasia device, and carbon dioxide gas euthanasia methods on breeder Beltsville Small White turkeys

Richard Buhr^{*1}, Caitlin Harris^{1,2}, Dianna Bourassa³, Leonie Jacobs⁴ ¹*USDA-ARS, USNPRC*; ²*The University of Georgia*; ³*Auburn University*; ⁴*Virginia Tech*

11:45 a.m. M122

Broiler chicken euthanasia by cervical dislocation: manual versus mechanical methods

Leonie Jacobs^{*1}, Dianna Bourassa², Caitlin Harris^{3,4}, R. Jeff Buhr⁴ ¹*Virginia Polytechnic Institute and State University*; ²*Auburn University*; ³*The University of Georgia*; ⁴*USDA-ARS, US National Poultry Research Center*

12:00 p.m. Lunch

Environment Management III – Env. Factors/Bird Welfare

Moderator: Dr. Maja Makagon, UCDavis

Room Number: B315

Monday, February 11, 2019

1:00 p.m. M123

Succession of broiler gastrointestinal microbiota from in ovo to harvest.

Josh Rehberger, Sam Anderson, Rebecca Wujek, Eric Vang, Evan Hutchison, Jodi Delago*, Alexandra Smith, Tom Rehberger *Arm and Hammer Animal and Food Production*

1:15 p.m. M124

The effects of downtime on key chicken production parameters

Timothy Buisker*¹, Charles Corsiglia² ¹*Smart Data Science Solutions*; ²*Foster Farms*

1:30 p.m. M125

Effect of strain and stocking density on broiler conformation, performance, and welfare

Shawna Weimer*, Darrin Karcher, Marisa Erasmus *Purdue University*

1:45 p.m. M126

Performance evaluation of fan shades in reduction of light leakage and spatial variation of illuminance in commercial broiler houses

John Linhoss*¹, Joseph Purswell², John Lowe¹, Gary Chesser¹ ¹*Mississippi State University Agricultural & Biological Engineering*; ²*Joseph Purswell*

2:00 p.m. M127

Air velocity under heat stress affects heavy broiler live performance and breast meat yield without changing meat quality or welfare parameters

Edgar Oviedo-Rondon, Hernan Cordova, Viviana San Martin, Gustavo Quintana, Camila Alfaro, Ivan Cardenas, Ivan Ospina, Miguel Chico*, Bing Cheng, Yijia Zhao, Derek West, Lingjuan Wang-Li *North Carolina State University*

2:15 p.m. M128

Effects of butyrate and botanical feed additives on the performance of broilers raised on used pine shaving litter

Mike Persia*¹, Nisana Siman-Tov¹, Haitham Yakout² ¹*Virginia Tech*; ²*Adisseo North America*

2:30 p.m. M129

Using machine learning based approaches to explore predictions in poultry production

Tristan Bond¹, Todd Kelman², Roberto Carrasco¹, Joseph Gendreau¹, Nick Barbulesco¹, Maurice Pitesky*^{1,2} ¹*AgriNerds*; ²*UC Davis School of Veterinary Medicine-Cooperative Extension*

2:45 p.m. M130

ChickenBoy: a farmer assistance system for animal welfare and farm productivity

Heiner Lehr*¹, Jörg Hartung², Johan van den Bossche¹, Maurice Mergeay¹, Daniel Rosés¹

¹*Faromatics*; ²*University of Veterinary Medicine Hannover*

3:00 p.m. M131

Examination of the impact of range, cage-free, colony systems, and conventional cage environments on the labor inputs committed to bird care for three brown egg layer strains

Kelly Brannan¹, Teresa Herman¹, Herbert Ledford¹, Anthony Thomas¹, Lisa Wilson¹, Kenneth Anderson*² ¹*NC Dept of Agriculture and Consumer Services, Piedmont Research Station*; ²*North Carolina State University, Prestage Dept of Poultry Science*

3:15 p.m. M132

Behavior of laying hens reared in cage versus aviary pullet systems

Maja Makagon*¹, Allison Pullin¹, Mieko Temple², Darin Bennett², Richard Blatchford¹

¹*University of California, Davis*; ²*California Polytechnic State University*

3:30 p.m. USPOULTRY Presentation – Room Number B313

4:00 p.m. - 6:00 p.m. Poster Reception – Room Number B313 Foyer

Metabolism and Nutrition VII – Minerals/Probiotics/Feed Additives

Moderator: Dr. Sergio Vieira, UFRGS

Room Number: B311

Tuesday, February 12, 2019

7:30 a.m. T133

Effect of in-feed supplementation of iron amino acid complex and iron sulfate on ascites mortality and blood indicators in broilers reared at high altitude.

Miguel Forat¹, Manuel Gual², Marco Rebollo^{*2}, Duarte Neves², Leonardo Linares^{2 1} *Instituto Internacional de Investigacion Animal; 2 Zinpro Corporation*

7:45 a.m. T134

Dietary iron requirements for broilers fed different mineral sources

Helvio Ferreira Júnior^{*1}, Bruno de Carvalho¹, Pedro Arnaut¹, Caroline Ferreira¹, Filipe Monteiro¹, Raully Silva¹, James Pettigrew², Horacio Rostagno¹, Melissa Hannas^{1 1} *Universidade Federal de Viçosa; 2 Alltech*

8:00 a.m. T135

The broiler breeder antioxidant vitamin status and impact on subsequent broiler performance

Frank Parks^{*}, Mike Coelho, Robert Jones *BASF Corporation*

8:15 a.m. T136

Improved growth performance response to hydroxychloride Zn and Cu partially driven by reduction in oxidative stress during growth

Oluyinka Olukosi^{*1}, Sandra van Kuijk², Yanming Han^{2 1} *University of Georgia; 2 Trouw Nutrition R & D*

8:30 a.m. T137

Physicochemical properties of ZnO correlated to their bioavailability in broilers

Denise Cardoso¹, Denise Cardoso²³, Ian Cockshott^{*3}, Nathalie Meme², Yves Chevalier¹, Agnes Narcy^{2 1} *University of Lyon; 2 INRA; 3 Animine*

8:45 a.m. T138

Is the nutritional requirement of zinc different when supplied by organic source?

Bruno Carvalho^{*1}, Helvio Ferreira Júnior¹, Diego Silva¹, Pedro Arnaut¹, James Pettigrew², Luiz Fernando Albino¹, Melissa Hannas¹, Horacio Rostagno^{1 1} *Universidade Federal de Viçosa; 2 Alltech*

9:00 a.m. T139

Performance and necrotic enteritis lesion scores of broilers fed diets supplemented with sodium bisulfate, by lowering salt, in two floor pen trials with live coccidia vaccination, used litter, and Clostridium perfringens challenge

John Pitts¹, Michael Sims², Danny Hooge^{*3 1} *Jones-Hamilton Company; 2 Virginia Diversified Research Corp.; 3 Consulting Poultry Nutritionist*

9:15 a.m. T140

In vivo collagen synthesis in Pectoralis major over different ages of bird grow-out cycle in two strains of commercial broilers

Pramir Maharjan^{*1}, Jordan Weil¹, Antonio Guerra¹, Katie Hilton¹, Nawin Suesuttajit¹, Barbara Mallmann¹, Justina Caldas², Casey Hanning¹, Craig Coon^{1 1} *University of Arkansas; 2 Cobb-Vantress, Inc.*

9:30 a.m. T141

Improving laying hens' performance by using dietary probiotic

Mohamed EL-MANYLAWI^{*}, Ahmed ABBAS *Animal Production Department, Faculty of Agriculture, Cairo University*

9:45 a.m. T142

Supplementation of Bacillus subtilis DSM 32315 in laying hen diets positively influences their production performance and intestinal microbial composition.

Bayo Sokale^{*}, Anita Menconi, James Wen *Evonik Corporation*

10:00 a.m. T143

Effects of a multi-strain direct fed microbial (Bacillus subtilis DSM 32324, DSM 32325 and Bacillus amyloliquefaciens DSM 25840), on Salmonella Enteritidis colonization in laying hens

Roland Koedijk^{*1}, Dorthe Sandvang¹, John Schleifer², Charles Hofacre³, Anée Kehlet^{1 1} *Chr. Hansen A/S; 2 Chr. Hansen Inc.; 3 Southern Poultry Research Group*

10:15 a.m. T144

Effects of fumonisins and deoxynivalenol on layer hens and the efficacy of a mycotoxin deactivating enzyme and a bacterial strain to counteract

Verena Starkl^{*1}, Barbara Doupovec², Sabine Masching¹, Dian Schatzmayr², Ursula Hofstetter¹

¹*Biomim Holding GmbH*; ²*Biomim Research Center*

10:30 a.m. T145

The effects of refined functional carbohydrates (RFCs) supplemented to laying hens on egg production and mortality under commercial conditions

Jill Nezworski^{*1}, Sangita Jalukar², Dan Karunakaran² ¹*Blue House Veterinary LLC*; ²*Arm and Hammer Animal and Food Production*

10:45 a.m. T146

The impact of feeding Black Soldier Fly Larvae on laying hen performance and egg quality

Paul Patterson^{*}, Luke Trimble, Arianna Ferguson, Heather Sciubba, Nuket Acar *Mississippi State University, The Pennsylvania State University*

11:00 a.m. Dendy Keynote Lecture – Room Number B313

Courage over Comfort - How can you cultivate food safety?

