



2017 Symposium on Gut Health in Production of Food Animals

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Sunday, November 12

Registration
Grand Foyer
5:00 PM - 7:00 PM

Monday, November 13

Hot Breakfast Buffet
Arch View Ballroom
7:00 AM - 8:00 AM

Sponsored by King Techina Group

Registration
Grand Foyer
7:00 AM - 5:00 PM

ORAL SESSIONS

Session 1 Chair: Mike Kogut, USDA-ARS Salons A, B, C	
8:00 AM	Invited Presentation: Intracellular homeostasis and its impact in gut health and adaptation. Anne Laarman
9:00 AM	The effect of coccidiosis and decreased feed intake on growth parameters of broilers as well as the expression of genes associated with nutrient uptake . Katarzyna B. Miska* and Raymond H. Fetterer, <i>USDA/ARS, Beltsville, MD, USA.</i>
9:30 AM	Biogeographical Differences in the Influence of Maternal Microbial Sources on the Early Successional Development of the Bovine Neonatal Gastrointestinal tract. Carl J. Yeoman* ¹ , Suzanne L. Ishaq ¹ , Elena Bichi ² , Sarah K. Olivo ¹ , James Lowe ² , and Brian M. Aldridge ² , ¹ <i>Montana State University, Bozeman, MT, USA,</i> ² <i>University of Illinois, Urbana-Champaign, IL, USA.</i>
10:00 AM	Coffee Break (Grand Foyer) Sponsored by KWS Lochow GMBH
10:30 AM	Profiling the vaginal microbiome of sows of different parities. H Tran* ¹ , B de Rodas ¹ , and T Johnson ² , ¹ <i>Purina Animal Nutrition, Gray Summit, MO, USA,</i> ² <i>University of Minnesota, St. Paul, MN, USA.</i>
10:45 AM	Interaction of beef calf health, performance and environmental impact by modifying the gut through natural feed additives. David McClellan* ¹ , J. Kent Bamford ² , Robert Bechtel ³ , Kenneth Eng ⁴ , and David Hutcheson ⁵ , ¹ <i>McClellan Consulting Service, Fremont, Ne. USA,</i> ² <i>Inco Digestive, Haxtun, Co. USA,</i> ³ <i>Advanced Agricultural Testing, Baden, Ontario Canada,</i> ⁴ <i>Biolite, Winston, N.M. USA,</i> ⁵ <i>Animal Agricultural Consulting International, Scroggins, Tx. USA.</i>
11:00 AM	Interrelationship between <i>Eimeria</i> species and <i>Clostridium perfringens</i> in the chicken intestine. C. Wang*, W.-Y. Yang, H.-Y. Lu, Y.-J. Lee, and J. A'arabi, <i>Department of Basic Sciences, College of Veterinary Medicine, Mississippi State University, Mississippi State, MS, USA.</i>
11:15 AM	Transcriptome changes in neonatal calves treated with artificial dosing of rumen content from adult donor cow. Wenli Li* ¹ , Madison Cox ² , Joseph H. Skarlupka ² , Andrew J. Steinberger ² , Andrea Edwards ³ , and Christina Riehle ⁴ , ¹ <i>USDA Dairy Forage Research Center, 1925 Linden Drive, Madison, WI, 53706,</i> ² <i>Department of Microbiology, University of Wisconsin-Madison, Madison, WI, 53706,</i> ³ <i>Department of Biology, University of Wisconsin-Madison, Madison, WI, 53706,</i> ⁴ <i>Department of Genetics, University of Wisconsin-Madison, Madison, WI, 53706.</i>
11:30 AM	A <i>Bacillus</i> direct-fed microbial, alone and with protease, improves barrier integrity in an <i>in vitro</i> porcine intestinal epithelial cell culture model. Laura Payling* ¹ , Jenni Liljavirta ² , Sinikka Latvala ² , Paivi Nurminen ² , and Maria Walsh ¹ , ¹ <i>Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom,</i> ² <i>DuPont Nutrition and Health, Kantvik, Finland.</i>
11:45 AM	Effect of <i>Bacillus</i> spp. direct-fed microbial on Leaky Gut, bone mineralization, serum peptide YY levels and ammonia excretion in turkey poults fed a rye-based diet. G Tellez* ¹ , J Maguey ² , MA Michel ³ , M Baxter ¹ , G Tellez Jr ¹ , PA Moore ⁴ , S Dridi ¹ , AD Wolfenden ¹ , BM Hargis ¹ , and JD Latorre ¹ , ¹ <i>University of Arkansas, Fayetteville, AR, USA,</i> ² <i>FES Cuautitlan</i>

