15th International Symposium on Digestive Physiology of Pigs (DPP2022)

May 17 – 20, 2022
De Doelen – Rotterdam, The Netherlands

Version 2.0: 15 February 2022
### Tuesday 17 May 2022

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<tr>
<th>Room</th>
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<tr>
<td>Willem Burger Hal</td>
<td>08.00 - 09.00 h</td>
<td>Registration</td>
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| Tbc                         | 09.00 - 12.00 h | Satellite Symposium 1 - **Metex Noovistago**
  Dietary amino acids in feed intake and growth in pigs: the gut-hypothalamus and the liver-muscle axes |
| Jurriaanse Foyer            | 12.00 - 13.00 | Lunch                                                                         |
| Tbc                         | 13.00 - 16.00 h | Satellite Symposium 2 - **MetaPig**                                           |
| Tbc                         | 13.00 - 16.00 h | Satellite Symposium 3 **Lucta SA and Institut de Recerca i Tecnologia Agroalimentàries (IRTA)**
  Stress and Gastrointestinal Function: a Challenge in Pig Production |
| Tbc                         | 13.00 - 16.00 h | Satellite Symposium 4 **ANIMINE**
  Zinc and copper metabolism: a holistic approach for swine nutrition and health |
| Willem Burger Hal           | 12.00 - 17.00 h | Registration                                                                  |
| De Doelen Rotterdam         | 17.30 - 19.30 h | Welcome Reception                                                             |
Wednesday 18 May 2022

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<th>Time</th>
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<tr>
<td>08.30 - 08.45 h</td>
<td>Opening address</td>
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<tr>
<td>08.45 - 09.15 h</td>
<td>Opening Keynote presentation: The role of foods of animal origin in the feeding of world population - Louise Fresco</td>
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Session 1: Optimizing resource utilization for future feeds

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<th>Time</th>
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<tr>
<td>09.15 - 10.00 h</td>
<td>Keynote presentation 1: Food for the planet - Imke de Boer</td>
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<tr>
<td>10.00 - 10.15 h</td>
<td>Protein concentrates from lucerne; effect of processing on ileal digestibility - Lene Stadskilde1, Helle N. Lærke1, Morten Ambye-Jensen2, Søren Krogh Jensen1</td>
<td></td>
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<tr>
<td>10.15 - 10.30 h</td>
<td>Cell walls properties of feeds and their impact on protein digestibility: an in vitro study - Myriam Grundy1, Jaap van Milgen, David Renaudeau</td>
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<tr>
<td>10.30 - 11.00 h</td>
<td>Morning Break</td>
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<tr>
<td>11.00 - 11.45 h</td>
<td>Keynote presentation 2: Evaluation of agricultural resources for optimal upcycling in pigs - Pedro Urriola</td>
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<tr>
<td>11.45 - 12.00 h</td>
<td>Gastrointestinal attributes in nursery pigs fed diets supplemented with enzymatically treated yeast and pharmacological zinc oxide alone or in combination - Brenda Christensen1, Cuilan Zhu1, Mohsen Mohammadiheisari1, Hagen Schulze1, Lee-Anne Huber1, Elijah Kiarie1</td>
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<tr>
<td>12.00 - 12.15 h</td>
<td>Acidification or fermentation of barley grain using Limosilactobacillus reuteri or Weissella cibaria degrades inositol phosphate in vitro - Charlotte M. E. Heyer1,2, Anna Dörper1, Vera Sommerfeld1, Michael G. Gänzle1, Ruurd T. Zijlstra1</td>
<td></td>
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<tr>
<td>12.15 - 12.30 h</td>
<td>Effects of dietary fibre sources for sows during gestation on the performance and plasma glucose kinetics - Marlon Guimarães Barros Filho1, Bruno Silva1, Cátia Fernandes1, Jefferson Gomes1, João Vitor Bernardes1, Gustavo Sales1, Rennan Moreira1, Christine Potthast4</td>
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<tr>
<td>12.30 - 14.30 h</td>
<td>Lunch break and poster session</td>
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Time Jurriaanse Foyer & Feestzaal | License no. |
| 12.30 - 14.30 h    | Lunch break and poster session |

Time Willem Burger Zaal | License no. |
| 12.30 - 14.30 h    | Lunch break and poster session |

1Department of Animal Science, Aarhus University, Tjele, Denmark, 2Department of Chemical and Biological Engineering, Aarhus University, Aarhus, Denmark

O1 Acidification or fermentation of barley grain using Limosilactobacillus reuteri or Weissella cibaria degrades inositol phosphate in vitro

O2 Cell walls properties of feeds and their impact on protein digestibility: an in vitro study - Myriam Grundy1, Jaap van Milgen, David Renaudeau

O3 Gastrointestinal attributes in nursery pigs fed diets supplemented with enzymatically treated yeast and pharmacological zinc oxide alone or in combination - Brenda Christensen1, Cuilan Zhu1, Mohsen Mohammadiheisari1, Hagen Schulze1, Lee-Anne Huber1, Elijah Kiarie1

O4 Effects of dietary fibre sources for sows during gestation on the performance and plasma glucose kinetics - Marlon Guimarães Barros Filho1, Bruno Silva1, Cátia Fernandes1, Jefferson Gomes1, João Vitor Bernardes1, Gustavo Sales1, Rennan Moreira1, Christine Potthast4

O5 Effects of dietary fibre Sources for sows during gestation and lactation and their relationship with the intestinal microbiota and metabolites

O6 Correlation between intestinal microbiota and metabolites of sows fed with different dietary fiber sources during gestation and lactation

O7 Effects of dietary fibre Sources for sows during gestation and lactation and their relationship with the intestinal microbiota and metabolites

Correlation between intestinal microbiota and metabolites of sows fed with different dietary fiber sources during gestation and lactation

1University Of Guelph, Cambridge, Canada, 2Livalta, Peterborough, England

1Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, 2Institute of Animal Science, University of Hohenheim, Stuttgart, Germany, 3Animal Nutrition Group, Wageningen University & Research, Wageningen, The Netherlands

1Department of Animal Science, Aarhus University, Tjele, Denmark, 2Department of Chemical and Biological Engineering, Aarhus University, Aarhus, Denmark
### Session 2: Dynamics of digestion and absorption

**14.30 - 15.15 h**  
Keynote presentation 1: *Carbohydrate Digestion: The importance of the proximal and distal stomach during digestion in growing pigs* - Gail Bornhorst

**15.15 - 15.30 h**  
Net portal and faecal total and individual short-chain fatty acids as influenced by fermentation of cellulose and arabinoxylan rich diets  
*Knud Erik Bach Knudsen*, Anne Katrine Bolvig, Mihai Victor Curtașu, Mette Skou Hedemann, Helle Nygaard Lærke  
1Aarhus University, Tjele, Denmark

**15.30 - 15.45 h**  
Low sanitary housing conditions reduce ileal N digestibility and enhance the production of protein-derived metabolites in piglets  
*Lonneke Noorman*, Sonja de Vries, Myrthe Gilbert, Bart van der Hee, Walter Gerrits  
1Department of Population Health Sciences, Faculty of Veterinary Medicine, Utrecht University, Utrecht, The Netherlands, 2Animal Nutrition Group, Department of Animal Sciences, Wageningen University and Research, , The Netherlands, 3Host-Microbe Interactomics, Department of Animal Sciences, Wageningen University and Research, , The Netherlands

**15.45 - 16.15 h**  
Afternoon Break

**16.15 - 17.00 h**  
Keynote presentation 2: *Phytate degradation, P and Ca absorption and digestibility in pigs* - Markus Rodehutscord

**17.00 - 17.15 h**  
Impact of fibre on transit time, viscosity, digestibility and post-prandial metabolism in growing pigs depending on meal size and frequency  
*Élisabeth Chassé*, Marie-Pierre Létourneau-Montminy, Frédéric Guay  
1Université Laval, Rimouski, Canada

**17.15 - 17.30 h**  
Ceased intestinal macromolecular uptake and transfer by enteral exposure to lectin (phytohemagglutinin) in new-born piglets  
*Ester Arévalo Sureda* 1,2, Katerina Pierzynowska 2, 3, Olena Prykhodko4, Jaroslaw Wolinski, Stefan Pierzynowski2,5, Björn Weström2  
1Gembloux Agro-Bio Tech (GxABT), University of Liège, Gembloux, Belgium, 2Department of Biology, Lund University, Lund, Sweden, 3The Kielanowski Institute of Animal Nutrition and Physiology, Polish Academy of Sciences, Jabłonna, Poland, 4Department of Food Technology, Engineering and Nutrition, Lund University, Lund, Sweden, 5Department of Biology, Institute of Rural Medicine, Lublin, Poland