Dr. Lone Jespersen, *CULTIVATE*

12:00 p.m. SCAD Business Meeting – Room Number B313

12:00 p.m. SPSS Business Meeting – Room Number B313

SCAD III

Moderator: Dr. Kiril Dimitrov, USDA/ARS

Room Number: B312

Tuesday, February 12, 2019

8:00 a.m. T147

An investigation of variables associated with mortality in a broiler complex in Mississippi
Leslie Johnson^{*1GS}, Robert Wills¹, Brandon Carter², Phil Stayer³, Alejandro Banda¹, Natalie Armour^{1 1} *Mississippi State University*; ²*Elanco Animal Health*; ³*Sanderson Farms, Inc.*

8:15 a.m. T148

Comparison of the serological responses induced by a multivalent inactivated oil emulsion virus vaccine applied in two sites (breast intramuscular and inguinal subcutaneous), and gross evaluation of the local vaccine reaction.

Eric Orozco^{*1GS}, Phil Stayer², Erin Riley², Rob Lawhon², Alejandro Banda^{1 1} *Mississippi State University*; ²*Sanderson Farms Company*

8:30 a.m. T149

Effects of Zn and Mn amino acid complexes in the chicken responses to IBV infections

Ana Paula Da Silva^{*1GS}, Marco Rebollo², Rodrigo Gallardo^{1 1} *University of California, Davis*; ²*Zinpro Corporation*

8:45 a.m. T150

Comparison studies of a live GA08 vaccine on protection against GA13 and DMV/1639 IB viruses in SPF leghorns

Jon Schaeffer, John Dickson, Manuel Da Costa, Kalen Cookson^{*} *Zoetis*

9:00 a.m. T151

Use of sentinel broilers to isolate and identify existing populations of infectious bronchitis viruses in Northwest Arkansas

Abigail Reith^{*1}, Lloyd Keck², Kalen Cookson², Brian Jordan^{1 1} *University of Georgia MAM*; ²*Zoetis*; ²*Zoetis*

9:15 a.m. T152

Alterations in H5 highly pathogenic and low pathogenic recombinant hemagglutinin tissue tropism associated with increasing age in selected Anseriformes and Galliformes bird species
Carmen Jerry^{*1,2GS}, Christina Leyson³, David Stallknecht⁴, Monique Franca^{1,2 1} *Poultry Diagnostic and Research Center*; ³*Southeast Poultry Research Laboratory*; ⁴*Southeastern Cooperative Wildlife Disease Study*; ²*Department of Pathology, College of Veterinary Medicine*

9:30 a.m. T153

Infection and transmission of recent LPAIV H9N2 virus isolates in SPF chickens.

Elizabeth Pusch^{*}, David Suarez *Southeast Poultry Research Laboratory, U.S. National Poultry Research Center, U.S. Dept. of Agriculture, Agricultural Research Service*

9:45 a.m. T154

Cross-protection efficacy of inactivated and recombinant vaccine against different lineages of H5 high pathogenic avian influenza viruses

Miria Criado^{*}, Kateri Bertran, Donghun Lee, Lindsay Killmaster, David Swayne *USDA-ARS, Southeast Poultry Research Laboratory*

10:00 a.m. T155

Changes in the genome of an H5N8 highly pathogenic avian influenza virus after experimental infection in chickens and mallards

Christina Leyson^{*}, Sungsu Youk, Dong-Hun Lee, Kiril Dimitrov, Diane Smith, Mary Pantin-Jackwood *Southeast Poultry Research Laboratory, National Poultry Research Center, US Department of Agriculture*

10:15 a.m. T156

Avian paramyxovirus 13 replicates but does not induce cross-protective immunity in chickens against challenge with virulent Newcastle disease virus

Iryna Goraichuk^{*1,2}, Kiril Dimitrov¹, Poonam Sharma^{1,3}, Timothy Olivier¹, Patti Miller¹, David Swayne¹, Claudio Afonso¹, David Suarez^{1 1} *Southeast Poultry Research Laboratory, US National Poultry Research Center, ARS, USDA*; ²*National Scientific Center Institute of Experimental and Clinical Veterinary Medicine*; ³*Richard B. Russell Agricultural Research Center, US National Poultry Research Center, ARS, USDA*

10:30 a.m. T157

Avian reoviruses molecular characterization, looking for better classification methods
Rodrigo Gallardo*¹, Sofia Egana¹, Simone Stoute¹, HL Shivaprasad¹, Beate Crossley¹, Ha-Jung Roh² ¹*University of California, Davis*; ²*CEVA animal Health*

10:45 a.m. T158

Chicken macrophages' susceptibility and innate immune response to infectious bursal disease virus with the supplementation of 1,25(OH)₂D₃

Juan Rodriguez-Lecompte*¹, Jairo Jaime-Correa², Diana Vargas-Bermudez², Alexander Yitbarek³, Julian Reyes¹ ¹*Atlantic Veterinary College -University of Prince Edward Island*; ²*Universidad Nacional de Colombia*; ³*University of Guelph*

11:00 a.m. Dendy Keynote Lecture – Room Number B313

Courage over Comfort - How can you cultivate food safety?
Dr. Lone Jespersen, *CULTIVATE*

12:00 p.m. SCAD Business Meeting – Room Number B313

12:00 p.m. SPSS Business Meeting – Room Number B313

Metabolism and Nutrition VIII – Feed Additives

Moderator: Dr. Mahmoud Masa'deh, Devenish Nutrition

Room Number: B313

Tuesday, February 12, 2019

7:45 a.m. T159

Effect of a feed additive (EndoBan) on broiler performance

Jesse Stoops, Hilke Willemsen, Kurt Van de Mierop* *Nutrex NV*

8:00 a.m. T160

Evaluation of broilers supplemented with Bastion® feed additive and challenged with *Clostridium perfringens*

Nicholas Evans*¹, T Karnezos¹, Ronald Dvorak¹, Curtis Novak², Mahmoud Masadeh², Michael Sims³ ¹*PMI Nutritional Additives*; ²*Purina Animal Nutrition*; ³*Virginia Diversified Research Corp.*

8:15 a.m. T161

Bastion® feed additive improves performance of broilers in a commercial antibiotic-free production program

Mahmoud Masadeh*¹, Nicholas Evans², Theodore Karnezos², Curtis Novak¹ ¹*Purina Animal Nutrition*; ²*PMI Nutritional Additives*

8:30 a.m. T162

Effects of a commercial *Macleaya cordata* extract on broiler growth performance under a coccidiosis challenge

Meghan Schwartz*¹, Nickki Tillman², Marcos Rostagno¹ ¹*Phytobiotics North America, LLC*; ²*Nutritional Statistics, LLC*

8:45 a.m. T163

Use of Alquer mold Natural to treat and prevent *Clostridium perfringens* induced necrotic enteritis in broilers

David Díez¹, Carlos Domenech¹, Júlia Pié*¹, Manuel Rosemberg² ¹*Biovet, S.A.*; ²*Universidad Científica del Sur*

9:00 a.m. T164

Metallo-phytobiotics; novel weapons against *Clostridium perfringens*

Viviana Molnar-Nagy*¹, Zsófia Bata¹, József Gyenis², Valeria Stechova² ¹*BV Science Inc.*; ²*Dr. Bata Ltd.*

9:15 a.m. T165

Effect of a feed incorporated metallo-phytobiotic on the performance of broiler chickens given a non-defined challenge

Bruno Vecchi*¹, Emanuel Gumina¹, Ariel Sugezky¹, Sherry Layton² ¹*Vetanco SA*; ²*BV Science*

9:30 a.m. T166

Augmented fat soluble vitamin absorption due to phyto-genic feed additive supplementation in broiler chicks

Chasity Pender*¹, Kimberly Gardner², Christopher Bailey², Raj Murugesan¹ ¹*Biomin America, Inc.*; ²*Texas A&M University*

9:45 a.m. T167

The optimum dose level of a phyto-genic blend in diets for broilers challenged with a virulent coccidia live vaccine

Francisco Dias*, Andreas Mueller, Jan Dirk van der Klis *DeLaccon Biotechnik GmbH*

10:00 a.m. T168

Anticoccidial Efficacy of Amprolium 125 ppm Fed to Commercial Broiler Chickens Infected with a Mixture of *Eimeria maxima*

Greg Mathis¹, Emily Kimminau*² ¹*Southern Poultry Research*; ²*Huvepharma*

10:15 a.m. T169

Efficacy of different forms of benzoic acid and butyric acid in broilers subject to *Eimeria* challenge

Frances Yan*, Juxing Chen, Vivek Kuttappan, Mercedes Vazquez Anon *Novus International Inc.*

10:30 a.m. T170

Evaluating the effects of different sources of butyric acid on growth performance in broilers

Cinta Sol*¹, Mónica Puyalto¹, Juan Mallo¹, Justin Fowler² ¹*NOREL*; ²*University of Georgia*

10:45 a.m. T171

Influence of chicory root powder and zinc sulfate on meat quality and histomorphology of muscles in broilers

Habib Rehman, Mirza Usman, Hafiz Rehman, Saima Masood, Amber Zafar, Hafsa Zaneb, Saima Ashraf* *University of Veterinary and Animal Sciences Lahore*

11:00 a.m. Dendy Keynote Lecture – Room Number B313

Courage over Comfort - How can you cultivate food safety?