UNAM, Cuautitlan, Mexico, ³FCV Universidad del Nordeste, Corrientes, Argentina, ⁴USDA-ARS, Fayetteville, AR, USA.

Lunch
Arch View Ballroom
12:00 PM - 1:00 PM
Sponsored in Part by SilvaTeam

Poster Session
Grand Foyer
1:00 PM - 3:00 PM

ORAL SESSIONS

Session 2
Chair: Mike Kogut, USDA-ARS
Salons A, B, C

3:00 PM	Invited Presentation: WHY RESIST: antibiotic alternatives in swine. Crystal Loving
4:00 PM	Comparison of multiple <i>Clostridium perfringens</i> strains and their influence on necrotic enteritis. KM Wilson ¹ , WN Briggs ¹ , KM Chaser ¹ , AD Duff ¹ , JD Latorre ² , BM Hargis ² , JR Barta ³ , and LR Bielke* ¹ , ¹ Ohio State University, Columbus, OH, USA, ² University of Arkansas, Fayetteville, AR, USA, ³ University of Guelph, Guelph, ON, CA.
4:30 PM	Genetically modified <i>Lactobacillus casei</i> could be a bio-therapeutic for enteric bacterial infections. Mengfei Peng and Debabrata Biswas*, <i>Univewrsity of Maryland, College Park, MD, USA.</i>
5:00 PM	Microbial modifying properties of re-used litter and iodinated water in poultry production. Deanna Pepin* and Benjamin Willing, <i>University of Alberta, Edmonton, Alberta, Canada.</i>
5:15 PM	Aquous citrus extract supplementation impacts gut microbiota and histological parameters of broiler chicken . Redha Djezzar ¹ , Mohammed el Amine BENRBIA* ² , and Pierre Chicoteau ² , ¹ Veterinary School Algiers, Algiers, Algeria, ² Nor-Feed, Beaucauzé, France.
5:30 PM	Transcriptome changes in neonatal calves treated with artificial dosing of rumen content from adult donor cow. Wenli Li* ¹ , Madison Cox ² , Joseph H. Skarlupka ² , Andrew J. Steinberger ² , Andrea Edwards ³ , and Christina Riehle ⁴ , ¹ USDA Dairy Forage Research Center, 1925 Linden Drive, Madison, WI, 53706, ² Department of Microbiology, University of Wisconsin-Madison, Madison, WI, US, ³ Department of Biology, University of Wisconsin-Madison, ⁴ Department of Genetics, University of Wisconsin-Madison.
5:45 PM	Effect of acetic acid supplementation on gut health of broiler chickens experimentally challenged with <i>Salmonella pullorum</i>. G. Saleem* ¹ , A Aslam ¹ , M Tariq Javed ² , and Z Hayat ¹ , ¹ University of Veterinary and Animal Sciences, Lahore, Punjab, Pakistan, ² University of Agriculture, Faisalabad, Pakistan.