**17.30 - 17.45 h**  
Presentation PigWEB – Jaap van Milgen, INRAe, France

**Time**

**19.30 - 22.30 h**  
Informal dinner
Thursday 19 May 2022

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<td><strong>Session 3: Models and Methodologies</strong></td>
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<tr>
<td>08.30 - 09.15 h</td>
<td>Keynote presentation 1: <em>Modelling of metagenomic data for understanding of the functional microbiome - Bas Dutilh</em></td>
<td>K5</td>
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<tr>
<td>09.15 - 09.30 h</td>
<td>Proteomic analysis of liver, pancreas and adipose tissue of insulin resistant pig following bariatric surgery</td>
<td>O12</td>
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<td></td>
<td><em>Karolina Ferenc</em>, Naser Dib, Jaroslaw Olszewski, Zdzislaw Gajewski, Elzbieta Grzesiuk, Romuald Zabielski</td>
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<td></td>
<td>1Center for Translational Medicine, Warsaw University of Life Sciences, Warsaw, Poland,</td>
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<td></td>
<td>2European Health Centre Otwock (ECZ Otwock), The Fryderyk Chopin Hospital, Otwock, Poland,</td>
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<td></td>
<td>3Institute of Biochemistry and Biophysics PAS, Warsaw, Poland</td>
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<tr>
<td>09.30 - 09.45 h</td>
<td>Gut microbiota-derived ursodeoxycholic acid alleviates low birth weight-induced colonic inflammation by enhancing M2 macrophage polarization</td>
<td>O13</td>
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<td><em>Yu Pi</em>, Yujun Wu, Dandan Han, Xinhua Zou, Dongjiao Ni, Junjun Wang*</td>
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<td></td>
<td>1China Agricultural University, Beijing, China</td>
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<td></td>
<td>2Boen Biotechnology Co. LTD, Ganzhou, China</td>
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<tr>
<td>09.45 - 10.00 h</td>
<td>Peroxisome proliferator-activated receptor gamma activation protects against deoxynivalenol-induced intestinal barrier dysfunction in jejunal IPEC-J2 cells</td>
<td>O14</td>
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<td><em>Enkai Li</em>, Nathan Horn, Kolapo Ajuwon*</td>
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<td>1Purdue University, West Lafayette, United States, 2United Animal Health, Sheridan, United States</td>
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<tr>
<td></td>
<td>EPA and DHA protect against deoxynivalenol-induced intestinal barrier dysfunction through both PPARg dependent and independent pathways in jejunal IPEC-J2 cells</td>
<td>O15</td>
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<tr>
<td><strong>10.00 - 10.30 h</strong></td>
<td><strong>Morning Break</strong></td>
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<td>10.30 - 11.15 h</td>
<td>Keynote presentation 2: Organoid models for pigs: new frontiers in the study of gastrointestinal physiology - Jerry Wells</td>
<td>K6</td>
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<tr>
<td>11.15 - 11.30 h</td>
<td>Characterization of an organoid model to study the intestinal epithelium in piglets</td>
<td>O16</td>
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<td><em>Eloïse Mussard</em>, Corinne Lencina, Lise Gallo, Mickael Albin, Laurent Cauquillet, Christelle Knudsen, Caroline Achard, Philippe Pinton, Laura Soler-Vasco, Sylvie Combes, Martin Beaumont*</td>
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<td>1GenPhySE, Université de Toulouse, INRAE, ENVT, Castanet-Tolosan, Lallemand Animal Nutrition, Blagnac, France, 2GenPhySE, Université de Toulouse, INRAE, ENVT, Castanet-Tolosan, France, 3Toxalim (Research Centre in Food Toxicology), Université de Toulouse, INRAE, ENVT, INP-Purpan, UPS, Toulouse, France, 4Lallemand Animal Nutrition, Blagnac Cedex, France</td>
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<tr>
<td>11.30 - 11.45 h</td>
<td>Functional and molecular profiling of fasted piglets reveals decreased metabolic function and cell proliferation in the small intestine</td>
<td>O17</td>
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<td><em>Anna Bekebrede</em>, Vincent de Boer, Walter Gerrits, Jaap Keijer*</td>
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<td>1Human and Animal Physiology, Wageningen University and Research, Wageningen, The Netherlands, 2Animal Nutrition Group, Wageningen University and Research, Wageningen, The Netherlands</td>
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<tr>
<td>11.45 - 12.00 h</td>
<td>Sucrose inclusion in gestating and lactating diets of sows modifies the behaviour of their progeny in the post-weaning period</td>
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<td><em>Giselle Salas</em>, Íñigo Díaz, Sergio Guzmán-Pino*</td>
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<td></td>
<td>1Facultad de Ciencias Veterinarias y Pecuarias, Universidad de Chile, Santiago, Chile</td>
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<td>Time</td>
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<td>12.00 - 14.00 h</td>
<td>Lunch break and poster session</td>
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Session 4: Functionality of the intestinal microbiome

14.00 - 14.45 h  Keynote presentation 1: Quantitative microbiome profiling in health and disease - Jeroen Raes  K7

14.45 - 15.00 h  Mother-offspring association: impact of sow’s diet on Clostridioides difficile colonisation in suckling piglets and colostrum potential against toxins in IPEC-J2  Łukasz Grześkowiak1, Eva-Maria Saliu1, Beatriz Martínez-Vallespin1, Anna Wessels1, Wilfried Vahjen1, Jürgen Zentek1
1Freie Universität Berlin  O19

15.00 - 15.15 h  Phytase supplementation and varying calcium level in pig feed: effects on ileal digesta and faecal microbiota  Naomi Sarpong1,2, Nicolas klein1,2, Dieter Feuerstein3, Markus Rodehutscord1,2, Amélia Camarinha-Silva1,2
1Institute of Animal Science, University of Hohenheim, Stuttgart, Germany, 2HoLMiR - Hohenheim Center for Livestock Microbiome Research, Stuttgart, Germany, 3BASF SE, Lampertheim, Germany  O20

15.15 - 15.30 h  Effects of copper source on bile acid profiles and intestinal microbiota in finishing pigs  Laia Blavi1, Jose Francisco Pérez1, Asal Forouzandeh1, Naiana E. Manzke2, Hans H.Stein3, I. R. Ipharraguerre4
1Animal Nutrition and Welfare Service (SNIBA), Universitat Autònoma De Barcelona, Bellaterra, Spain, 2Animine, Annecy, France, 3Division of Nutritional Sciences, University of Illinois, Urbana, United States of America, 4Institute of Human Nutrition and Food Science, University of Kiel, Kiel, Germany  O21

15.30 - 16.00 h  Afternoon Break

16.00 - 16.45 h  Keynote Presentation 2: Interactive effects of the microbiome and nutrition on mucosal physiology and functions in the porcine intestinal tract - Barbara Metzler-Zebeli  K8

16.45 - 17.00 h  Early oral faecal filtrate transplantation to improve gut health in pigs before and after weaning – a pilot study  Christina Larsen1, Amanda B. Andersen1, Helena Sato1, Dennis S. Nielsen2, Simone M. Offersten1, Anders Brunse1, Thomas Thymann1
1Department of Veterinary and Animal Sciences, Faculty of Health and Medical Sciences, University Of Copenhagen, Frederiksberg, Denmark, 2Department of Food Science, Faculty of Science, Frederiksberg, Denmark  O22

17.00 - 17.15 h  A blend of medium-chain fatty acids and organic acids accelerates microbial maturation in newly weaned piglets  Natalie E. Diether1, Tetske G. Hulshof2, Ben P. Willing3, Theo A. T. G. van Kempen2,3
1University Of Alberta, Edmonton, Canada, 2Trouw Nutrition, Boxmeer, The Netherlands, 3North Carolina State University, Raleigh, United States  O23

17.15 - 17.30 h  An exploratory analysis of the effect of Copper(I)oxide on the gut microbiota of weaned piglets  Carmen Ambrosio1, Jurgen van Baal, Agathe Romeo, Hauke Smidt, Paul Bikker
1Dirección de Investigación y Desarrollo, Universidad Privada del Norte (UPN), Trujillo, Peru, 2Animal Nutrition Group, Department of Animal Sciences, Wageningen University & Research, Wageningen, The Netherlands, 3Animine, Annecy, France, 4Laboratory of Microbiology, Wageningen University & Research, Wageningen, The Netherlands, 5Wageningen Livestock Research, Wageningen University & Research, , The Netherlands  O24

Time

19.00 - 23.00 h  Gala dinner
### Friday 20 May 2022

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<td><strong>Session 5: The role of the gut in whole-body functioning</strong></td>
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<tr>
<td>08.30 - 09.15 h</td>
<td>Keynote presentation 1: <em>Microbes, metabolites and the gut-lung axis</em> - Ben Marsland</td>
<td>K9</td>
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<tr>
<td>09.15 - 09.30 h</td>
<td>A blend of amino acids and polyphenols improves the pig capacity to cope with weaning and poor hygiene challenge</td>
<td>O25</td>
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<tr>
<td>09.30 - 09.45 h</td>
<td>Faecal metabolite profiles as indicator for farm sanitary condition in growing pigs</td>
<td>O26</td>
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<tr>
<td>09.45 - 10.00 h</td>
<td>Blood metabolic profile of pigs fed different dietary zinc levels after weaning</td>
<td>O27</td>
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<tr>
<td>10.30 - 11.15 h</td>
<td>Keynote presentation 2: <em>Born too early or born too little, – how to adapt to postnatal life under these conditions?</em> - Thomas Thymann</td>
<td>K10</td>
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<tr>
<td>11.15 - 11.30 h</td>
<td>Impacts of intestinal health on growth of nursery pigs: Meta-analysis based on intestinal health biomarkers and growth of 2,000 pigs</td>
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<td>11.30 - 11.45 h</td>
<td>An oral gavage of lysine reduces feed intake by stimulating satiation and satiety in young pigs</td>
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<tr>
<td>11.45 - 12.00 h</td>
<td>Plant-oriented microbiome modulates age-related alterations in gut-mucosal expression of innate immune and barrier function genes in suckling and weaned piglets</td>
<td>O32</td>
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<tr>
<td>12.00 - 12.30 h</td>
<td>Closing session</td>
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| Time             | Jurriaanse Foyer | |
|------------------|------------------||
| 12.30 - 14.00 h  | Grab and go Lunch break | |
POSTERS
All posters will be shown during the whole symposium in the poster area. For online posters please find the special instructions on the physical poster at the venue.