Dr. Lone Jespersen, *CULTIVATE*

12:00 p.m. SCAD Business Meeting – Room Number B313

12:00 p.m. SPSS Business Meeting – Room Number B313

Metabolism and Nutrition IX – Feed Additives

Moderator: Dr. Mike Persia, VTech

Room Number: B314

Tuesday, February 12, 2019

7:45 a.m. T172

The effect of in ovo injection of carbohydrates, amino acids, vitamins, and electrolytes solutions and minerals on performance of broilers

Alireza Behnamifar, Shaban Rahimi*, Mohammad Amir Karimi Torshizi, Sedigheh Shahvali
Tarbiat Modares University

8:00 a.m. T173

Digestible lysine responses of broiler chickens on growth performance and carcass traits from 14 to 35 days post-hatch

Sonia Liu^{*1}, Craig Maynard², Samuel Rochell², Justina Caldas³, Mike Kidd^{2,1} *Poultry Research Foundation, The University of Sydney*; ²*Center of Excellence for Poultry Science, University of Arkansas*; ³*Cobb-Vantress, Inc*

8:15 a.m. T174

Energy (ME)-releasing efficacy of graded levels of 6-phytase, Natuphos® E, NSPase, Natugrain® TS, and a combination of phytase + NSPase in 28 day old broilers fed corn/soy diets

Robert Jones*, Mike Coelho, Frank Parks *BASF Corporation*

8:30 a.m. T175

Effects of corn-expressed phytase, a commercial multi-enzyme product, or combination on broiler performance and tibia ash

Jonathan Broomhead^{*1}, Talman Hylton², Phil Lessard¹, Mike Lanahan¹, Michael Raab¹, Joe Moritz^{2,1} *Agrivida*; ²*West Virginia University*

8:45 a.m. T176

Influence of graded concentrations of phytase in high-phytase diets on growth performance, apparent ileal amino acid digestibility and phytate hydrolysis in broilers

C. Walk^{*1}, O. Olukosi^{2,1} *AB Vista*; ²*University of Georgia*

9:00 a.m. T177

Feeding a combination of xylanase and fermentable oligosaccharide improved feed efficiency of commercial broilers fed corn-soy based diets containing growth promoters and coccidiostats

Gilson Gomes^{*1}, Craig Wyatt¹, Amy Batal², Daniel Moore^{3,1} *AB Vista*; ²*Sanderson Farms*; ³*Colorado Quality Research*

9:15 a.m. T178

Comparative effects of a xylanase-direct-fed microbial feed additive and a commercial coccidiostat on live performance, intestinal and environmental pathogens, and apparent metabolizable energy of broilers fed corn-soy-based diets and challenged with *Clostridium perfringens* and *Eimeria* spp.

Sarah Page^{*1}, James McNaughton², Basheer Nusairat¹, James Tyus¹, Jeng-Jie Wang¹
¹*BioResource International, Inc.*; ²*AHPharma, Inc.*

9:30 a.m. T179

Effects of protease treatment on broiler chick ileal amino acid digestibility and apparent metabolizable energy

M. Persia^{*1}, N. Barrett¹, D. Burnham², A. Belakazar³, F. Mussini^{3,1} *Virginia Tech*; ²*House of Raeford*; ³*DuPont Industrial Biosciences*

9:45 a.m. T180

Evaluation of a specific vectorization of curcumin to reduce inflammatory indicators and improve growth broiler performances

Jean-Francois Gabarrou* *PHODE*

10:00 a.m. T181

Synergistic anti-inflammatory activity of fatty acids, essential oils and plant extracts in a well-proportioned mixture

Alireza Khadem^{*1,2}, Jamal Al-Saifi², Ben Letor², Markella Al-Saifi², Christos Gougoulas^{2,1} *Ghent University*; ²*Innovad SA*

10:15 a.m. T182

The impact of humic acids and essential oil based blends as alternatives of growth promoter agents in productive performance of broiler chickens in the Middle Tropical Region of Colombia Joaquín Pirateque Castellanos^{*1}, Blanca Martínez², Álvaro Uribe Serrano² ¹*National University of Colombia*; ²*Promitec Santander*

10:30 a.m. T183

Effect of the type of diet and the addition of humic substances as growth promoter in broiler chickens

S. Gomez-Rosales^{*1}, M.L. Angeles¹, Y.R. Lopez-Garcia¹, A. Dominguez-Negrete², B. Alvarez² ¹*National Center of Disciplinary Research in Animal Physiology/National Institute of Research in Forestry, Agriculture and Livestock*; ²*Faculty of Natural Sciences, Autonomous University of Queretaro*

11:00 a.m. Dendy Keynote Lecture – Room Number B313

Courage over Comfort - How can you cultivate food safety?

Dr. Lone Jespersen, *CULTIVATE*

12:00 p.m. SCAD Business Meeting – Room Number B313**12:00 p.m. SPSS Business Meeting – Room Number B313**

Metabolism and Nutrition X – Probiotics/Feed Additives

Moderator: Dr. Anita Menconi, Evonik

Room Number: B315

Tuesday, February 12, 2019

7:45 a.m. T184

Evaluation of glycerides of organic acids on the performance and intestinal quality of broiler chickens raised in an antibiotic free system.

Luiz Demattê Filho^{*1,2}, Dayana de Oliveira Pereira², Gustavo do Valle Pereira², Angelo Lauwaerts³ ¹*Korin Agricultura Ltda.*; ²*Fundação Mokiti Okada*; ³*Provion Industries NV*

8:00 a.m. T185

Comparison of Cobb700 broiler performance when fed diets containing organic acid feed amendments from d 0 to d 42

Kristina Feye^{*1}, Barbara De Almeida Mallmann², J.P. Caldas-Cueva², Dana Dittoe^{1,2}, Joshua Jendza³, Guillermo Tellez-Isaias², Casey Owens², Michael Kidd², Steven Ricke¹ ¹*University of Arkansas, Department of Food Science, Center for Food Safety*; ²*University of Arkansas, Department of Poultry Science*; ³*BASF*

8:15 a.m. T186

Yeast cell wall immunomodulatory and intestinal integrity effects on broilers challenged with *Salmonella* Enteritidis

Breno Beirão¹, Max Ingberman¹, Melina Bonato^{*2}, Liliana Borges², Ricardo Barbalho²

¹*Imunova Análises Biológicas Ltda ME.*; ²*ICC Industrial Comércio Exportação e Importação Ltda.*

8:30 a.m. T187

Engineered probiotics to reduce *Salmonella enterica* and *Clostridia* perfringens in broilers
Yiannis Kaznessis* *General Probiotics*

8:45 a.m. T188

In-vitro evaluation of a novel 3 strain *Bacillus* probiotic.

Tom Hashman^{*1}, Thomas Gaydos², Tadele Kiro², Alain Riggi³ ¹*Envera*; ²*Phileo-USA*; ³*Phileo-France*

9:00 a.m. T189

Bacillus subtilis 29784 strengthens barrier function in vitro, and rescues inflammation-dependent reduction of barrier function during trans-epithelial electrical resistance analysis.

Adam Nelson^{*1}, Stina Rikke Jensen², Sonja Christian², Karoline Sidelmann Brinch² ¹*Novozymes Biologicals*; ²*Novozymes A/S*

9:15 a.m. T190

A scientific approach to elucidate in vitro properties of the efficacious probiotic strain *Bacillus amyloliquefaciens* CECT 5940

Lorena Stannek-Goebel¹, Jessica Kleinboelting¹, Stella Moldk¹, Álvaro Ortiz García¹, Kiran Doranalli¹, Adriana Barri¹, Claudia Borgmeier², Guido Meurer², Werner Katzer³, Pelzer Stefan^{*1}

¹*Evonik Nutrition & Care GmbH*; ²*BRAIN AG*; ³*AnalytiCon Discovery GmbH*

9:30 a.m. T191

Effect of *Bacillus amyloliquefaciens* CECT 5940 on performance of broiler chickens: a meta-analysis of 8 independent research trials

Anita Menconi^{*1}, S. Maria Mendoza¹, Alvaro Ortiz², Chavalit Piriyaenjawat³, Kiran Doranalli⁴

¹*Evonik Corporation*; ²*Evonik Nutrition & Care GmbH Sucursal en España*; ³*Evonik (SEA) Pte Ltd*;

⁴*Evonik Nutrition & Care GmbH*

9:45 a.m. T192

Effect of supplementation of a *Bacillus*-based probiotic on broiler growth performance

Alain RIGGI^{*1}, Anis HEDHLI¹, Douglas CURRIE², Eric AUCLAIR¹, Ruth RASPOET¹ ¹*Phileo - Lesaffre Animal Care*; ²*Roslin Nutrition Ltd*

10:00 a.m. T193

Compatibility of a live-attenuated *Salmonella* vaccine and a new multi strain probiotic in chickens

Dorthe Sandvang¹, John Schleifer^{*2}, Roland Koedijk¹, Anée Kehlet¹ ¹*Chr. Hansen A/S*; ²*Chr. Hansen Inc.*

10:15 a.m. T194

Modification of a limestone solubility method and potential to correlate with in vivo calcium digestibility

Seon-Woo Kim¹, Roselina Angel^{*1}, Peter Plumstead², Wenting Li¹ ¹*Department of Animal and Avian Sciences, University of Maryland;* ²*Chemunique*

10:30 a.m. T195

Evaluation of different limestone sources used by the US poultry feed industry

Franco Mussini^{*}, Kenneth Wilson, Janet Remus, Elizabeth Kim, Milan Hruby *Dupont Danisco Animal Nutrition*

11:00 a.m. Dendy Keynote Lecture – Room Number B313

Courage over Comfort - How can you cultivate food safety?

Dr. Lone Jespersen, *CULTIVATE*

12:00 p.m. SCAD Business Meeting – Room Number B313

12:00 p.m. SPSS Business Meeting – Room Number B313

Poster Sessions

Moderators: Dr. Sheila Purdum, UNL and Dr. Aaron Kiess, MSSTATE

Room Number: B313 Foyer

Monday, February 11, 2019

1:00 p.m. – 6:00 p.m.