Reception
Arch View Ballroom
7:00 PM - 9:00 PM

Tuesday, November 14

Hot Breakfast Buffet
Arch View Ballroom
7:00 AM - 8:00 AM

Registration
Grand Foyer
7:00 AM - 5:00 PM

ORAL SESSIONS

Session 3 Chair: Mike Kogut, USDA-ARS Salons A, B, C	
8:00 AM	Invited Presentation: The Poultry Gut: Signals Integrator, Generator and Target for Intervention. Ryan Arsenault
9:00 AM	Evaluation of <i>Campylobacter jejuni</i> isolates to experimentally colonize and selective media to enumerate from poult. Matthew Sylte* ¹ , Torey Looft ¹ , Matt Inbody ¹ , Ella Meyer ¹ , Timothy Johnson ^{1,2} , Zuowei Wu ³ , Qijing Zhang ³ , and Eric Line ⁴ , ¹ USDA ARS National Animal Disease Center, Ames, Iows, USA, ² Purdue University, West Lafayette, Indiana, USA, ³ Iowa State University, Ames, Iowa, USA, ⁴ USDA ARS US National Po, Athens, GA, USA.
9:30 AM	Enteric bacterial toxin neutralization by Calibrin²-Z. F Chi ² , H Xue* ¹ , S Ching ¹ , M McPherson ¹ , S Johnston ² , E DeBoer ¹ , and R Cravens ² , ¹ Oil-Dri Corporation of America, Chicago, IL USA, ² Amlan International, Chicago, IL USA.
10:00 AM	Coffee Break (Grand Foyer) Sponsored by KWS Lochow GMBH
10:30 AM	A mixture of organic acids and botanicals ameliorates and prevents the damages induced by an inflammatory challenge in Caco-2 cell cultures. Barbara Rossi* ¹ , Benedetta Tugnoli ¹ , Andrea Piva ^{1,2} , and Ester Grilli ² , ¹ Vetagro S.p.A., Reggio Emilia, Italy, ² DIMEVET, University of Bologna, Ozzano Emilia (Bologna), Italy.
11:00 AM	Forskolin and butyrate act synergistically in protecting chickens from necrotic enteritis by inducing host defense peptide synthesis. Q Yang ¹ , K Robinson ¹ , B Chen ¹ , R Arsenault ² , and G. Zhang* ¹ , ¹ Oklahoma State University, Stillwater, OK, USA, ² University of Delaware, Newark, DE, USA.
11:30 AM	Effect of replacing antibiotic growth promoters (AGPS) with polyphenolic botanical extracts and essential oils in feed of laying hens on performance, health, ND titer and some blood parameters. abdullah ahmad tahir* ¹ , abidh hasnain ¹ , shahid waheed ¹ , omer tarar ² , and tahira ali ¹ , ¹ university of karachi, karachi sind pakistan, ² PCSIR, karachi Sind Pakistan.

Lunch
Arch View Ballroom
12:00 PM - 1:00 PM
Sponsored by Vetagro, Inc.