Session 1. Optimizing resource utilization for future feeds

P1 - Supplementation of a low level of organic zinc in finishing pigs decreased lipid peroxidation in their meat.
Hajer Kheil-Arif2, Antonio Natalello1, Alessandro Priolo1, Luisa Biondi1, Massimiliano Lanza1, Mieke Zoon3, Alexandra Blanchard2, Ruggeri Menci1, Giuseppe Luciano1
1Department Di3A, Animal Production Science, University of Catania, Via Valdisavoia 5, 95123, Catania, Italy, 2Pancosma | ADM, Rolle, Switzerland

P2 - Potential of a combination of bioactives, sweetener and organic acids to support piglets’ performance in case of low zinc oxide
Elisa Arnaud1, Catherine Ionescu1, Celia Gomes Da Silva1, Alexandre Blanchard1, In Ho Kim2
1Pancosma|ADM, Rolle, Switzerland, 2Dankook University, Department of Animal Resources Science, Cheonan, South Korea

P3 - Novel edible toys loaded with iron to prevent iron deficiency anaemia in weaned pigs
Carolina Valenzuela1, Mauricio Anticoi1, Sergio Guzmán1, Jaime Figueroa2
1Universidad De Chile, Santiago, Chile, 2Pontificie Universidad Católica de Chile, Santiago, Chile

P4 - Predicting effects of process conditions on digestibility of corn DDGS for pigs using near-infrared spectroscopy (NIRS)
Maarten Van Helvoort1, Jens-Erik Zerrahn2
1De Heus Animal Nutrition, Ede, Netherlands, 2Evonik Operations GmbH, Vejle, Denmark

P5 - IMPROVEMENTS IN DIGESTIBILITY AND GROWTH OF GROWING-FINISHING PIGS FOLLOWING SUPPLEMENTATION WITH A COMBINATION OF LYSOLECITHINS, MONOGLYCERIDES AND A SYNTHETIC EMULSIFIER
Alexandra Wealleans1, Bindhu Vasanthakumari1, Alexandra Desbruslais1
1Kemin Europa N.v., Herentals, Belgium

P6 - The combination of benzoic acid and essential oils enhances growth performance of grower-finisher pigs under challenge conditions
Wen Ren1,2, Jincheng Zhang1, Zhenzheng Wang1, Shikui Wang1, Jinlong Wu1
1DSM (China) Animal Nutrition Research Center, Bazhou, China, 2Sichuan Agriculture University, Chengdu, China

P7 - Effect of probiotics on intestinal functionality in weaned piglets compared to antibiotics
Lena Raff1, Lea Hübertz Birch Hansen1
1Chr. Hansen A/S, Hørsholm, Denmark

P8 - Sows fed synergistic blend of short- and medium-chain organic acid has a positive carry-over effect on the post-weaning growth rate
De Xin Dang1, Vetrivel Sampath, Lane Pineda, Yanming Han, Raihanul Hoque, Serge Muhizi, Inho Kim1
1Dankook University, Cheonan, South Korea

P9 - Spraying an anti-microbial agent in a swine farm and its slurry highly reduce the odor of substances
Raihanul Hoque1, Shanmugam Sureshkumar1, De Xin Dang1, Serge Muhizi1, Inho Kim1
1Dankook University, Cheonan, South Korea

P10 - Inclusion of methanotrophic bacteria derived protein feed in weaner diets has no negative impacts on piglet performance and intestinal health
Mette Skou Hedemann1, Marie Rønn1, Ina Karlshej Julegaard2, Mette Olaf Nielsen1
1Aarhus University, Tjele, Denmark, 2Danish Agro a.m.b.a., Karise, Denmark

P11 - Nitrogen balance of pigs fed dietary amino acid levels adjusted according to the circadian rhythm
P12 - Black soldier fly larvae meal can partially replace soybean meal in low-complexity nursery diets, without improving fecal scores of pigs
Brenda Christensen1, Cuilan Zhu1, Taylor McCullough2, Nicole Ricker2, Lee-Anne Huber1
1Department of Animal Biosciences, University Of Guelph, Guelph, Canada, 2Department of Pathobiology, University of Guelph, Guelph, Canada

P13 - Xylanase impact beyond performance: Effects on gut structure, faecal volatile fatty acid content and ammonia emissions in weaned piglets
Waewaree Boontiam1, Veerle Van Hoeck1, Ingrid Somers1, Raquel Rodriguez1, Alexandra Wealleans1
1Kemin Europa NV, Herentals, Belgium, 2Khon Kaen University, Thailand

P14 - Porcine in vitro digestion and fermentation characteristics of maize and wheat with or without fiber degrading enzymes
Knud Erik Bach Knudsen, Harriet Njeru1, Tofuko Woyengo
1Aarhus University, Viborg, Denmark

P15 - In vitro digestion and solubilization of non-starch polysaccharides of cereal grains without or with a combination of xylanase and cellulase
Harriet Njeru1, Tofuko Woyengo, Knud Erik Bach Knudsen
1Aarhus University, Viborg, Denmark

P16 - The supplementation of alpha-amylase to a corn soybean-meal based diet improved the growth performance of weaning piglets
Yanhong Luo1, Kostas Stamatopoulos2, Jinlong Wu1, Jingcheng Zhang1, Zhenzhen Wang1, Shikui Wang1
1DSM China Animal Nutrition Research Center, Nanmeng Town, Bazhou City, China, 2DSM Nutritional Products, Wurmisweg 576, Switzerland

P17 - Effects of dietary sodium diformate versus benzoic acid in sows on suckling piglets under poor sanitary conditions
Christian Lückstädt1, Stevan Petrovic1
1ADDCON, Bitterfeld-Wolfen, Germany

P18 - Determination of macronutrient digestibility of yeast-based high protein products fed to growing pigs.
Ricardo Garavito Duarte1, Jorge Perez-Palencia1, Crystal Levesque1, Kevin Herrick2
1South Dakota State University, Brookings, United States, 2POET Nutrition, Sioux falls, United States

P19 - Relation between the hydration characteristics and fermentability of fibrous co-products and pellet manufacturing
Thomas Bastiansen1, Sonja De Vries1, Bianca Martens2, Richard Benders3, Eric Vissers4, Joshua Dijksman5, Wouter Hendriks1, Menno Thomas1,2, Guido Bosch1
1Animal Nutrition Group Wageningen University, Wageningen, Netherlands, 2Agrifirm NWE, Apeldoorn, The Netherlands, 3Physical Chemistry and Soft Matter, Wageningen University, Wageningen, The Netherlands, 4Feed Design Lab, Wanssum, The Netherlands, 5Zetadec, Wageningen, The Netherlands

P20 - Oxidation patterns in freshly harvested and stored grains, with or without antioxidant treatment
Alexandra Desbruslais1, Alexandre Wealleans1, Karen Bierinckx1
1Kemin Agrifoods Europa, Herentals, Belgium

P21 - Assessment of a novel biosynthetic bacterial 6-phytase in weaning piglets on growth efficiency, bone mineralization and phosphorus digestibility
Maamer Jlali1, Pierre Cozanne1, Baris Yavuz2, Aurélie Preynat1
1Adisseo France S.A.S., Center Of Expertise In Research And Nutrition, Malicorne, France, 2Adisseo France S.A.S., Antony, France
P22 - The effect of dietary Laminaria digitata and CAZyme supplementation on the digestive physiology of the post-weaning piglet: a multi-disciplinary approach
David Miguel Ribeiro, Daniela Filipa Pires Carvalho, Cátia Falcão Martins, Céline Ledercq, Mário Pinho, Jenny Renault, André Martinho de Almeida, João Pedro Bengala Freire, José António Mestre Prates.
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P23 - Effect of feed additives affecting feed intake and digestibility on sow and litter performance during lactation period: palatant and carbohydrolase
1Adisseo, Commentary, France, 2Institute of Agricultural Sciences, Universidade Federal de Minas Gerais, Montes Claros, Brazil, 3Animal Science Unit, Federal Institute of Education, Science and Technology Northern Minas Gerais, Januária, Brazil, 4Adisseo Nutriad Ltd, Telford Court, Chester Gates, England, 5Adisseo Brasil Nutrição Animal Ltda, Av. Maria Coelho Aquiar, Brazil