Tuesday, February 12, 2019

8:00 a.m. – Noon

Teaching, Pedagogy, Extension

P197

Piloting a Rwandan smallholder broiler production model: Leveraging public-private partnerships

Emily Urban*, Tom Gill, Dave Ader, Michael Smith *University of Tennessee Institute of Agriculture*

P198

Correlation between flock manager personality assessment and flock productivity

John Brunnuell*^{1GS}, Anthony Pescatore², Sarah Davidson¹, Joe Russell¹ ¹*EGG INNOVATIONS LLC*; ²*University of Kentucky*

P199

The Animal Food and Nutrition Consortium Established to Fund Pre-competitive Research, Outreach, and Career Development

Adam Redhead*, Peter Ferket *North Carolina State University*

Physiology, Endocrinology and Reproduction

P200

Effect of cold water on the GH, IGF-1, IL-2 and immune responses of laying hens during high ambient temperature in summer

Jong Hoon Kim, Chun Ik Lim, Muhamad Masud Rana, Kyeong Seon Ryu, Chang Won Kang* *Chonbuk National University*

P201

Investigation of the relationship between humoral and egg yolk antibodies in broiler breeder hens.

Talaat Al-Alwani*^{GS}, John Carey *Texas A&M University*

P202

Delayed access to feed impairs amino acid and carbohydrate utilization in newly hatch broiler chicks

Jason Payne*¹, Monika Proszkowiec-Weglarz², Laura Ellestad¹ ¹*University of Georgia*; ²*Animal Biosciences and Biotechnology Laboratory, United States Department of Agriculture, Agriculture Research Service, NEA*

P203

Consequences of genetic selection on metabolic regulation of skeletal health in broiler chickens.

Laura Ellestad*, Jason Payne, Brett Marshall, Grace Boothby *University of Georgia*

P204

Enteric proteomic endocrine pathway changes to day of hatch chicks after in ovo bacterial inoculation.

Michael Trombetta*^{1UG}, Kim Wilson¹, Denise Rodrigues¹, Whitney Briggs¹, Kaylin Chasser¹, Audrey Duff¹, Liwen Zhang¹, Walter Bottje², Lisa Bielke¹ ¹*The Ohio State University*; ²*University of Arkansas*

P205

Influence of enteric pioneer colonizers on canonical metabolic pathways in day of hatch chicks

Kaylin Chasser*^{1GS}, Kimberly Wilson¹, Denise Russi-Rodrigues¹, Walter Bottje², Audrey Duff¹, Whitney Briggs¹, Lisa Bielke¹ ¹*Ohio State University*; ²*University of Arkansas*

P206

The effect of genetic selection on gene expression in the developing somatotrophic axis of broilers

Lauren Vaccaro*¹, Panpradap Sinpru², Kristen Brady³, Yupaporn Chaiseha², Tom Porter³, Laura Ellestad¹ ¹*University of Georgia*; ²*Suranaree University of Technology*; ³*University of Maryland*

P207

Structural differences in the F1 preovulatory follicle between low and high egg producing turkey hens

Kristen Brady^{*1}, Julie Long², Tom Porter¹ ¹*University of Maryland*; ²*USDA ARS Beltsville Agricultural Research Center*

Processing and Products

P208

Different combinations of enrichment and plating media for detection of naturally occurring *Campylobacter* from retail chicken livers

Tori Thompson^{*UG}, Nelson Cox, Mark Berrang, Arthur Hinton, Hung-Yueh Yeh, Jodie Plumblee Lawrence, Susan Brooks *U.S. National Poultry Research Center*

P209

Mild heat treatment of chicken livers to lessen *Campylobacter* contamination

Hannah Huff^{*UG}, Mark Berrang, Nelson Cox, Richard Meinersmann, Hong Zhuang, Brian Bowker *USDA-Agricultural Research Service-U.S. National Poultry Research Center*

P210

Segmental bioelectrical impedance analysis of broiler breast fillets to detect the areas of the fillets affected with woody breast myopathy

Courtney Keeble^{*UG}, Avery Smith, Laura Garner, Brock Herron, Nickie Johnson, Olivia Brahms, Amit Morey *Auburn University*

P211

Effects of functional ice (FICE) made with common poultry processing aids to actively eliminate spoilage microorganisms during storage

Olivia Brahms^{*UG}, Jasmine Kataria, Avery Smith, Laura Garner, C. Herron, Ana-Cecilia Rush, Courtney Clay, Courtney Keeble, Elizabeth Johnson, M. Black, Amit Morey *Auburn University*

P212

Quality effects of Functional Ice (FICE) manufactured with acetic acid and phosphate on raw chicken thighs during a 3-day storage period

Ana-Cecilia Rush^{*UG}, Olivia Brahms, Jasmine Kataria, Laura Garner, Avery Smith, C. Herron, Courtney Clay, Courtney Keeble, Elizabeth Johnson, M. Black, Amit Morey *Auburn University*

P213

Characterization of *Salmonella* inhibition by ϵ -polylysine using growth curve analysis

Laney Froebel^{*UG}, Tri Duong *Department of Poultry Science, Texas A&M University*

P214

Hardness distribution within raw broiler fillets with woody breast condition during short-term storage

Xiao Sun^{*1}, Casey Owens² ¹*Chuzhou University*; ²*University of Arkansas*

P215

Dietary Supplementation of MSPTM on the incidence, gene expression and physiochemical parameters of breast muscle myopathies

Rebecca Delles^{*1}, Katie Eastridge¹, Rijin Xiao¹, Donavyn Coffey¹, Mike Ford², Karl Dawson¹, Ronan Power¹, Anthony Pescatore², Tuoying Ao¹ ¹*Alltech, Inc.*; ²*University of Kentucky*

P216

Soybean oil and antioxidants in meat color of broiler

Bruno Lala^{*}, Nara Delbem, Carolina Santos, Ana Beatriz Faitarone, Evelyn Brito, Luciana Mena, Roberto Roça *São Paulo State University - UNESP - FMVZ*

P217

Effectiveness of two commonly used antimicrobials with processed broiler samples for reduction of *Salmonella* and *Campylobacter*

Melissa Landrum^{*1}, Nelson Cox², Jeanna Wilson¹, Mark Berrang², Gary Gamble², Mark Harrison¹, Brian Fairchild¹, Woo Kim¹, Arthur Hinton³ ¹*University of Georgia*; ²*U.S. National Poultry Research Center*; ³*USDA ARS*

P218

Texture analysis of cooked woody breast meat by the temporal dominance of sensation (TDS) method

Hong Zhuang*, Debolina Chatterjee, Brian Bowker *US National Poultry Research Center*

P219

Salmonella survival in filter sterilized carcass rinse with various concentrations of cetylpyridinium chloride

Douglas Cosby*, Gary Gamble, Susan Mize, Mark Berrang, Jonathan Frye, Arthur Hinton, Jr. *U.S. Dept of Agriculture, Agriculture Research Service, U.S. National Poultry Research Center*

P220

Determination of functionality of liquid smoke fractions as all-natural antimicrobial against foodborne Salmonella spp.

Douglas Cosby*, Susan Mize¹, Mark Vanderbleek², Sara Llamas-Moya³, Roshan Adhikari²
¹*Poultry Microbiological Safety & Processing Research Unit, USDA-Agriculture Research Service;*
²*Kerry Inc;* ³*Kerry, Global Technology and Innovation Centre*

P221

Improving value and utilization of breast fillets with the wooden breast myopathy through further processing into hotdogs

Harshavardhan Thippareddi*, Edward Moore¹, Taylor Krause¹, T. Dean Pringle¹, Alexander Stelzleni¹, Hong Zhuang², Brian Bowker² ¹*University of Georgia;* ¹*University of Georgia;*
²*National Poultry Research Center, USDA Agricultural Research Service*

P222

Effects of corn kernel hardness and grain drying conditions on particle size when grinding using a roller mill or hammermill

Hernan Cordova-Noboa*, Edgar Oviedo-Rondón, Ivan Ospina-Rojas, Adam Fahrenholz, Viviana San Martin, Miguel Chico, Yilmar Matta-Lozano, Andres Ortiz-Diaz, Lina Peñuela-Sierra *Prestage Department of Poultry Science North Carolina State University*

P223

Effect of Spaghetti Meat abnormality on broiler chicken breast meat quality

Giulia Tasoniero*, Hong Zhuang, Brian Bowker *USDA-ARS*

Pathology

P224

Effect of different challenge models to induce necrotic enteritis on the intestinal microbiota of broiler chickens

Cristiano Bortoluzzi*, Bruno Serpa Vieira¹, Ana Villegas¹, Jun Liu¹, Charles Hofacre², Todd Applegate¹ ¹*University of Georgia;* ²*Southern Poultry Research Group*

P225

Evaluation of deoxycholic acid as a prophylactic treatment to prevent Histomoniasis in turkeys
Lesleigh Beer*^{GS}, Christine Vuong, Juan Latorre, Samuel Rochell, Xiaolun Sun, Guillermo Tellez, Billy Hargis *University of Arkansas*

P226

Acute fowl cholera in a flock of Ring-necked Pheasants

Laura Chen*, Doug Anderson², Oscar Fletcher¹ ¹*North Carolina State University;* ²*Georgia Poultry Laboratory Network*

P227

Changes to gut microbiome through ten days of age affected by pioneer colonizing bacteria

Emily Winson*^{UG}, Denise Rodrigues, Kimberly Wilson, Whitney Briggs, Audrey Duff, Kaylin Chasser, Lisa Bielke *The Ohio State University*

P228

Development of chicken intestinal organoid as a model to study function and disease

Mohan Acharya*, Narayan Rath² ¹*University of Arkansas;* ²*USDA/Agriculture Research Service*

P229

Gut microbiota-mediated suppression of multi-drug resistant *Salmonella* Reading and Braenderup by Diamond V Original XPC in an in vitro poultry model

Andrea Binnebose*, Tom Weigand, Cole Reedy, Joan Butler, William Chaney, Hilary Pavlidis
Diamond V

P230

Autogenous, inactivated vaccine and research techniques developed for use against inclusion body hepatitis.