ORAL SESSIONS

Session 4 Chair: Mike Kogut, USDA-ARS Salons A, B, C	
1:00 PM	Invited Presentation: Favoring gastrointestinal health of pigs – benefits of dietary concepts including rye as the main cereal. Josef Kamphues
1:30 PM	Inactivation of Salmonella and Clostridium by Alquer mold Natural L - a fungicide/bactericide. Sagar Goyal* ¹ , Hamada Aboubakr ¹ , Carlos Domenech ² , Julia Pie ² , and Anna Tesouro ² , ¹ University of Minnesota, St. Paul, Minnesota, USA, ² Biovet SA, Tarragona, Spain.
2:00 PM	Spray-dried plasma – A review of a unique functional protein ingredient on intestinal health. Joy Campbell*, Javier Polo, and Joe Crenshaw, APC, Inc., Ankeny, IA USA.
2:30 PM	Use of a Novel Methodology to Validate that β-mannanase (Hemicell² HT) Reduces Feed-Induced Inflammatory Responses (FIIR) and Alters Metabolism in the Avian Gut. M.H. Kogut ¹ , R. Arsenault ² , and M.A. Martinez-Cummer* ³ , ¹ USDA, ARS, Southern Plains Research Center, College Station, TX, USA, ² University of Delaware, Newark, Delaware, USA, ³ Elanco Animal Health, Greenfield, IN, USA.
3:00 PM	Coffee Break (Grand Foyer) Sponsored by Nutriad, Inc.
3:30 PM	The effects of different feed additives on bird performance and the gastrointestinal microbiome of Salmonella-challenged broilers. T Johnson* ¹ , P Karnezos ² , N Evans ² , and M Sims ³ , ¹ University of Minnesota, Saint Paul, MN, USA, ² PMI Nutritional Additives, Shoreview, MN, USA, ³ Virginia Diversified Research Corp, Harrisonburg, VA, USA.
3:45 PM	Microbial metabolite deoxycholic acid attenuates necrotic enteritis. H Wang, JD Latorre Cardenas, G Tellez, B Hargis, and X Sun*, University of Arkansas, Fayetteville, AR, USA.
4:00 PM	Effect of synbiotic supplementation on intestinal development and integrity of broilers. C Pender* ¹ , GR Murugesan ¹ , and D Koltes ² , ¹ Biomim America Inc., San Antonio, Texas, USA, ² Iowa State University, Ames, Iowa, USA.
4:15 PM	Effects of Varium² on expression of intestinal barrier, antioxidant and pro-inflammatory cytokine genes in young broiler chickens with experimental necrotic enteritis. S Ching ² , S Oh ¹ , H Lillehoj ¹ , S Johnston ³ , M Herpfer ² , E DeBoer ² , and H Xue* ² , ¹ USDA-ARS, Beltsville, MD USA, ² Oil-Dri Corporation of America, Chicago, IL, USA, ³ Amlan International, Chicago, IL USA.
4:30 PM	Impact of exogenous carbohydrases on intestinal and peripheral inflammatory status in nursery pigs fed a higher fiber, lower energy diet. Q LI* ¹ , N Gabler ¹ , C Loving ² , C Sparks ³ , and J Patience ¹ , ¹ Iowa State University, Ames, IA, USA, ² USDA-ARS-National Animal Disease Center, Ames, IA, USA, ³ Huvepharma Inc, Peachtree City, GA 30269.

4:45 PM	Development of a chicken enterocyte culture to study its functional physiology. A Gupta* ¹ , R Liyanage ² , and N.C Rath ³ , ¹ <i>Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States</i> , ² <i>Department of Chemistry, University of Arkansas, Fayetteville, Arkansas, United States</i> , ³ <i>USDA/ARS Poultry Production and Product Safety Research Unit, Fayetteville, Arkansas, United States</i> .
5:00 PM	Morphohistological Study of the Bursae of Fabricius of Broiler Chickens during Gumboro Disease in Algeria Area. tarek khenenou*, hassina benzaoui, and farida Bouzebda-AFri, <i>Laboratory of Animal Production, Biotechnology and Health, Agroveterinary institute, Taoura, Souk Ahras university</i> .
5:15 PM	Prevention of <i>Listeria monocytogenes</i> Infection with Bioengineered Probiotic. A Bhunia*, R Drolia, S Tenguria, V Ryan, and T Bailey, <i>Purdue University, West Lafayette, IN, USA</i> .

Reception
Arch View Ballroom
7:00 PM - 9:00 PM

Wednesday, November 15

Hot Breakfast Buffet
Arch View Ballroom
7:00 AM - 8:00 AM

Registration
Grand Foyer
7:00 AM - 12:00 PM

Session 5
Chair: Mike Kogut, USDA-ARS
Salons A, B, C

8:00 AM	Characterization of cecal microbiome in broilers fed diets with tannins extracted from <i>Schinopsis lorentzii</i> (Argentine quebracho) and <i>Castanea sativa</i> (Italian chestnut). J Diaz Carrasco ² , E Redondo ² , N Pin Viso ² , L Eedondo ² , M Farber ^{1,2} , and M Fernandez Miyakawa* ^{1,2} , ¹ <i>National Institute of Agricultural Technology (INTA), Hurlingham, Buenos Aires, Argentina</i> , ² <i>National Scientific and Technical Research Council (CONICET), Buenos Aires, Argentina</i> .
8:30 AM	Effects of Feed Additives in Alleviating Enteric Health Challenges in Broilers. Juxing Chen*, Frances Yan, Vivek Kuttappan, and Mercedes Vázquez-Añón, <i>Novus International Inc, 20 Research Park Dr, St. Charles, MO 63304</i> .
9:00 AM	In-depth Analysis of Mycotoxin Contamination in US Feed and Feed Ingredients from 2014 to 2017. E. Hendel* ¹ , T. Jenkins ² , P. Gott ¹ , and G.R. Murugesan ¹ , ¹ <i>Biomin America Inc., San Antonio, TX, USA</i> , ² <i>Biomin Holding GmbH, Getzersdorf, Austria</i> .