P24 - Diet co-fermentation with bacteria and enzymes improves growth performance in weaned piglets
Ping Zheng, Zhou Xia, Pierre Cozanne, Hualiu Xin.
1Adisseo, Commentary, France, 2Animal Nutrition Institute, Sichuan Agricultural University, Huimin Road, Wenjiang District, Chengdu, People’s Republic of China

P25 - Increasing the dietary methionine-to-lysine ratio in early gestation of sows did not affect piglet birth weight and within-litter variation
Anja Varmløse Strathe.
1Department of Veterinary and Animal Sciences, University Of Copenhagen, Frederiksberg C, Denmark, 2Nutrition & Feeding, SEGES Danish Pig Research Centre, Aarhus, Denmark

P26 - Effect of vitamin C and organic zinc and selenium for early gestating sows on antioxidant capacity and piglet birth weight
Anja Varmløse Strathe, Thomas Sønderby Brun.
1Department of Veterinary and Animal Sciences, University Of Copenhagen, Frederiksberg C, Denmark, 2Nutrition & Feeding, SEGES Danish Pig Research Centre, Aarhus, Denmark

P27 - Effects of adding guanidinoacetic acid to sow feed during gestation and lactation on sow and litter performance
Laura Schneider, Katharina Schuh, Georg Dusel, Lukas Bauer, Susann Richert, John Khun Kyaw Htoo.
1University of Applied Sciences Bingen, Bingen, Germany, 2Institut Feed Research Bingen GmbH, Weiler bei Bingen, Germany, 3Evonik Operations GmbH, Hanau-Wolfgang, Germany

P28 - Reduced occurrence of gastric ulcer in silage fed pigs
Johanna Friman, Emy Vu, Axel Sannò, Torbjörn Lundh, Magdalena Åkerfeldt.
1Swedish University Of Agricultural Sciences, Uppsala, Sweden

P29 - Quantifying the effects of dietary fibres on protein digestibility in pigs - a meta-analysis
Shiyi Zhang, Sonja de Vries, Walter Gerrits, Junjun Wang.
1Wageningen University&Research, Wageningen, Netherlands, 2China Agricultural University, Beijing, China

P30 - Supplementing lysolecithin with emulsifier and monoglycerides to diets reformulated to lower energy on performance and lean-fat deposition in fattening pigs
David Gonzalez Sanchez, Szabolcs Toth, Alexandra Desbruslais.
1Kemin Europa NV

P31 - Determination of digestibility of Precipitated Calcium Phosphate and Monocalcium Phosphate in broiler chickens and growing pigs
Magdalena Presto Åkerfeldt, Sara Sterriström, Emma Ivarsson.
1Swedish University of Agricultural Science, Dept. of Animal Nutrition and Management, Uppsala, Sweden, 2EasyMining Sweden AB, Uppsala, Sweden

P32 - Daily gain and feed intake of organic piglets fed either biorefined grass protein or soy-bean-meal five weeks prior to weaning
Maria Eskildsen, Maria Pape Andersen, Jakob Christoffer Johannsen, Peter Kappel Theil.
P33 - Novel whey protein concentrate improves nursery pig growth and intestinal morphology
Nathan Horn, Kolapo Ajuwon, Enkai Li, Aaron Gaines, Jeff Goodwin
1United Animal Health, Sheridan, United States, 2Purdue University, West Lafayette, United States, 3Ani-tek, Social Circle, United States, 4Pivotal Ingredients, Sheridan, United States

P34 - Carbohydrase supplementation improves nitrogen and energy utilization of Corn Soybean-based diets with or without DDGS in growing pigs
Stephane Motta, Bruno Silva, Dalton Araujo, Wagner Araujo, Hysla Cardoso, Naiara Fagundes, Adriana Toscan
1Universidade Federal de Minas Gerais - ICA, Montes Claros, Brazil, 2Universidade Federal de Lavras, Lavras, Brazil, 3Federal Institute of Education, Science and Technology Northern Minas Gerais, Januária, Brazil, 4Adisseo Latin America, São Paulo, Brazil

P35 - Dietary addition of a blend of macroalgae improves feed efficiency and changes the fecal microbiome profile of post-wean pigs.
Jason Sands, Augustine Owusu-Aseyidu, Leah Kellesvig
1Ocean Harvest Technology Ltd, Fareham, United Kingdom, 2Vita Plus Corporation, Madison, United States

P36 - Effect of probiotics yeast and bacillus on the in-vivo digestibility and in-vitro fermentation of high fiber swine feed ingredients
Tadele Kiros, Jonna Koper, Geraldine Khun, r Jasos Millecam, Jean Philippe Marden
1Phileo by Lesaffre, Milwaukee, USA, 2Lesaffre International, In-vitro platform, Loos, France, 3Phileo by Lesaffre, Lille, France, 4PhoulPharm Research Station, Prins, Belgium, 5The Farm, Phileo by Lesaffre, Toulouse, France

Corentin Lannuzel, Adam Smith, Mads Brøgger Pedersen, Sonja de Vries
1Wageningen University & Research, Animal Nutrition Group, Wageningen, Netherlands, 2DSM Nutritional Products Europe AG, Kaiseraugst, Switzerland, 3Novozymes A/S, Kgs. Lyngby, Denmark

P38 - Effect of moderate dietary inclusion of fibrous by-products on performance, intestinal physiology and microbiota of weaned piglets
Beatriz Martínez Vallespín, Jonathan Riedmüller, Merle Kochan, Laura Pahnke, Alvaro Taibo, Wilfried Vahjen, Jürgen Zentek
1Freie Universität Berlin, Berlin, Germany

P39 - Development and validation of a precision feeding program using automated intelligent precision feeders (AIPF) on performance of high-prolific gestating sows
Rodrigo Domingos, Francisco Rueda, Márvio Abreu, Antonio Luna, John Htoo, Caroline González-Veja, Maria Luspa, Henrique Brand, Flávio Rebordões, Bruno Silva
1Federal University of Lavras, Lavras, Brazil, 2Federal University of Minas Gerais, Montes Claros, Brazil, 3FARM Faes Nutrición y Salud Animal, Álava, Spain, 4Evonik Operations GmbH, Hanau-Wolfgang, Germany, 5Evonik Brasil Ltda, São Paulo, Brazil

P40 - Compensatory growth after low protein diet for weaner
Hanne Maribo
1SEGES Innovation P/S, Copenhagen, Denmark

P41 - Effects of dietary lysozyme supplementation on growth performance and nitrogen balance in growing pigs
Bruna Schroeder, Ricardo Pomar, Ines Andretta, Renee Petri, Jennifer Ronholm, Jeffery Escobar, Aline Remus
1Universidade Federal Do Rio Grande Do Sul - Brazil, Porto Alegre, Brazil, 2Agriculture and Agri-Food Canada, Sherbrooke, Canada, 3Elanco Animal Health, Greenfield, USA, 4McGill University, Montreal, Canada

P42 - Estimating the digestibility of phosphorus sources of mineral and animal origin for phosphorus supplementation of growing pigs
Anne Boudon, Agnès Narcy, Etienne Labussière, Carine A. Van Vuure, Jean-Yves Dourmad
1PEGASE, INRAE, Institut Agro, Saint-gilles, France, 2BOA, INRAE, Université de Tours, Nouzilly, France, 3Darling Ingredients, SONAC, Son, France

P43 - Optimizing phosphorus absorption and utilization by growing pigs with a no phosphate strategy
Marion Lautrou, Ricardo Pomar, Philippe Schmidely, Marie-Pierre Létourneau-Montminy
1Laval University,
P44 - In vitro fermentation of ileal digesta from different protein ingredients
Hanlu Zhang1, John Cone1, Arie Kies1, Nikkie Wielen1, Junjun Wang1, Wouter Hendriks1
1Animal Nutrition Group, Wageningen University and Research, Wageningen, Netherlands, 2State Key Laboratory of Animal Nutrition, Alltech-MAFIC Research Alliance, College of Animal Science and Technology, China Agricultural University, Beijing, China

P45 - The effect of processing on in vitro starch digestion rate of cereal grains depends on species
Helle Nygaard Lærke1, Laura Rasmussen1, Nuria Canibe1, Mette Skou Hedemann1
1Aarhus University, Tjele, Denmark

P46 - The effect of alfalfa inclusion in piglet diets on growth performance and faecal consistency
Sam Millet1
1ILVO, Melle, Belgium

P47 - Feeding low resistant protein content in starter diets reduced microbial protein fermentation and antibiotic treatment in weaned piglets
Mai Anh Ton Nu1, Sadie Douglas2, Phil Boyd2, Jorn Madsen1, Laia Blavi Josà3, Simon Tibble3
1AB Neo a/s, Videbaek, Denmark, 2Primary Diet, Melmerby,. United Kingdom, 3Alternative Swine Nutrition, Fraga, Spain

P48 - Organic acid and salt blend treatment of cereals at harvest reduces need for zinc oxide in post weaned pig diets.
Shane Maher1, Ruth Connolly1, Torres Sweeney2, John Ryan2, John V. O’Doherty1
1University College Dublin, Dublin, Ireland, 2Adesco Nutricines, Waterford, Ireland