Christine Vuong*, Makenly Coles¹, Lucas Graham¹, Kyle Teague¹, Brittany Graham¹, Mikayla Baxter¹, Thaina Barros¹, Juan Latorre¹, Guillermo Tellez¹, Holly Sellers², Chip Garrity³, Billy Hargis¹ ¹*University of Arkansas*; ²*University of Georgia*; ³*OK Foods*

P231

Early chick immunity after in ovo vaccination of F strain *Mycoplasma gallisepticum* and the influence of sex on the response to the vaccination

Katie Elliott*, Scott Branton², Jeffrey Evans², Edgar Peebles¹ ¹*Mississippi State University*; ²*USDA-ARS Poultry Research Unit*

P232

The effect of sodium bisulfate and coccidiostat on intestinal lesions, GUT microbiota, and growth performance of broilers

Mayam Talghari, Shaban Rahimi*, Mohammad Amir Karimi Torshizi *Tarbiat Modares University*

SCAD

P233

Evaluation of long-term immunity and protection against *Salmonella* spp by orally administered inactivated vaccine.

Emanuel Gumina*, Gonzalo Almaraz¹, Ariel Sugezky¹, Igor Praxedes-Campagnoni^{2,3}, Sherry Layton^{1,4} ¹*Vetanco SA*; ²*Vetanco Brazil*; ³*University of Santa Catarina State, Department of Animal Health*; ⁴*BV Science*

P234

Evaluating the efficacy of spray-dried plasma in mitigating intestinal colonization by *Salmonella* Typhimurium in broiler chicks

Candice Blue*, Yasin Jababu¹, Devendra Shah², Yewande Fasina¹ ¹*North Carolina Agriculture and Technical State University*; ²*Washington State University*

P235

Model development: day of challenge of *Salmonella* heidelberg in broilers

Nathaniel Ollis*, Charles Hofacre¹, Jennie Baxter¹, Roy Berghaus² ¹*Southern Poultry Research Group*; ²*University of Georgia*

P236

Screening for potential avian pathogenic *E. coli* (APEC): surveillance data from two broiler flocks

Nicolle Lima Barbieri*, Estefania Rama, Manpreet Singh, Harshavardhan Thippareddi, Catherine Logue *University of Georgia*

P237

Characterizing avian pathogenic *Escherichia coli* (APEC) associated with cellulitis in production turkeys from Iowa

Aline de Oliveira*, Nicolle Barbieri, Catherine Logue *University of Georgia*

P238

Avian Pathogenic *Escherichia coli* (APEC) Diagnostics in Georgia – Comparison of Gene Profiles with Tissue of Isolation.

Catherine Logue*, Darby Newman, Lisa Nolan, Nicolle Barbieri *University of Georgia*

P239

Effect of select Gram negative enteric strains on inflammation in broiler chicks

Kate McGovern*, Kaylin Chaser, Audrey Duff, Whitney Briggs, Denise Rodrigues, Emily Winson, Mike Trombetta, Lisa Bielke *The Ohio State University*

P240

Timing of challenge model for *Campylobacter jejune* colonization in broiler chickens
Virginia Baxter*¹, Charles Hofacre¹, Roy Berghaus² ¹*Southern Poultry Research Group;*
²*University of Georgia*

P241

Speciation of *Campylobacter* spp. isolates from poultry sources with end-point PCR and real-time PCR

Hung-Yueh Yeh*, Jodie Plumblee-Lawrence, N. Cox, T. Thompson, M. Berrang, A. Hinton, Jr., S. Brooks *USDA ARS USNPRC*

P242

Efficacy of trace mineral-amino acid complexes in a necrotic enteritis challenge model
Charles Hofacre*¹, Greg Mathis¹, Brett Lumpkins¹, Marco Rebollo², John Smith³ ¹*Southern Poultry Research Group;* ²*Zinpro Corporation;* ³*Southern Poultry Research Group*

P243

Comparison of the impact of monobutyrin, other glycerides, and glycerol (SiloHealth 104), sodium formate (Amasil NA) and bacitracin methylene disalicylate (BMD) on performance and necrotic enteritis when fed to broiler chickens challenged with mild coccidia and *clostridium perfringens* (Cp).

Mike Coelho*¹, Peter Ader² ¹*BASF Corporation;* ²*BASF SE*

P244

Evaluation of effectiveness of three probiotic products and a prebiotic to control *Clostridium perfringens* induced necrotic enteritis in broilers

Charles Hofacre*¹, Anis Hedhi², Ruth Raspoet², T.J. Gaydos³, Tadele Kiros³, Eric Audclair²
¹*Southern Poultry Research Group;* ²*Phileo - Lesaffre Animal Care - France;* ³*Phileo - Lesaffre Animal Care*

P245

Histomonas meleagridis oral inoculation of fed and fasted turkeys fails to cause blackhead disease.

Catherine Fudge*^{UG}, Elle Chadwick, Robert Beckstead *North Carolina State University*

P246

Establishing monodonal *Eimeria* spp. isolates in immunosuppressed chickens

Miranda Carrisosa*^{GS}, Kenneth Macklin, Ruediger Hauck *Auburn University*

P247

Protection efficacy of a recombinant Herpesvirus of turkey infectious laryngotracheitis (rHVT-LT) vaccine when administered at double the commercial dose

Daniel Maekawa*^{GS}, Sylva Riblet, Maricarmen García *University of Georgia*

P248

Effect of dietary spray-dried porcine plasma on humoral immune response to Newcastle disease virus vaccination in broiler chicks

Candice Blue*, Yewande Fasina *North Carolina Agriculture and Technical State University*

P249

Evolution of Mexican H7N3 highly pathogenic avian influenza viruses

Sungsu Youk*¹, Dong-Hun Lee¹, Helena Ferreira², Claudio Afonso¹, Angel Absalon³, David Swayne¹, David Suarez⁴, Mary Pantin-Jackwood¹ ¹*Agricultural Research Service, U.S. Department of Agriculture;* ²*University of Connecticut;* ³*University of Sao Paulo;* ⁴*Vaxbiotech S.C.*

Environment, Management and Animal Well-Being

P250

Effect of dual light warmth on broiler distribution, feeding and drinking behavior

Douglas Aldridge*, Colin Scanes, Michael Kidd *University of Arkansas*

P251

Behavioral response of broilers chickens fed with probiotic

Ianê Almeida*¹, Leonardo Vega², Ibiara Almeida Paz¹, Mariana Borges¹, Gustavo Chaves¹, Marconi Silva¹, Caio Ouros¹ ¹*UNESP - FMVZ - DPA;* ²*F & S Consulting*

P252

Behavioral Response of Broiler to Environmental Enrichment

Gustavo Chaves*, Ibiara Almeida Paz, Ianê Almeida, Marconi Silva, Caio Ouros, Mariana Borges, Bruno Lala *UNESP - FMVZ*

P253

In ovo injected *Bacillus subtilis* probiotic serotypes alter broiler hatchability and intestinal microflora

Josie Gamble*^{UG}, Claudia Castaneda, Kelley Wamsley, Christopher McDaniel, Aaron Kiess *Mississippi State University*

P254

Investigating temperature and humidity in a commercial poultry transport trailer.

Benjamin Zuniga*^{GS}, Trever Crowe *University of Saskatchewan, College of Agriculture and Bioresources, Department of Animal and Poultry Science*

P255

Improving brooding efficiency for small holder broiler farms in rural Rwanda

Robert Mihelic*^{GS}, Emily Urban, Brynn Voy, Tom Gill *The University of Tennessee, Knoxville*

P256

Evaluation of thermal conditioning during incubation and dietary fatty acids on broiler performance during heat stress in late rearing.

Kelly Brannan*^{1,2}, Kimberly Livingston³, Teresa Herman², Lisa Wilson², Herbert Ledford², Christine Jansen van Rensburg¹ ¹*University of Pretoria*; ³*North Carolina State University*; ²*North Carolina Department of Agriculture and Consumer Science*

P257

N-acyl-phosphatidylethanolamines (NAPEs) producing probiotic improves young broiler response to stress caused by individual housing.

Reagan Leger*¹, Kristin Moncada¹, Tara Price¹, Sohini Bhatia¹, Sean Davies², Suresh Pillai¹, Rosemary Walzem¹ ¹*Texas A&M University*; ²*Vanderbilt University*

P258

Development of on-farm euthanasia methods for individual turkeys and broilers

Caitlin Harris*^{1,2GS}, Leonie Jacobs³, Dianna Bourassa⁴, L Bartenfeld Josselson², R Buhr² ¹*University of Georgia*; ³*Virginia Tech*; ⁴*Auburn University*; ²*USDA-ARS, US National Poultry Research Center*

P259

Is scatter feeding enriching for broiler chicks?

Brittany Wood*^{GS}, Maja Makagon, Richard Blatchford *University of California, Davis*

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Linnea Tracy¹, Mieko Temple², Darin Bennett², Kim Sprayberry², Maja Makagon³, Richard Blatchford^{*3} ¹*University of Pennsylvania, Philadelphia*; ²*California Polytechnic State University*; ³*University of California, Davis*

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Thomas Cherian¹, Joy Campbell^{*2}, Saif Balios¹ ¹*Rosstown Farms*; ²*APC*

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Ronique Beckford^{*1}, Linda Farley¹, Laura Ellestad², Monika Proszkowiec-Weglarz³, Kristen Brady¹, Roselina Angel¹, H-C Liu⁴, Tom Porter¹ ¹*University of Maryland*; ²*University of Georgia*; ³*USDA ARS*; ⁴*North Carolina State University*

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Effect of a direct-fed microbial on broiler performance, paw score and carcass traits when supplemented to a feed program containing enzymes.