9:30 AM	<p>Feed Efficiency Phenotypes In Lambs Involve Changes In Ruminal, Colonic, And Small Intestine-Located Microbiota. Katheryn Perea, Katharine Perz, Sarah K. Olivo, Andrew Williams, Medora Lachman, Suzanne Ishaq, Jennifer Thomson, and Carl J. Yeoman*, <i>Montana State University, Bozeman, MT, USA.</i></p>
10:00 AM	<p>Coffee Break (Grand Foyer).</p>
10:30 AM	<p>Effects of chestnut wood extract (by water) or microencapsulated dry extract and blend of monoglycerides of butyric acid (in feed) on live performance and gut health of broiler chickens. Janez Ponebsek¹, Paul Martin^{*2}, and Danny Hooge³, ¹<i>Tanin Sevnica, Sevnica, Slovenia,</i> ²<i>Imogene Ingredients, Des Moines, IA USA,</i> ³<i>Consulting Poultry Nutritionist, Eagle Mountain, UT USA.</i></p>
10:45 AM	<p>Evaluation of rye versus corn as a source of energy on the microbiome in different sections of the gastrointestinal track of broiler chickens. M. F. A. Baxter^{*1}, J. D. Latorre¹, S. H. Park^{1,2}, S. C. Ricke¹, X. Sun¹, B. M. Hargis¹, and G. Tellez¹, ¹<i>University of Arkansas, Fayetteville, AR, United States,</i> ²<i>Oregon State University, Corvallis, OR, United States.</i></p>
11:00 AM	<p>Effect of probiotic supplementation on gut health and performance of heifer calves. R. Gardinal¹, C. A. F. Oliveira¹, J. F. A. Koch¹, B. Mazzer^{*1}, F. C. Horta¹, F. O. Roberti Filho¹, and V. Vetvicka², ¹<i>Department of Research and Development, Biorigin Company, Lençóis Paulista, SP, Brazil,</i> ²<i>Department of Pathology, University of Louisville, Louisville, KY, USA.</i></p>
11:15 AM	<p>Effect of exogenous nucleotide supplementation on gut health and performance of newly weaned piglets. R. Gardinal¹, C. A. F. Oliveira¹, J. F. A. Koch¹, B. Mazzer^{*1}, F. C. Horta¹, F. O. Roberti Filho¹, and V. S. Cantarelli², ¹<i>Department of Research and Development, Biorigin Company, Lençóis Paulista, SP, Brazil,</i> ²<i>Department of Animal Sciences, University of Lavras, Lavras, MG, Brazil.</i></p>
11:30 AM	<p>The effects of phytase super dosing in combination with xylanase on jejunum and ileum mucosa morphology in market turkey hens. M Herchler[*], S Black, R Malheiros, and P Ferket, <i>North Carolina State University, Raleigh, NC, USA.</i></p>
11:45 AM	<p>Risks involved in the use of Enrofloxacin for Salmonella Enteritidis or Salmonella Heidelberg in commercial poultry. G Tellez^{*1}, E Morales², Vivian Luca³, O Prado⁴, BM Hargis¹, and JD Latorre¹, ¹<i>University of Arkansas, Fayetteville, AR, USA,</i> ²<i>Universidad Autonoma Metropolitana, Mexico City, Mexico,</i> ³<i>Universidade Federal de Santa Maria, Santa Maria, RS, Brazil,</i> ⁴<i>Universidad de Colima, Colima, Mexico.</i></p>