P49 - Effects of toasted or extruded soybean meal, associated with reductions in dried blood plasma in diets for newly weaned piglets
Natália Cristina Milani1, Vinicius Ricardo Cambito Paula1, Cândida Pollyanna Francisco Azevedo1, Anderson Aparecido Sedano1, Lucas Bassi Scarpí2, Hélio Moreira Júnior1, Dave Hanneman Alves Duarte1, Aulus Cavalieri Carciofi2, Urbano Santos Ruiz1
1ESALQ - USP, Piracicaba, Brazil, 2FCAV - UNESP, Jaboticabal, Brazil

P50 - Effects of inclusion of extruded or deactivated soybean in newly weaned piglets feeding
Natália Cristina Milani1, Vinicius Ricardo Cambito Paula1, Cândida Pollyanna Francisco Azevedo1, Anderson Aparecido Sedano1, Lucas Bassi Scarpí2, Hélio Moreira Júnior1, Dave Hanneman Alves Duarte1, Aulus Cavalieri Carciofi2, Urbano Santos Ruiz1
1ESALQ - USP, Piracicaba, Brazil, 2FCAV - UNESP, Jaboticabal, Brazil

P51 - The effects of reducing dietary crude protein levels at two SID lysine levels on the growth performance of weaned piglets
Xiaonan Guan2, Anne Huting2, Aude Simongiovanni3, William Lambert1, Francesc Molist2
1METEX NOOVISTAGO, Paris, FRANCE, 2Schorthorst Feed Research, Lelystad, The Netherlands

P52 - Lysozyme supplementation improves protein deposition in growing pigs
Bruna Schroeder1,2, Candido Pomar1, Renee Petri1, Ines Andretta3, Jennifer Ronholm4, Jeffery Escobar3, Aline Remus1
1AAFC, Sherbrooke, Canada, 2UFRGS, Porto Alegre, Brazil, 3Elanco North America,. USA, 4McGill University, Sainte-Anne-de-Bellevue, Canada

P53 - Serum zinc level is linked to the risk of diarrhoea in newly weaned pigs
Sally V. Hansen1, Natalja P. Nørskov1, Jan V. Nørsgaard1, Tofuko A. Woyengo1, Hanne D. Poulsen1, Tina S. Nielsen1
1Department of Animal Science, Aarhus University, Tjele, Denmark

P54 - A 30% extra dose crystalline lysine, methionine, threonine, tryptophan and valine in relation to the “Ideal-protein-concept” halves piglet diarrhoea outbreaks
Niels-Morten Sioth1, Julie Krogsgaard Bache1, Emmy Rønning1
1SEGES Innovation, Danish Pig Research Centre, Aarhus N, Denmark
Session 2. Dynamics of digestion and absorption

P55 - A nutritional emulsifier improves growing-finishing pig performance
Brecht Bruneel1, L. Go, Jr2, B. Bruneel3, M.J. Serrano1, L. Segers3
11st Ten Consulting Asia Pacific, Manila, Philippines, 2Leidebril Farm, Inc., Bukidnon, Philippines, 3Orffa Additives BV, Werkendam, The Netherlands

P56 - The digestibility of energy and nutrients and the efficiency of phytase to degrade phytate is influenced by pig body weight
Vanessa Lagos1, Mike Bedford1, Hans Stein3
1Schothorst Feed Research, Lelystad, Netherlands, 2AB Vista, Marlborough, United Kindom, 3University of Illinois, Urbana-Champaign, USA

P57 - Phytate breakdown, nutrient digestibility, plasma metabolites, and bone ash of pigs fed increasing phytase levels for a long adaptation period
Vanessa Lagos1, Mike Bedford1, Hans Stein3
1Schothorst Feed Research, Lelystad, Netherlands, 2AB Vista, Marlborough, United Kindom, 3University of Illinois, Urbana-Champaign, USA

P58 - Assessment of the consequences of anemia in sows on their reproductive performance and the long-term pigs’ growth and haematological status
Arnaud SAMSON1, Fabien Guillard1, Jérôme Martrenchar2, Jordi Pique3, Magali Quemere2
1ADM, Chateau Thierry, France, 2Wisium, Saint-Nolff, France, 3SETNA, Terrassa, Spain

P59 - Effect of dry vs liquid creep-feed on pre-weaning carbohydrase activities in piglets weaned at 4 or 5 weeks of age
Kimmie Kyed Lyderik1, Johannes Gulmann Madsen1, Niels Jørgen Kjeldsen2, Mette Skou Hedemann1, Charlotte Amdi1
1University Of Copenhagen, Frederiksberg C, Denmark, 2SEGES, Copenhagen, Denmark, 3Aarhus University, Foulum, Denmark

P60 - The effect of weaning age and feed type on disaccharidase activity in early post weaned piglets
Johannes Gulmann Madsen1, Xuwen Zhang1, Niels Jørgen Kjeldsen2, Mette Skou Hedemann1, Charlotte Amdi1
1University Of Copenhagen, Frederiksberg C, Denmark, 2SEGES, Copenhagen, Denmark, 3Aarhus University, Foulum, Denmark

P61 - Impact of feeding level on nutrient digestibility and concentrations of plasma metabolites in transition sows
Takele Feyera1, Natalja Nørskov, Professor Knud Erik Knudsen, Thomas Bruun2, Peter Theil1
1Aarhus University, Tjele, Denmark, 2SEGES Danish Pig Research Centre, Copenhagen, Denmark

P62 - Isoquinoline alkaloids impact intestinal health and function of weanling pigs fed diets formulated below amino acid requirements
Carly Rundle1, Valeria Artuso-Ponte2, Hans Stein3
1KWS Cereals, USA, Champaign, United States, 2Phytobiotics, Eltville, Germany, 3University of Illinois at Urbana-Champaign, Urbana, United States

P63 - The (long-term) effects of providing creep feed to suckling piglets.
And Van Enckevort1, Peter van ’t Veld1, Ashley Sijmonsbergen1
1Denkavit B.V., Voorthuizen, Netherlands

P64 - Lowering dietary Ca level increased digestible Ca and P released by phytase and bone P content in weaner pigs
Hengxiao Zhai1, Pauline Jenn2, Anaëlle Tschambser1, Ivan Gaytan-Perez1
1DSM (China) Animal Nutrition Research Center, Bazhou, P. R. China, 2Research Center for Animal Nutrition and Health, Village-Neuf, France
P65 - The source of betaine, hydrochloride or natural, did not affect its dynamics of absorption
Lien Vande Maele1, Robin Temmerman2, Giseli Heim1, Arno van der Aa2
1Orffa Additives BV, Breda, The Netherlands, 2Department of Pharmacology, Toxicology and Biochemistry, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium

P66 - Determining parameters for an improved protein efficiency in pigs: protease activities, amino acid transporters and proteome analyses along the gastrointestinal tract
Alina Kurz1, Naomi Sarpang1, Daniel Berghaus1, Ramona Weishaar1, Eva Haese1, Jörn Bennewitz1, Markus Rodehuts cord1, Amélia Camarinha-Silva1, Jana Seifert1
1University Of Hohenheim, Animal Science, Stuttgart, Germany

P67 - Comparison of an oral iron supplement with intramuscular iron injection in newborn piglets
Arnaud SAMSON1, Fabien Guillard2, Emmanuel Janvier1, Jéré mié Martrenchar2, Jordi Piqué3
1ADM, Chateau Thierry, France, 2Wisium, Saint-Noîff, France, 3SETNA, Terrassa, Spain

P68 - Can production modifications of a soy protein concentrate alter digesta kinetics and nutrient digestibility in weaned piglets?
Anne Huting1, Marianne Madsen2, Francesc Molist1
1Schor tshor Feed Research, Lelystad, Netherlands, 2Triple A A/S, Hornsyld, Denmark

P69 - Determination of the net energy in soybean meal fed to group-housed pigs
Su A Lee, Diego Rodriguez, Hans Stein
1University Of Illinois, Urbana, United States of America

P70 - Apparent and standardized ileal amino acid digestibilities in heat stressed pigs fed wheat-soybean meal diets supplemented with L-arginine and DL-methionine
Estela Montoya1, Adriana Morales1, Alan Valle1, Fernanda González1, Lucero Camacho1, Néstor Arce1, Jolie-Caroline González-Vega1, Ernesto Avelar1, John Htoo1, Miguel Cervantes1
1Universidad Autónoma de Baja California, Mexicali, México, 2Evonik Operations GmbH, Hanau, Germany

P71 - Digestibility of amino acids is not affected by increasing calcium from deficient to over-sufficient concentration in diets fed to pigs
Su A Lee, Hans Stein
1University Of Illinois, Urbana, United States of America

P72 - First-pass extraction of amino acids by the small intestine in pig – how important is it?
Clément Garçon1, Nathalie Le Floch1, Jaap van Milgen1
1PEGASE, INRAE, Institut Agro, St-Gilles, France