S. Watkins¹, J. Remus^{*2} ¹*Center of Excellent for Poultry Science, University of Arkansas*; ²*Danisco Animal Nutrition/DuPont Industrial Biosciences*

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Dexter Watts^{*1}, Joseph Purswell², H. Torbert¹, Jeremiah Davis³ ¹*USDA-ARS National Soil Dynamics Laboratory*; ²*USDA-ARS Poultry Research Unit*; ³*Department of Biosystems Engineering, Auburn University*

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Impact of water sanitation on broiler chicken production and welfare

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Changes to the poultry microbiome may mediate the anti-Salmonella effects demonstrated by Diamond V Original XPC

Kristina Feye*¹, Peter Rubinelli¹, Hilary Pavlidis², J. Byrd², W. Chaney², Don McIntyre², Steven Ricke¹ ¹*University of Arkansas, Department of Food Science, Center for Food Safety*; ²*Diamond V Mills, Inc*

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Distribution of trypsin Inhibitor and urease activity in soy products in different countries and world areas

Juxing Chen*¹, Cindy Atwell¹, Karen Wedekind¹, Jeffery Escobar², Mercedes Vazquez-Anon¹
¹*Novus International Inc*; ²*Elanco Animal Health*

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Diet mediated changed in fecal microbiome of broilers chickens consuming a combination of rye and corn based diets.

Guillermo Tellez-Isaias¹, Billy Hargis¹, Juan David Latorre¹, Peter Rubinelli¹, Sang In Lee, Stephen Bickler², Ruben Merino-Guzman³, Si Hong Park⁴, Steven Ricke¹, Kristina Feye¹, Nick Anthony¹, Mikayla Baxter*¹ ¹*University of Arkansas*; ²*University of California, San Diego*; ³*National Autonomous University of Mexico*; ⁴*Oregon State University*

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In ovo delivery of mannose-based oligosaccharides in fertile broiler eggs facilitate early intestinal cell development

Lizza Macalintal*, Rijin Xiao, Anthony Pescatore, Ronan Power, Tuoying Ao, Michael Ford, Ryan Goettl, Karl Dawson *Alltech-University of Kentucky Nutrition Research Alliance*

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Differences in Brazil, India, China and USA-origin corn AMEn estimation using near infrared transmittance technology directly linked to broiler AMEn and the Monte Carlo simulation
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Effect of the dietary inclusion of black soldier fly larvae meal on broiler performance and carcass traits

Mireille Arguelles-Ramos^{*1}, Christian Hernandez-Gracia², Gabriela Ramirez-Diaz², Tayna Carrasquillo-Santiago², Nashalisse Fernandez-Otero², Karla Rodríguez-Camacho², Jose Fonseca-Martinez², Aixa Rivera-Serrano², Lizmarie Camareno-Lozada² ¹*Department Of Animal And Veterinary Sciences, Clemson University*; ²*Department Of Animal Science, University Of Puerto Rico - Mayaguez Campus*

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Titration of spray-dried plasma in broiler starter feed on early broiler performance

Joy Campbell^{*1}, Ricardo Gonzalez-Esquerro¹, Javier Polo¹, Dan Moore² ¹*APC, Inc.*; ²*Colorado Quality Research, Inc.*

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Evaluation of dried black soldier fly larva as a feed ingredient for poultry production

Matthew Jones^{*}, Adam Davis *University of Georgia*

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Tolerance of Trans-2-Hexenal in Broilers

Kurt Richardson^{*1}, Phil McQuire¹, Carlos Millán², Inmaculada Ramírez², Marta Gracia² ¹*Anitox Corp.*; ²*Imasde Agralimentaria, S.L. C*

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Development of consolidated feed composition tables for poultry species

Andres Schlageter-Tello^{1,2}, Melissa Hannas³, Julianna Jespersen⁴, Kaylee Hahn⁴, Muhammed Shameer Rasheed⁴, Maci Oelschlager⁴, Ashley Bigge², Dani-el Hanna², Ryan Dilger^{*1,4} ¹*National Animal Nutrition Program*; ³*Universidade Federal de Viçosa*; ⁴*University of Illinois*; ²*University of Nebraska*

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Effect of levels and sources of methionine change gene expression of sulphur amino acids pathway in the kidney of chickens

Silvana Lima Dos Santos, Patricia Naves Givisiez, Danila Campos, José Filho, David Pereira Da Silva, Alexandre Moreira Filho, José Vilar Da Silva^{*} *University Federal of Paraíba*

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Effect of feeding spray-dried plasma in the starter diet for 4, 7 or 10 days at different doses on the overall performance of broilers at 42d of age

Ricardo Gonzalez-Esquerro^{*1}, Joy Campbell¹, Javier Polo¹, Sergio Vieira², Liris kindlein², Andre Favero² ¹*APC, Inc.*; ²*Universidade Federal de Rio Grande do Sul*

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Evaluating the effects of saponin and essential oils on performance of meat type quail production

Chandler Keck^{*GS}, Zack Lowman, Chris Ashwell *NC State University*

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Intermittent administration of probiotics during feed changes promotes beneficial microbiota and improves intestinal morphology and growth performance of broiler chickens

Timothy Broderick^{*1GS}, Ida Hindrichsen², Jason Lee¹, Tri Duong¹ ¹*Texas A&M University*; ²*Novozymes A/S*

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Effect of probiotic metabolite as an antibiotic replacement on performance, digestibility and immunity in broilers fed different energy diets

Fernanda Castro^{*1GS}, Sean Yang², Elizabeth Wozniak², Woo Kim¹ ¹*University of Georgia*; ²*Cytozyme Laboratories*

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Effects of Butyric Acid on performance parameters, egg quality, and nutrient utilization in young White Leghorn hens

Dani-el Hanna^{*GS}, Sheila Purdum, Napoleon Vargus-jurado *University of Nebraska-Lincoln*

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Effect of different doses of curcumin on growth performance and gut health in Eimeria-challenged and non-challenged broiler chickens

Sudhir Yadav^{*1GS}, Po-Yun Teng¹, Tatiane Santos², Lorraine Fuller¹, Woo Kim¹ ¹*University of Georgia*; ²*São Paulo State University*

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Efficacy of Butiauxella phytase on broiler performance, tibia ash, and processing parameters when using a phytase matrix which includes minerals, energy, and amino acids.

Hunter Walters^{*1GS}, Dalton Dennehy¹, Jim Wilson², Craig Coufal¹, Jason Lee¹ ¹*Texas A&M University*; ²*Danisco Animal Nutrition, DuPont Industrial Biosciences*

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The effects of medium chain fatty acids in mash and pelleted diets on growth performance of broilers.

Gage Nichols^{*GS}, Charles Stark, Cassandra Jones, R.S. Beyer, Christopher Delfelder, Michaela Braun, Haley Wecker, Caitlin Evans, Chad Paulk *Kansas State University*

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Effectiveness of canola meal on N-3 fatty acid deposition in breast and thigh meat of broiler chickens.

Josephine Foley^{*GS}, Ryan Sedlacek, Napoleon Vargas-jurado, Sheila Purdum *University of Nebraska - Lincoln*

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Effect of dietary mixture of Fenugreek (*trigonella foenum-graecum*), Garlic (*allium sativum*) and Coriander (*coriandrum sativum*) on performance of broilers

Said Ali^{*}, Abdul Hafeez, Junaid Akhtar *Agriculture University of Peshawar*

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Evolution of the ileal flora affected by phytogenic or ionophor feed supplementations on industrial broilers

Claire Girard, Thibaut Chabrilat, Sylvain Kerros^{*} *PHYTOSYNTHESE*

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Effect of target dosing phytase, Natuphos E, levels on apparent metabolizable energy in corn-soy diets fed to female turkeys

Mike Coelho^{*}, Stuart Ferry, Ken Parsons *BASF Corporation*

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Effects of PrimaLac and prototype probiotic on broiler chicken performance and body composition during a naturally occurring necrotic enteritis challenge model

Nima Khodambashi Emami^{*1}, Ali Calik¹, Mallory White¹, Aaron Oxendine¹, Mark Young², Rami Dalloul¹ ¹*Avian Immunobiology Laboratory, Department of Animal and Poultry Sciences, Virginia Tech*; ²*Star Labs/Forage Research, Inc.*

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Effect of steam pressure and conditioning temperature on phytase stability.

Courtney Truelock^{*1}, Nelson Ward², Jonathan Wilson², Charles Stark¹, Chad Paulk¹ ¹*Kansas State University*; ²*DSM Nutritional Products*

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The effect of Poulk (*Stachys schtschegleevii*) on performance and immune system of broiler chickens challenged with Infectious Bronchitis Virus

Ahad Mozaffari, Shaban Rahimi^{*}, Mahdi Ayyari *Tarbiat Modares University*

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Carbohydrases or prebiotic oligosaccharides influenced growth performance and the expression of genes related to immune function in 28-day old broilers raised on clean or dirty litter.

Allison Craig¹, Farina Khattak¹, Peter Hastie², Michael Bedford³, Oluyinka Olukosi^{*4} ¹*Scotland's Rural College*; ²*University of Glasgow*; ³*AB Vista*; ⁴*University of Georgia*

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Effect of the addition of humic acids and essential oils based blends as growth promoters in broiler chickens in Colombian Middle Tropical Region

Joaquín Pirateque Castellanos^{*1}, Blanca Martínez², Álvaro Uribe Serrano² ¹*National University of Colombia*; ²*Promitec Santander*

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Effect of dietary lipase supplementation on energy utilization of broiler chicken

Basheer Nusairat^{*1}, Belal Obeidat¹, Kamel Mahmoud¹, Serhan Haddad¹, Ahmad Al-Azzeh², Walaa Al-Yonis¹ ¹*Jordan University of science and Technology*; ²*Shenzhen A.Y.A Co., Ltd*

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Effect of *Clostridium* sp. nov. and *Lactobacillus* sp. nov. on broilers challenged with *Clostridium perfringens*

Grant Gogul^{*}, Gavin John, Adam Taylor, Allison Wells, James Gaffney, Shea Grenier-Davis, Michael Pham, Jennifer Cao, Mallory Embree *Ascus Biosciences*

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Can phytogetic additives improve the performance of broilers and replace antibiotics? A meta-analytic approach.