POSTER PRESENTATIONS

<p>Poster Session Grand Foyer</p>	
<p>Identification of the ileal, cecal, tracheal, and litter microbiomes in antibiotic-free commercial broilers and their correlations with performance. B Youmans^{*1}, C Cremers², T Karnezos³, N Evans³, and T Johnson¹, ¹<i>University of Minnesota, St Paul, MN USA,</i> ²<i>Pilgrim's Pride, Sauk Rapids, MN USA,</i> ³<i>PMI Nutritional Additives, Shoreview, MN USA.</i></p>	
<p>Dietary supplementation of late pregnancy diet with yeast derivatives (mannan oligosaccharide) can influence the colostrum yield, colostrum composition and gut performances of sow. Shah Hasan^{*1}, Sami Junnikkala², Olli Peltoniemi¹, and Claudio Oliviero¹, ¹<i>Department of Production Animal Medicine, University of Helsinki, Helsinki, Finland,</i> ²<i>Department of Veterinary Biosciences, University of Helsinki, Helsinki, Finland.</i></p>	

<p>Effects of a malabsorptive rye diet on growth and adipose tissue in commercial broilers. L Reber*¹, M.F.A. Baxter¹, B.M. Hargis¹, G. Tellez¹, and D.A. Koltes², ¹University of Arkansas, Fayetteville, AR, USA, ²Iowa State University, Ames, IA, USA.</p>
<p>Effects of Noni-Supplemented Diet on Tight Junction Protein Expression in Broiler Chickens Exposed to Heat Stress. Guillermo Tellez*¹, Elizabeth Greene¹, Joshua Flees¹, Anamika Gupta², Rath Narayan², Walter Bottje¹, and Sami Dridi¹, ¹University of Arkansas, Fayetteville, Arkansas, USA, ²USDA-ARS, Fayetteville, Arkansas, USA.</p>
<p>Bovine colostrum increases the viability and the healing process of IPEC-J2 intestinal porcine epithelial cells while modulating the barrier function and Escherichia coli-mediated inflammatory responses. M Bouchard*^{1,2}, M Blais², K Deschenes², G Robitaille³, Y Arcand³, C Asselin¹, and M Lessard², ¹Université de Sherbrooke, Département d'anatomie et de biologie cellulaire, Sherbrooke, Québec, Canada J1E 4K8, ²Sherbrooke Research and Development Centre, Agriculture and Agri-food Canada, Sherbrooke, Québec, Canada J1M 0C8, ³St-Hyacinthe Research and Development Centre, Agriculture and Agri-food Canada, St-Hyacinthe, Québec, Canada J2S 8E3.</p>
<p>Effects of Original XPC Ultra and BMD on bacterial antibiotic resistance and litter microbial community composition in the commercial turkey litter environment. A Wakil*, B Youmans, C Flores-Figueroa, J Munoz-Aguayo, and T Johnson, University of Minnesota, St Paul, MN USA.</p>
<p>Development of Swine Enteroids: a Novel Tool for Animal Science Research. M.P. Trudeau*, P.E. Urriola, G.C. Shurson, and M. Saqui-Salces, University of Minnesota, St. Paul, Minnesota, United States.</p>
<p>Bacillus subtilis probiotic prevents heat-related complications in animals. HA Giblot Ducray*¹, L Globa¹, O Pustovyy¹, M Roberts², D Pascoe², V Vodyanoy¹, and I Sorokulova¹, ¹Department of Anatomy, Physiology, and Pharmacology, Auburn University, Auburn, Alabama, USA, ²School of Kinesiology, Auburn University, Auburn, Alabama, USA.</p>
<p>Evaluation of Actisaf and Safmannan effects on gastrointestinal microbiota in cecal and ileum contents of chicken broiler. S.A. Kim¹, P. Rubinelli¹, S.H. Park², T. Gaydos*³, J. Corley³, R. Raspoet³, and S.C. Ricke¹, ¹Center for Food Safety and Department of Food Science, University of Arkansas, Fayetteville, AR, USA 72704, ²Department of Food Science and Technology, Oregon State University, Corvallis, OR, USA 97331, ³Phileo Lesaffre Animal Care, Milwaukee, WI, USA 53214.</p>
<p>Mode of caffeic acid phenyl ester (CAPE) inhibition of gut bacterial bile salt hydrolase: implications for gut health and nutrient absorption in poultry. A Volland* and J.M Ridlon, University of Illinois at Urbana-Champaign, Urbana, IL USA.</p>
<p>Characterization of clostridia in Beef Cattle throughout production in natural and conventional settings. J.S. Thompson*, J. Schissel, M.N. Griffin, and T.G. Rehberger, Arm & Hammer Animal Nutrition, Waukesha, WI, United States.</p>
<p>Development of an antiviral feed additive to protect suckling pigs against porcine epidemic diarrhea virus infection using lactic acid bacteria. H.J. Moon*, K.M. Lee, Y.T. Jang, H.Y. Kim, S.H. Kim, and J.-S. Eun, Feed & Livestock Research Institute, CJ CheilJedang.</p>
<p>Systemic immunomodulatory effect of Bacillus subtilis and Lactobacillus plantarum probiotics compared to an antibiotic supplemented in milk replacer fed to dairy calves. J. Christianson*¹, J. O'Neill¹, H. Chester-Jones², D. Ziegler², and E. Davis¹, ¹Arm&Hammer Animal Nutrition, Waukesha, WI, USA, ²University of Minnesota, Southern Research and Outreach Center, Waseca, MN, USA.</p>
<p>The protective effects of BUTIPEARL™ Z during a porcine epidemic diarrhea viral infection in piglets. Venkatesh Mani*¹, Jon Rubach¹, Shelby Curry², Nick Gabler², and Mitch Poss¹, ¹Kemin Industries, Des Moines, IA, ²Department of Animal Science, Iowa State University, Ames, IA.</p>
<p>Evaluation of performance and intestinal health of coccidiosis vaccinated broilers fed dietary tannic acid extract formulations.</p>