P73 - Expression of intestinal amino acid transporters, gut morphology, and amino acid digestibility in pigs fed proteins or free amino acids
Francis Amann Eugenio1,2, Jacob van Milgen1, Joël Duperray2, Renaud Sergeraert1, Nathalie Le-Floch1
1INRAE PEGASE, Institut Agro, 35590, Saint-Gilles, France, 2BCF Life Sciences, 56140, Pleucadeuc, France

P74 - Modelling improvements in phosphorus, calcium and sodium digestibility by a novel consensus bacterial 6-phytase variant in pigs: meta-analysis
Yueming Dersjant-Li1, Deepak Velayudhan1, Tinke Stormink1, Leon Marchal1,2
1Danisco Animal Nutrition, IFF, Oegstgeest, Netherlands, 2Animal Nutrition Group, Wageningen University & Research, Wageningen, Netherlands

P75 - Effect of a novel consensus bacterial 6-phytase variant on inositol hexa-phosphate degradation profile in growing pigs
Deepak Velayudhan1, Trine Christensen2, Solvej Knudsen2, Leon Marchal1,3, Yueming Dersjant-Li1, Hans Stein4
1Danisco Animal Nutrition and Health (IFF), Oegstgeest, Netherlands, 2Danisco Animal Nutrition and Health (IFF), Edwin Rahrs Vej 38, Denmark, 3Animal Nutrition Group, Wageningen University & Research, Wageningen, Netherlands, 4Department of Animal Sciences, University of Illinois, Illinois, US

P76 - Meta-analysis: the effect a novel consensus bacterial 6-phytase variant on inositol hexa-phosphate degradation and phosphorus digestibility in young pigs
Deepak Velayudhan1, Hans Stein4, Arun Kumar6, Trine Christensen2, Solvej Knudsen2, Tinke Stormink1, Leon Marchal1,3, Yueming Dersjant-Li1
P77 - Dietary variables affecting efficacy of a combination of Bacillus spp. direct-fed-microbial and a protease on growth performance in pigs: meta-analysis
Ester Vinyeta1, Deepak Velayudhan1, Ceinwen Evans2, Leon Marchal1,2,3
1Danisco Animal Nutrition (IFF), Oegstgeest, Netherlands, 2Danisco Animal Nutrition and Health (IFF), Edwin Rahrs Vej 38, Denmark, 3Animal Nutrition Group, Wageningen University & Research, Wageningen, Netherlands, 4Department of Animal Sciences, University of Illinois, Illinois, US, 5School of Agriculture and Food Science, The University of Queensland, Gatton, Australia

P78 - Isoquinoline alkaloids influence intestinal health and function in weanling pigs fed diets formulated below amino acid requirements
Carly Rundle, Valeria Artuso, Hans Stein
1Phytobiotics, Eltville, Germany

P79 - Impact of enzyme supplementation, sampling period, meal size and frequency on the digestibility amino acids and minerals in growing pigs
Élisabeth Chassé1, Marie-Pierre Létourneau-Montminy2, Frédéric Guay3
1Université Laval, Rimouski, Canada

P80 - Fecal nutrient digestibility in growing-finishing pigs kept under low and high sanitary conditions
Alfons Jansman1, Rik Verheijen1, Gisabeth Binnendijk1, Carola van der Peet-Schwering1
1Wageningen Livestock Research, Wageningen, Netherlands

P81 - Simulating Nutrient digestion and Absorption kinetics in PIGs based on diet and ingredient properties: SNAPiG
Alfons Jansman1, Marijke Schop2, Sonja de Vries2, Jennifer Ellis3, Hieu Nguyen-Ba1, Walter Gerrits2
1Wageningen Livestock Research, Wageningen, Netherlands, 2Wageningen University, , Netherlands, 3University of Guelph, Guelph, Canada

P82 - Phytase supplementation and varying calcium level in pig feed: Effects on precaecal inositol hexakisphosphate degradation
Nicolas Klein1, Naomi Sarpong1, Dieter Feuerstein2, Amélie Camarinha-Silva3, Markus Rodehutscord1
1Institute of Animal Science, University of Hohenheim, Stuttgart, Germany, 2BASF SE, Lampertheim, Germany

P83 - Dietary particle size and gelling affect digesta transit through the stomach of pigs
Corentin Lannuzel1, Romy J. Veersma2, Mirjam A. Kabel1, Walter J.J. Gerrits1, Sonja de Vries3
1Wageningen University & Research, Animal Nutrition Group, Wageningen, The Netherlands, 2Wageningen University & Research, Laboratory of Food Chemistry, Wageningen, The Netherlands

P84 - Effect of short-term Cu supplementation on biochemical parameters of liver and growth performance in pigs
Asal Forouzandeh1, David Solá-Oriol1, Alessandra Monteiro1, Hans H. Stein3, JF Pérez1, Dr Laia Blavi1
1Animal Nutrition and Welfare Service (SNIBA), Universitat Autònoma De Barcelona, Bellaterra, Spain, 2Animine, Annecy, France, 3Division of Nutritional Sciences, University of Illinois, Urbana, United States of America

P85 - Xylanase supplementation improves performance and alters the microbiome of lactating sows fed low or high fibre diets
Karen Vermeulen1, Georgios Papadopoulos2, Alexandra Wealleans1, Veerle Van Hoeck1, Ilias Giannenas2, S. Lioliopoulou2, P. Tassis3, K Papageorgiou1, P. Fotomaris2
1Kemin, Herentals, Belgium, 2Aristotle University of Thessaloniki, Thessaloniki, Greece

P86 - Zinc oxide augments early nursery pig feed intake
Carson De Mille1, Eric Burrough2, Nicholas Gabler1
1Department of Animal Science, Iowa State University, Ames, United States, 2Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames, United States

P87 - Effects of graded dietary copper concentrations on performance, copper levels in blood, faeces and bristles, and on red blood count
Angelika Grümpel-Schlüter1, Sven Dänicke1, Liane Hüther1, Susanne Kersten1, Jeannette Kluess1
1Friedrich-Loeffler-Institut, Braunschweig, Germany
P88 - Effects of dietary zinc/copper ratios on the metabolism of zinc, copper, and iron in weaned pigs
Danyel Bueno Dalto¹, Frédéric Guay¹, Yan Martel-Kennes²,³, Guylaune Talbot¹, J. Jacques Matte¹, Jérôme Lapointe¹
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P89 - The bioflavonoid luteolin regulates intestinal epithelial cell development and gut morphology in weanling pigs
Tobi Ogunribido, Kola Ajuwon
¹Purdue University, West Lafayette, United States of America

P90 - Feeding direct-fed microbial or organic acid blend alone or in combination to sows and weaned pigs impacts post-weaning gut physiology
Morgan Thayer¹, Jacob Richert¹, Brian Richert¹, Scott Radcliffe¹, Dan Jones², Matt Asmus²
¹Purdue University, West Lafayette, United States, ²ADM, Decatur, United States

P91 - Dietary carbohydrase and fibre levels on apparent total tract digestibility of energy and fibre in gestating sows and growing pigs
Garrin Shipman¹, Jorge Perez-Palencia¹, Rob Patterson², Crystal Levesque¹
¹South Dakota State University, Brookings, United States, ²CBS Bio-Platforms Inc., Calgary, Canada

P92 - Effect of increasing level of calcium on basal ileal endogenous amino acid losses in cannulated pigs fed nitrogen-free diets
Sunday Adedokun¹, Andrew Dunaway¹, David Harmon¹, Merlin Lindemann¹
¹University of Kentucky, Lexington, United States

P93 - Growth, digestibility, and digestive enzyme activity are affected by dietary protein and starch quality in newly weaned pigs
Mette Skou Hedemann¹, Nuria Canibe¹, Helle Nyaagaard Lærke¹
¹Aarhus University, Tjele, Denmark

P94 - Ileal nutrient digestibility and digesta transit behaviour of diets varying in fibre level and particle size.
Sebastián Dorado Montenegro¹, Kim Lammers-Jannink¹, Sonja de Vries¹, Walter Gerrits¹
¹Wageningen University, Wageningen, Netherlands

P95 - The impact of dietary crude protein and non-starch polysaccharidase inclusion on nursery pig performance and nitrogen retention.
Mitchell Nisley¹, Nicholas Gabler¹, Chris Sparks², Erik Vanderbeke², Kirsten De Keyser²
¹Iowa State University, Ames, United States, ²Huvepharma, United States

P96 - Nutritional effects of bovine or vegetable oils on plasma IGF-1 levels of intrauterine growth restricted piglets compared to normal piglets
Charlotte Amdi¹, Nikoline Johansson¹, Karina Skadborg Asmussen¹, Thomas Thymann¹
¹University Of Copenhagen, Frederiksberg C

P97 - Differences in faecal parameters from sows fed dried hemp plants or apple pomace intact or ground
Eva-Maria Saliu¹, Johannes Schulze Holthausen¹, Jürgen Zentek¹
¹Freie Universität Berlin

P98 - Differential expression of genes in the corpus, fundus and antrum regions of the stomach in grower pigs
Dillon Kiernan¹, John V. O'Doherty¹, Shane Maher¹, Marion Ryan¹, Torres Sweeney¹
¹University College Dublin, Dublin, Ireland