Gustavo Polycarpo^{*}, Gabrieli Andressa de Lima, Thaís Ávida, Valquíria Cruz-Polycarpo, Polyana Giacomini, Mariana Lira, Jonas Camporezi, Fernanda Braga *São Paulo State University - UNESP*

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Dose response evaluation of OceanFeedTM Poultry seaweed blend on growth performance, breast meat yield, and plasma biochemical profile in broiler chickens

Mohsen Mohammadigheisar¹, Victoria Shouldice¹, Jason Sands², Elijah Kiarie^{*1 1} *University of Guelph*; ²*Ocean Harvest Technology*

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In vitro degradation of soybean and sorghum anti-nutritional factors (ANFs) by a commercial mono component protease

Tine Jensen^{*}, Mads Pedersen, Lærke Haahr *Novozymes A/S*

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Evaluation of the *Bacillus subtilis* DSM32315 strain stability under different feed manufacturing processes

Anita Menconi^{*1}, Adebayo Sokale¹, Mark Daniel¹, S. Maria Mendoza¹, Rose Whelan², Kiran Doranall^{2 1} *Evonik Corporation*; ²*Evonik Nutrition and Care GmbH*

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Intestinal morphometry of broilers fed with butyric acid to replace growth promoting antibiotics

Gabriela Ventura^{*}, Gabrieli de Lima, Bárbara Barbosa, Henrique Centenaro, Bianca Cunha, Mariana Lira, Barbara Polidoro, Leonardo Zanetti, Gustavo Polycarpo, Valquíria Cruz-Polycarpo *São Paulo State University (Unesp)*

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The efficacy of the probiotic metabolites (LumensaTM: Dried *Lactobacillus acidophilus* Fermentation Product) in broilers: meta-analysis

Sean Yang^{*1}, Danny Hooze², Elizabeth Wozniak^{1 1} *Cytozyme Laboratories, Inc.*; ²*Consulting Poultry Nutritionist*

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Performance, egg quality, plasma inorganic phosphorus and tibia ash of Hy-Line brown laying hens fed different concentrations of non-phytate phosphorus with or without supplemental phytase from 40 to 60 weeks of age

Kyeong Seon Ryu^{*}, Masud M Rana, Chun Ik Lim, Ho Sung Choe *Chonbuk National University*

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Enzyme release from granulated products

Roberto Maeda¹, Diogo Rosso¹, Elisama Cella¹, Leticia Ulrich¹, Ryan Saller², Morten Tovborg^{*3} ¹*Novozymes Latin America Ltda*; ²*Novozymes North America Inc*; ³*Novozymes A/S*

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Importance of trace mineral source on digestive protease function

Eugene Kelly¹, Mark Gaffney¹, Richard Murphy¹, Rebecca Delles^{*2 1} *Alltech European Bioscience Centre*; ²*Alltech Global Headquarters*

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Betaine supplementation improves water balance and meat quality of broiler chicks

Hosam Al-tamimi, Kamel Mahmoud^{*}, Basheer Nusairat, Anas Al-Swalqeh *Jordan University of science and Technology*

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Application of labeled peptidoglycan to measure the activity of a novel muramidase
Jacqueline Chimilovski¹, Mikkel Klausen², Roberto Maeda¹, Lars Skov², Miriam Sluis^{*3}, Rual Lopez-Ulibarri⁴ ¹*Novozymes Latin America Ltda.*; ²*Novozymes A/S*; ³*Novozymes North America Inc.*; ⁴*DSM Nutritional Products AG*

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Impact of Balancius Supplementation on Broiler Performance
N. E. Ward^{*1}, A. W. Levy¹, R. D. Malheiros², P. R. Ferket³ ¹*DSM Nutritional Products*; ²*Prestage Poultry Science Dept, NC State University*; ³*North Carolina State University*

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Occurrence of wooden breast in broilers fed diets with reduction of calcium levels and two doses of phytase

Miliane da Costa¹, Pedro Rezende¹, Alexandre de Brito², Marcos Cafe^{1,3}, Jose Stringhini^{*1,3}
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Effect of essential oil based eubiotic product in improving performance and reducing intestinal lesions as well as mortality in broiler birds under necrotic enteritis challenge

Vivek A Kuttappan^{*1}, Greg Mathis², Frances Yan¹, Juxing Chen¹, Mercedes Vazquez-Anon¹
¹*Novus International Inc.*; ²*Southern Poultry Research, Inc.*

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The effect of enzyme supplementation in corn or wheat-based diets to broilers.

Cristiane Araújo^{*1}, Andre Murcio², Lucio Araujo¹, Carla Silva³, Carlos Alexandre Granghelli¹, Fabricia Roque¹, Priscila Zorzetto¹, Brunna Leite¹ ¹*University of Sao paulo*; ²*Cobb Vantrass Brazil*; ³*Agrocerees Multimix*

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The impact of Agaricus bazei mushroom extract water supplement on broiler performance
Nuket Acar^{*}, Carolyn Lamb, Paul Patterson *The Pennsylvania State University*

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Evaluation of a specific blend of oleoresins of spices and essential oils to replace an antibiotic growth promoter program on broiler performance

Jean-Francois Gabarrou^{*1}, Michael Sims², Danny Hooge³ ¹*PHODE*; ²*Virginia Diversified Research Corp.*; ³*Consulting Poultry Nutritionist*

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The effect of combinations of protease and phytase enzymes on the performance of broiler chicks fed corn or sorghum-based feed rations with limiting nutrients

Kaci Merriwether-Hawkins¹, Kenyanna Jones², Dan Seitz², C Delfelder², Scott Beyer^{*2} ¹*Tuskegee University*; ²*Kansas State University*

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Post pellet fat application using fat coater improves pellet durability index (PDI) and does not affect enzyme (phytase) recoveries when applied using post-pellet liquid application (PPLA) system

Megharaja Manangi^{*}, Matthew Deeker, Deana Hancock, Mercedes Vazquez-Anon *Novus International, Inc.*

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Protected sodium butyrate and BMD effect on broiler chickens performance, a field study
Oscar Vazquez^{*1}, Angelica Ortiz², Cinta Sol³, A.Z.M. Salem⁴, Monica Puyalto³ ¹*Norel México S.A. de C.V.*; ²*Colegio de Postgraduados*; ³*Norel S.A.*; ⁴*FMVZ-UAEM*

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Effect of Bacillus sp. nov endomicrobial supplement on growth performance and lesion score of broilers challenged with Clostridium perfringens

Gavin John^{*}, Grant Gogul, Adam Taylor, Allsion Wells, Michael Pham, Jennifer Cao, Jordan Embree, Mallory Embree *Ascus Biosciences*

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Evaluation of hydrolysed yeast in the diet of white laying hens.

Natalia Koiyama¹, Bruno Santos², Ricardo Barbalho³, Melina Bonato³, Cristiane Araujo¹, Lucio Araujo^{*1} ¹*University of Sao Paulo*; ²*Federal University of Grande Dourados*; ³*ICC Brazil*

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The effects of supplementation of Amasil NA in the diets of Cobb 700 broilers from d 0 to 14 on ileal digestibility

Kristina Feye^{*1}, Barbara de Almeida Mallmann², Dana Dittoe¹, Blaine Booher¹, Joshua Jendza³, Guillermo Tellez-Isaias², Casey Owens², Michael Kidd², Steven Ricke¹ ¹*University of Arkansas, Department of Food Science, Center for Food Safety;* ²*University of Arkansas, Department of Poultry Science;* ³*BASF*

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Effect of the addition of a fermented yeast product and coccidia challenge in broiler chickens

R.F. Cortes-Coronado¹, S.F. Gomez-Rosales², M.L. Angeles^{*2}, M.T. Casaubon-Huguenin³, T. Sørensen-Dalgaard⁴ ¹*PANCOSMA MEXICO, S.A. DE C.V.;* ²*National Center of Disciplinary Research in Animal Physiology, National Institute of Research in Forestry, Agriculture and Livestock;* ³*Poultry Science Department, University City, National Autonomous University of Mexico;* ⁴*Department of Animal Science, Aarhus University*

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Effect of an alpha-galactosidase based enzyme formulation on the performance and apparent metabolizable energy of broiler chickens: a meta-analysis

Sara Llamas Moya^{*1}, Niall Higgins¹, Roshan Adhikari², Sean Lacey³ ¹*Kerry, Global Application Center;* ²*Kerry;* ³*Dept of Mathematics, Cork Institute of Technology*

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Bacillus probiotics has the ability to inhibit E.coli in a chicken feed matrix

Dorthe Sandvang¹, Line Skjoet-Rasmussen¹, John Schleifer^{*2}, Roland Koedijk¹, Anée Kehlet¹ ¹*Chr. Hansen A/S;* ²*Chr. Hansen Inc.*

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Effect of cholecalciferol vitamin D3, calcium, phytase (Natuphos E) and NSPase (Natugrain TS), on performance, egg quality and bone strength of laying hens in extended production through 110 weeks

Robert Jones^{*}, Mike Coelho, Frank Parks *BASF Corporation*

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Effect of cholecalciferol vitamin D3, 25,hydroxycholecalciferol vitamin D3, calcium and phytase, Natuphos E, on performance, egg quality and bone strength of laying hens in extended production through 100 weeks.