<p>Rachel Tonda*¹, Jon Rubach¹, Brett Lumpkins², Greg Mathis², and Mitch Poss¹, ¹<i>Kemin Industries, Des Moines, IA</i>, ²<i>Southern Poultry Research, Athens, GA</i>.</p>
<p>Effect of quercetin on cecal microbiota in Arbor Acre broilers. Shengnan Wang, Bo Zhou, Jiaying Yao, Mi Wang, Fenglin Xiao, Jiabin Yang, and Yao Li*, <i>Northeast Agricultural University, Harbin, Heilongjiang Province, China</i>.</p>
<p>Mechanism of action quercetin improving apparent metabolic rate of dietary protein in Arbor Acre broilers. Bo Zhou, Mi Wang, Shengnan Wang, Jiaying Yao, Jiabin Yang, Fenglin Xiao, and Yao Li*, <i>Institute of Animal Nutrition, Northeast Agricultural University, Harbin, Heilongjiang Province, China</i>.</p>
<p>Effect of butyric acid glycerol esters on ileum and cecal microflora in chickens challenged with <i>Eimeria maxima</i>. M Proszkowiec-Weglarz*¹, K.B Miska¹, L Schreier¹, T Stout², R. Sygall², C.J Grim³, and K.G Jarvis³, ¹<i>USDA-ARS, Beltsville, MD, USA</i>, ²<i>Perstorp, Waspik, Netherlands</i>, ³<i>Office of Applied Research and Safety Assessment, Center for Food Safety and Applied Nutrition, FDA, Laurel, MD, USA</i>.</p>
<p>Quercetin promoting protein absorption and synthesis in porcine intestinal epithelial cells. Jiaying Yao, Bo Zhou, Fenglin Xiao, Mi Wang, and Yao Li*, <i>Northeast Agricultural University</i>.</p>
<p>Neonatal supplementation with bovine colostrum, vitamins A and D and copper modulates piglets' immune system in the peri-weaning period. Luca Lo Verso*¹, Jacques Matte¹, Guylaine Talbot¹, Jérôme Lapointe¹, Nathalie Bissonnette¹, Frédéric Guay², Bazoumana Ouattara¹, Uanderson Luna³, Mylène Blais¹, and Martin Lessard¹, ¹<i>Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada</i>, ²<i>Université Laval, Quebec, QC, Canada</i>, ³<i>Universidade Federal de Mato Grosso, Brazil</i>.</p>
<p>Butter and cheddar decrease inflammatory markers and modulate gene expression in intestinal, hepatic and adipose tissues of growing pigs fed a high fat diet. Mylene Blais*¹, Jose Luis Martinez Gonzalez², Yves Pouliot², Sylvie Gauthier², Yvan Boutin³, Denis Roy², André Marette², Claude Asselin⁴, and Martin Lessard^{1,2}, ¹<i>Sherbrooke R & D Centre, Sherbrooke, Quebec, Canada</i>, ²<i>INAF, Université Laval, Quebec city, Quebec, Canada</i>, ³<i>TransBioTech, Quebec city, Quebec, Canada</i>, ⁴<i>Université de Sherbrooke, Sherbrooke, Quebec, Canada</i>.</p>