P99 - The net portal absorption of short-chain fatty acids as influenced by barley- and pea fibre with different physicochemical properties
Knud Erik Bach Knudsen¹, Nuria Canibe
¹Aarhus University, Tjele, Denmark
P100 - Influence of organic acid addition to the diets of grower pigs on gene expression in the gastric mucosa
Dillon Kiernan1, John V. O'Doherty1, Shane Maher1, Marion Ryan1, Torres Sweeney1
1University College Dublin, Dublin, Ireland

P101 - Pharmacokinetics of vitamin E and A in the serum after a meal
Sarah Elefson1, Laura Greiner1
1Iowa State University, Ames, United States

P102 - Dietary calcium supplementation reduces phosphorous absorption and causes a shift from transcellular to paracellular Ca absorption in pigs
Yixin Hu1, Jurgen van Baal1, Jan Willem Resink2, Paul Bikker1
1Wageningen University & Research, Wageningen, The Netherlands, 2Trouw Nutrition, Amersfoort, The Netherlands

P103 - Synchronisation of calcium and phosphorous supply influences phosphorous digestion and post-absorptive utilisation in growing pigs
Paul Bikker1, Annemarie Mens1, Yixin Hu1
1Wageningen University & Research, Wageningen, The Netherlands

P104 - Basal endogenous amino acid losses in the digestive tract are determined by experimental conditions, a meta-analysis.
Machiel Blok1, Wouter Spek, Paul Bikker
1Wageningen University & Research, Wageningen Livestock Research, Department Animal Nutrition, Wageningen, Netherlands

P105 - Meta-analysis of the interrelationships between Amino Acids in Basal Endogenous Losses of pigs: Proline shows deviating behavior.
Machiel Blok1, Wouter Spek, Paul Bikker
1Wageningen University & Research. Wageningen Livestock Research, Department Animal Nutrition, Wageningen, Netherlands
Session 3. Models and methodologies

P106 - In search of an animal model for IUGR to study differences in morbidity and mortality between male and female neonates
    Lieselotte Van Bockstal¹, Miriam Ayuso Hernando³, Steven Van Cruchten¹, Chris Van Ginneken¹
    ¹Comparative Perinatal Development Group, Faculty of Pharmaceutical, Biomedical and Veterinary Sciences, University of Antwerp, Wilrijk, Belgium

P107 - Olive pomace bioactives support intestinal barrier in social stressed weaned piglets
    Jose J. Pastor¹, Sergi López-Vergé¹, Gemma Tedo¹
    ¹Lucta S.A., Cerdanyola del Vallés, España

P108 - Lignin as intrinsic tracer: Quantification of lignin in pig faeces by 13C-IS pyrolysis-GC-MS
    Romy Veersma¹, Corentin Lannuzel³, Gijs van Erven³, Sonja de Vries³, Walter Gerrits², Mirjam Kabel¹
    ¹Laboratory of Food Chemistry - Wageningen University & Research, Wageningen, The Netherlands, ²Animal Nutrition Group - Wageningen University & Research, Wageningen, The Netherlands

P109 - A novel 3 step in vitro and ex vivo model to evaluate digestibility, microbial and environmental effects of swine diets
    Estefania Perez Calvo³, Pauline Jenn¹, Cathleen Lemasle³, Jérôme Schmeisser¹, Ursula M McCormack¹, Aaron J. Cowieson²
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P110 - Improving survival of low birth weight piglets - what is more important: farrowing care or drenching a milk replacer?
    Kevin Van Tichelen¹, Sara Prims¹, Miriam Ayuso³, Céline Van Kerschaver², Mario Vandaele², Jeroen Degroote², Steven Van Cruchten¹, Joris Michiels², Chris Van Ginneken¹
    ¹University Of Antwerp, Antwerp, Belgium, ²Ghent University, Ghent, Belgium

P111 - A simple laboratory method for estimating the standardised precaecal digestibility of crude protein and amino acids in pigs
    Valérie Schumacher¹, Saskia Kehraus³, Karl-Heinz Südekum³
    ¹University of Bonn, Bonn, Germany

P112 - Influence of removing serosal and outer muscle layers on estimates of intestinal permeability in everted sac segments
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P113 - Can the texture variety in feed influence the diet acceptability and pig's emotional states?
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    ¹Universidad de O’higgins, San Fernando, Chile, ²Pontificia Universidad Católica, Santiago, Chile, ³Universidad de Chile, Santiago, Chile

P114 - Towards a paradigm shift in the swine industry: Texture variety increases feed preference in nursery pigs
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P115 - Pig intestinal organoids as a model to study feed efficiency
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P116 - Lipopolysaccharide dephosphorylated with microbial-derived alkaline phosphatase alters sickness behavior and inflammatory response in weaned pigs
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    ¹Elanco Animal Health, Greenfield, United States, ²University of Illinois at Urbana-Champaign, Urbana, United States
P117 - Development of an in vitro model to study intestinal integrity during an E. coli K88 challenge

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P118 - Use of diets’ rheological parameters to predict digesta retention time throughout the gastrointestinal tract of growing pigs.

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P119 - Feed choice behaviour of piglets post weaning exposed to phytogenic feed additives

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P120 - Generating piglet intestinal organoids to study the effects of luminal fermentation metabolites

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P121 - Validation of in vitro protein fermentation with faecal inoculum from pigs using the gas production technique

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P122 - Use of the Dual Marker Technique to Estimate Individual Feed Intake of Young Pigs

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P123 - Expression of DNA-repairing AlkBh proteins in the tissues of intrauterine growth retarded pig

Karolina Ferenc1, Tomasz Piltys2, Damian Garbicz2, Michal Marcinkowski2, Jaroslaw Olszewski2, Zdzislaw Gajewski1, Elzbieta Grzesiuk2, Romuald Zabielski1

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P124 - An association of Curcuma and Scutellaria plant extracts protects against inflammation induced by LPS in intestinal porcine epithelial cells

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P125 - Association of faecal consistency with myeloperoxidase as biomarker in weaned piglets

Noémie Van Noten1, Eveline Matthys1, Luc Goethals1

1Sanluc International, Gent, Belgium

P126 - Simulation of naturally occurring diurnal heat stress damages gut integrity and alters plasma biomarkers in grower pigs

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1United Animal Health, Sheridan, United States
Session 4. Functionality of the intestinal microbiome

P127 - A probiotic reduces inflammation in intestinal cells coupled with an in vitro model of the piglet colon challenged by ETEC.
Raphaële Gresse1,2, Frédérique Chaucheyras Durand1,2, Sylvain Denis1, Martin Beaumont1, Caroline Achard3, Tom Van de Wiele4, Evelyn Forano1, Stéphanie Blanquet-Diot1
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P129 - Modification of the neonatal microbiota alters epithelial homeostasis and imprints stem cells in the colon of piglets
Martin Beaumont1, Lise Gallo1, Laure Gress1, Laurence Le-Normand2, Ellouan Perrot2, Samia Laraqui2, Gaëlle Boudry3
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P130 - Bacterial metabolites in stomach and jejunum of neonatal piglets and the influence of oral glutamine supplementation on them
Johannes Schulze Holthausen1, Quentin, Leon Sciascia2, Johannes Schregel2, Cornelia Christiane Metges2, Jürgen Zentek1
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P131 - Lower Bacteroides and metabolic dysfunction are associated with diarrhea of post-weaning piglets
Wen Ren1, Bing Yu, Jinlong Wu, Yuheng Luo, Daiwen Chen
1Sichuan Agriculture University, Chengdu, China

P132 - Use of Bacillus subtilis strains to alleviate effects of feeds experimentally contaminated with deoxynivalenol in piglets
David Torralardona1, Boris Villa1, Clarisse Techer2, Typhaine Morisset2, Alexandre Brame2, David Guillou2
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P133 - Evaluation of Bacillus subtilis on performance and microbiota of weaned pigs
Anthony Brassea1, Miguel Cervantes1, Lucero Camacho1, Ernesto Avelar1, Adriana Morales1
1Universidad Autónoma de Baja California, Mexicali, Mexico

P134 - An in-feed postbiotic with inactivated Lactobacilli and spent culture medium increases resilience of piglets against enterotoxigenic Escherichia coli
Philippe Tacon1, Sergio Della Zassa1, Catherine Laravoire1, Erik Eckhardt1
1Adare Biome, Houdan, France