Robert Jones^{*}, Mike Coelho, Frank Parks *BASF Corporation*

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Performance of broilers fed diets supplemented with an experimental direct-fed microbial in the presence of a moderate Clostridium perfringens challenge in a 42-day floor pen trial

M. D. Sims¹, T. J. Gaydos², T. Kiros³, Ruth Raspoet³, E. Audclair³, D. M. Hooge^{*4} ¹*Virginia Diversified Research Corporation;* ²*Phileo-LeSaffre Animal Care;* ³*Phileo LeSaffre Animal Care;* ⁴*Consulting Poultry Nutritionist*

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Performance and tibia ash of broilers fed diets reduced in minerals, energy and amino acids from 1 to 20 days of age, and supplemented with different dose rates of 3 commercially available phytases

Gilson Gomes^{*1}, Craig Wyatt¹, Daniel Moore² ¹*AB Vista;* ²*Colorado Quality Research*

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Effect of a feed incorporated Silymarin based phytobiotic on the performance of broiler chickens administered a non-defined challenge

Bruno Vecchi^{*1}, Emanuel Gumina¹, Ariel Sugezky¹, Sherry Layton² ¹*Vetanco SA;* ²*BV Science*

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Zinc source in broiler breeder diet affects offspring bone-specific alkaline phosphatase activity at hatch

Marquisha Paul^{*65}, Anthony Pescatore, Tuoying Ao, Michael Ford, Karl Dawson *Alltech-University of Kentucky Nutrition Research Alliance*

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Effects of Availa®Zn and Availa®Z/M and Availa®ZMC on progeny performance of 0- to 16-week-old male turkey poults, from turkey breeders fed Availa®ZMC

Colwayne Morris*^{1GS}, Leonardo Linares², Jeffre Firman¹, Marco Rebollo², Duarte Neves²

¹University of Missouri; ²Zinpro Corporation

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Evaluation of increasing levels of manganese hydroxychloride in 45 week old white leghorn laying hens on yolk and shell Mn content

Austin Jasek*^{1GS}, Kyle Brown¹, Terri Parr², Craig Coufal¹, Jason Lee¹ ¹Texas A&M University;

²Micronutrients USA LLC

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Response of broiler chickens to supplemental chelated copper, zinc and manganese or their corresponding inorganic salts

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Effect of increasing amino acid density on male broiler performance through 33 days

Kyle Smith*^{1GS}, Corey Johnson¹, Rocky Latham², Craig Coufal¹, Jason Lee¹ ¹Texas A&M University; ²Tyson Foods Inc.

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Influence of iron source (organic vs inorganic) on broiler performance under a pathogen challenge

Jack Garrett*¹, Greg Nunnery¹, James McNaughton² ¹QualiTech, Inc.; ²AHPPharma, Inc.

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Growth performance and bone characteristics of boiler chicks fed corn-soy diet supplemented with different levels of vitamin premix and different sources of mineral premix

Tuoying Ao*, Marquisha Paul, Anthony Pescatore, Lizza Macalintal, Mike Ford, Karl Dawson Alltech-University of Kentucky Nutrition Research Alliance

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Bioplex® minerals restore the acid-base and electrolyte balance in broiler chicks with nutritionally-induced metabolic acidosis

Lizza Macalintal*, Anthony Pescatore, Tuoying Ao, Michael Ford, Karl Dawson Alltech-University of Kentucky Nutrition Research Alliance

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Effect of different levels of inorganic copper and zinc on growth performance and gut health of broilers challenged with Eimeria spp.

Tatiane Santos*¹, Po-Yun Teng², Sudhir Yadav², Lorraine Fuller², José Roberto Sartori¹, Woo Kim² ¹São Paulo State University (UNESP); ²University of Georgia

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Manganese requirements for broilers fed different mineral sources

Bruno Carvalho*¹, Helvio Ferreira Júnior¹, Diego Silva¹, Pedro Arnaut¹, Raully Silva¹, James Pettigrew², Melissa Hannas¹, Horacio Rostagno¹ ¹Universidade Federal de Viçosa; ²Alltech

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Dietary copper requirements for broilers fed different mineral sources

Helvio Ferreira Júnior*¹, Bruno de Carvalho¹, Pedro Arnaut¹, Filipe Monteiro¹, Carolaine Ferreira¹, Diego da Silva¹, James Pettigrew², Horacio Rostagno¹, Melissa Hannas¹ ¹Universidade Federal de Viçosa; ²Alltech

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Dietary supplementation of an antioxidant (EconomasE™) and two sodium sources on intestinal permeability (gastrointestinal health) and apparent ileal, total tract energy, and nutrient digestibility in 21-day-old broilers challenged with dexamethasone

Opeyemi Olojede*¹, Sunday Adedokun¹, Anthony Pescatore¹, Tuoying Ao² ¹University of Kentucky; ²Alltech Inc.

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The Effect of Supplementing broilers with the BASF annual global industry vitamin supplementation survey on performance

Frank Parks*, mike coelho, Robert Jones *BASF Corporation*

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Comparison between cholecalciferol vitamin D3 and 25,hydroxycholecalciferol vitamin D3 supplementation on broiler tibia ash, tibia phosphorus and performance

Frank Parks*, mike coelho, Robert Jones *BASF Corporation*

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Evaluation of a novel threonine fermentation product in young male broilers

Dalton Dennehy*^{1UG}, Hunter Walters¹, Keith Haydon², Tri Duong¹, Jason Lee^{1,1} *Texas A&M University*; ²*CJ Bio America*

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Effects of including Valine and Isoleucine in poultry diets on pellet quality

Kara Dunmire*^{1UG}, Courtney Truelock¹, Jason Lee², Keith Haydon², Charles Stark¹, Chad Paulk¹ *Kansas State University*; ²*CJ America*

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Digestible lysine requirements during the starter phase for Cobb MVM x Cobb 700 broiler chickens.

Leasea Butler*^{1,2}, Cody Keen², Justina Caldas², Andy Mauromoustakos¹, Sam Rochell¹, Colin Scanes¹, Michael Kidd¹ *University of Arkansas*; ²*Cobb-Vantress, Inc.*

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Impact of methionine source on performance parameters of young male poult

Jason Lee*¹, Keith Haydon¹, Roy Brister², Terry Olson², Nicole Herring² *CJ America*; ²*Tyson Foods*

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Cobb 700 body weight and feed conversion response to increasing digestible lysine by growth phase.

Leasea Butler*^{1,2}, Andy Mauromoustakos¹, Cody Keen², Colin Scanes¹, Justina Caldas², Michael Kidd¹, Sam Rochell¹, Roy Brister³, Phillip Smith³, Steven Bolden⁴, Rocky Latham³, Craig Maynard¹ *Cobb-Vantress, Inc.*; ¹*University of Arkansas*; ³*Tyson Foods*; ⁴*Pilgrims*

P365

Moderate reduction in dietary crude protein concentrations enhances amino acid digestibilities and energy utilisation without compromising broiler performance while reducing water intake

Peter Chrystal¹, Victor Naranjo², Peter Selle³, Sonia Liu*³ *Baiada Poultry Pty Limited*; ²*Evonik Nutrition and Care*; ³*The University of Sydney*

USPOULTRY Presentation

B-313

Tuesday, February 11

3:30 p.m.

Chair: Dr. John Glisson, *USPoultry*

Poster Reception

B-313 Foyer

Monday, February 11

4:00 – 6:00 p.m.

Co-Chairs: Dr. Mary Beck, *Mississippi State*, and Dr. Mark Jackwood, *UGA*

Milton L. Dendy Keynote Address

B-313

Tuesday, February 12

11:00 a.m.

Dr. Lone Jespersen, *Cultivate, Hautrive NE, Switzerland*

Chair: Dr. Rüdiger Hauck, *Auburn*

SCAD Business Meeting

B-312

Tuesday, February 12

Noon

Chair: Dr. Rüdiger Hauck, *Auburn*

SPSS Business Meeting

B-313

Tuesday, February 12

Noon

Chair: Dr. April Levy, *DSM Nutritional Products*

2018 SPSS Student Awards:

Metabolism & Nutrition

Mallori Williams – TAMU

Sara Cloft – Auburn

Craig Maynard – U. ARK

Colton Caraway – NCSU

Elle Chadwick – NCSU

Andrea Rubio – Auburn

JT Pope – NCSU

Hunter Walters – TAMU

Kacey O'Donnell – MSSTATE

Environment Management

Connie Mou – UGA

Joshua Deines – U. ARK

Bryan Aguanta - UGA

Processing and Products

Brooke Bodle (Jason Lee) - TAMU

Physiology

Mathew Livingston, NCSU

Pathology

Katherine Cupo - NCSU

Posters

Haihan Zhang – VA Tech

Joshua Cassar – Penn State

Paula Johnson – U. ARK

Marquisha Paul – U. KY

Maci Oelschlager

Courtney Ennis - MSSTATE

Travel Awards

Sara Cloft - Auburn

Coltin Caraway – NCSU

Marquisha Paul – U. KY

Alltech Manuscript Award

Marouj Al-Aljeeli - TAMU

Don R. Sloan Undergraduate Research Award Recipient

Divya Srinivasan – Johns Creek HS, AL

Guillermo Tellez, UARK, Honorable Mention

Undergraduate Research Competition Participants

Divya Srinivasan, Johns Creek HS

Haley Wecker, Kansas State

Arianna Ferguson, Penn State

Trevor Lee, Auburn

Kelly Goneke, Auburn

Jimmy Cifuentes, NCSU

Tiffani Allen, MSSTATE

Chrysta Beck, MSSTATE

Kathryn Harison, UGA

Will Hamilton, Auburn

Cirenio Hisasaga, Cal State Fresno

Tori Thompson, USDA-ARS

Emanuel Gumina, U. of Buenos Aires

Katie Hackney, NSCU

Xin Chuang, NCSU

Guillermo Tellez, U ARK

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Mitchell Hoysock, Penn State

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Brittany Graham, U of Ark

Best Oral Presentation

Emily Aston, UGA

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