<p>Do Iodine, Colistine in drinking water affect immune competence and growth performance of broiler? . Firas h. Albawi Albawi^{1,2} and yahya abdulameer*^{1,2}, ¹<i>baghdad university/Veterinary medicine college/ avian pathology, babylon . Hilla . iraq</i>, ²<i>babylon university/Veterinary medicine college/ public health</i>.</p>
<p>The influence of using different sounds on feeding behavior of broiler chicken by using runway test. Salwan Abdulateef*¹, Ziyad Aldhanki², and Saman Rashid³, ¹<i>University of Anbar, Ramadi, Anbar, Iraq</i>, ²<i>University of Anbar, Ramadi, Anbar, Iraq</i>, ³<i>University of sulsimsni, sulsimsni, sulsimsni, Iraq</i>.</p>
<p>Direct comparison of human microbiota-associated gnotobiotic piglet and mouse models for infant gut microbiota studies. N. D. Aluthge*^{1,3}, W. Tom^{1,4}, S. Rohde¹, T. E. Burke¹, K. D. Heath², C. Kreikemeier-Bower², H. Kittana³, A. E. Ramer-Tait³, and S. C. Fernando¹, ¹<i>Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, United States</i>, ²<i>Institutional Animal Care Program, University of Nebraska-Lincoln, Lincoln, NE, United States</i>, ³<i>Department of Food Science and Technology, University of Nebraska-Lincoln, Lincoln, NE, United States</i>, ⁴<i>School of Biological Sciences, University of Nebraska-Lincoln, Lincoln, NE, United States</i>.</p>
<p>Metazoan Models and Nutrigenomics: The New Paradigm in Human Nutrition. G Tellez*¹, MF Baxter¹, DA Koltos², and S Dridi¹, ¹<i>University of Arkansas, Fayetteville, AR, USA</i>, ²<i>Iowa State University, Ames, IA, USA</i>.</p>
<p>Gastrointestinal tract weight and microbial composition of nursery pigs fed diets containing cold-pressed canola cake. J.W Lee*, M Thomas, J Scaria, and T.W Woyengo, <i>South Dakota State University, Brookings, SD, US</i>.</p>
<p>Differential expression of proteins in the duodenum of broilers fed diets rich in Arg or CLA. Seokmin Kang*¹, kyungwoo Lee², Honghee Chang¹, Byung Hern Moon³, and Yang-Ho Choi¹, ¹<i>Department of Animal Science and Institute of Agriculture and Life Sciences, College of Agriculture and Life Sciences, Gyeongsang National University, 501 Jinjudaero, Jinju 52828, Republic of Korea</i>, ²<i>Laboratory of Poultry Nutrition, Department of Animal Science and Technology, Konkuk University, 120 Neungdong-ro, Gwangjin-gu, Seoul 05029, Republic of Korea</i>, ³<i>Celltech, Co., Ltd., Eumseong-gun, Chungbuk 27622, Republic of Korea</i>.</p>