P135 - Effect of a feed additive combination on the enteric microbiome and on chemical characteristics and ammonia emissions of stored manure
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P136 - Feeding multi-strain probiotics improved carcass traits and meat quality in pigs
Ting-Yu Lee1, Yi-Chu Liao1, Hsiao-Tung Chang1, Hsiao-Ching Lin1, Hsiu-Ming Weng1, I-Ju Chang1, Fang Chi1, San-Land Young1, Jin-Seng Lin1
1Synbio Tech Inc., Kaohsiung, Taiwan
P137 - Effects of probiotics on sow welfare and piglets’ vitality at birth  
Melody Pereira¹, Ines Andretta¹, Carolina Franceschi¹, Marcos Kipper², Alexandre Mariani¹, Thais Stefanello¹, Andrea Ribeiro¹  
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P138 - Alterations in digesta- and mucosa-associated bacteria of growing pigs with and without diarrhea  
Farhad M. Panah¹, Charlotte Lauridsen¹, Ole Højberg¹, Tina Skau Nielsen¹  
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P139 - Effects of dietary rye and rapeseed on microbiota and histomorphology of the colon in weaner pigs  
Carola Ellner¹, Ilen Röhe¹, Jürgen Zentek¹  
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P140 - The impact of different levels of enzyme-treated soy fibre in weaners’ diets on performance and SCFA production in the hindgut  
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P141 - Effect of on-top supplementation of branched-chain amino acids and arginine on the faecal microbiota and haematological parameters in lactating sows  
Federico Correa¹, Luise Diana¹, Tristan Chalon-Demerssay², Aude Simongiovanni², Paolo Bosi³, Paolo Trevisi³  
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P142 - Protopig: Influence of digesta and mucosal microbiota in nitrogen utilization efficiency of pigs  
Naomi Sarpong¹,², Alina Kurz¹,², Daniel Berghaus¹, Ramona Weishaar¹, Eva Haese¹, Jörn Bennewitz¹,², Markus Rodehutscord¹,², Jana Seifert¹,², Amélia Camarinha-Silva¹,²  
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P143 - Effect of Saccharomyces cerevisiae boulardii CNCM I-1079 on bile acid signaling in post-weaning piglets  
Fernando Bravo de Laguna¹, Aleix Gavaldá-Navarro², Inma Alvarez-Acero³, Francesc Villarroya³, Sonia de Pascual-Teresa³, Emmanuelle Apper¹, Eric Chevaux³, Mathieu Castex³, Ignacio R. Ipharraguerre³  
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P144 - Feeding pregnant sows and their offspring Bacillus-based probiotic is an efficient way to improve gut function in piglets at weaning  
Romuald Zabielski¹, Pawel Konieczka¹,², Jens Noesgaard Jærgensen⁴, Jaroslaw Olzewska¹, Magdalena Mazur-Kuśnierek⁵, Dominika Szkopek¹, Natalia Szyrulik⁵, Krzysztof Lipiński⁵, Zdzisław Gajewski⁵, Karolina Ferenc¹  
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P145 - Growth performance and gut microbiome of weanling pigs fed dietary enzyme complex and fibrous feed ingredients  
Chan Sol Park¹, Ayodeji Aderibigbe¹, Deepak Velayudhan², Wenting Li², Leon Marchal²,³, Timothy Johnson³, Olayiwola Adeola¹  
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P146 - Feed efficiency in grower-finisher pigs in relation to faecal microbiota functionality  
Lisanne Verschuren¹, Jette Wennakes¹, Olivier Zemb², Mario Calus³  
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P147 - Apple pomace supplementation modulates colonic microbiota promoting health benefits in post-weaning piglets

Ester Arévalo Sureda, Martine Schroyen, Sandrine Dufourny, Julie Uerlings, Pierre Rondia, Véronique Delcenserie, José Wavreille, Nadia Everaert

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P148 - Increased protein fermentation metabolites and pathogenic bacteria are linked to piglet post-weaning diarrhoea under practical conditions

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P149 - The influence of dietary ingredient quality and protein level on gut microbiota composition and microbial metabolites in weaning pigs

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P150 - Supplementation of xylo-oligosaccharides to suckling piglets modulates their hindgut microbial populations during the lactation and nursery periods.

Francesc González-Solé, David Solà-Oriol, Yuliaxis Ramayo-Caldas, Gemma González-Ortiz, Michael R. Bedford, José Francisco Pérez

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P151 - Effects of structural carbohydrates, SID Thr/Lys and fermentable protein on gut microbiome composition and relationship with performance in nursery pigs

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P152 - Organic acid and salt blend treatment of cereal at harvest improves growth performance in the post weaned pig.

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P153 - Effects of early postnatal faecal transplantation on health and growth of pigs

Christina Larsen, Simone M. Orefsen, Anders Brunse, Carmen Espinosa-Gongora, Luca Guadabassi, Thomas Thymann

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P154 - Associations between exploratory behaviour and the composition of the gut microbiota in pigs

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P155 - Using probiotics and enzymes to improve liquid fermented feed for piglets

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P156 - Effect of graded doses of zinc from different sources on growth performance of weaned piglets
Agathe Romeo1, Jonathan Riedmüller1, Klaus Männer1, Wilfried Vahjen1, Naiana Manzke1, Jürgen Zentek1
1Animine, Meythet, France, 2Freie Universität Berlin, Berlin, Germany

P157 - Role of the cecum on fecal microbial community structure in finisher pigs using a cecectomized pig model
J.P. Knapp1, A.C. Neujahr1, M.D. Trenhaile-Grannemann1, K.A. Nguyen1, J. Wittler1, G. Sullivan1, S.C. Fernando1, P.S. Miller1, Thomas Burkey1
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P158 - The evaluation of cecal and fecal microbial community structure in cecum-cannulated grower pigs fed a high fiber diet
J Knapp1, A Neujahr1, M Trenhaile-Grannemann1, K Nguyen1, J Wittler1, S.C. Fernando1, P.S. Miller1, Thomas Burkey1
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P159 - Standardization of the C:N ratio in ileal digesta of pigs alters relationships among fermentation end-products during in vitro hindgut fermentation.
Kim Lammers-Jannink1, Wilbert Pellikaan1, Walter Gerrits1
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P160 - Particle size of commonly consumed grains and brans: an important functional property affecting fermentability by gut microbiota
Hong Yao1, Bernadine M. Flanagan1, Barbara Williams1, Deirdre Mikkelsen1
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P161 - Impact of supplementing lactating sows’ diets with an Aspergillus oryzae-derived prebiotic
Cesar Ocasio Vega1, Cesare Tartarini2, Raffaella Rossi3, Prof. Carlo Corino3
1BioZyme Inc., St. Joseph, United States, 2Prodotti A.I. Chem S.r.l., Peschiera Borromeo, Italy, 3Department of Veterinary Medicine and Animal Science, University of Milan, Italy
Session 5. Role of the gut in whole body functioning and health

P162 - Combination of functional amino acids can promote performance and gut morphology in piglets
Orasin Phornlaphat1, Tristan Chalvon-Demersay1
1METEX NOOVISTAGO, Paris, France, 2Bangkok Animal Research Center, Bangkok, Thailand

P163 - Interaction between a potentiated formulation of ZnO and a mixture of tannins to reduce post-weaning-diarrhea in an ETEC infection model
Catherine Ollagnier1, Maria-Rita Mellino2, Nicolas Pradervand1, Agathe Romeo1, Olivier Desrues4, Giuseppe Bee1
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P164 - DIETARY FUMONISINS POTENTIALLY MODULATE SOME HEALTH INDICATORS IN WEANED PIGLETS
Yasmin Yunus Zeebone1,2, Melinda Kovács1,2, Brigitta Bota2, Krisztián Balogh2, Veronika Halas1
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P165 - Effect of the maternal diet and growth rate in the suckling period on nutrient uptake in the jejenum of piglets
Marion Girard1, Marco Tretola1,2, Francesco Palumbo1,3, Federico Correa1, Paolo Silacci4, Giuseppe Bee1
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P166 - Dietary supplementation with Pichia guilliermondii yeast product during gestation and lactation improves sows’ body condition and litter performance
Emmanuel Janvier1, Clementine Oguey2, Arnaud Samson3
1ADM, Saint-Nolff, France, 2ADM, Rolle, Switzerland, 3ADM, Chierry, France

P167 - Exploring the dietary effects of a medium chain fatty acids and monoglycerides premixture in weaned piglets challenged with Streptococcus suis
David Guillou1, Xiaonan Guan2, Anoushka Middelkoop2, Noémie Lemoine1, Francesc Molist2
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P168 - Effect of coarse indigestible fiber in piglet diet at weaning on digestive health status indicators and growth performance
Noémie Lemoine1, David Brillouet1, David Guillou1
1Mixscience, Bruz, France

P169 - Meta-analysis of the effects of inactivated Pichia guilliermondii yeast fed to sows on progeny performance before and after weaning
Clementine Oguey1, Morgan Thayer2, Dan Jones3, Arnaud Samson1
1ADM Animal Nutrition, Rolle, Switzerland, 2ADM Animal Nutrition, Quincy , USA, 3ADM Animal Nutrition, Chierry, France

P170 - Effect of inert carbohydrates on performance and microbiota of sows and their piglets
Xandra Benthem de Grave1, Francesc Molist1
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P171 - Age rather than creep feeding modified jejunal and caecal gene expression for fatty acid-signalling and immune response in neonatal piglets
Frederike Lerch1,2, Julia Vötter1,2, Simone Koger1,2, Juliane Ehmig1, Doris Verhovsek4, Barbara Metzler-Zebeli1,2
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P172 - Effects of dietary crude protein content and resistant starch supplementation on growth performance, histomorphology, and microbial metabolites in weaned pigs
Jinyoung Lee1, Jolie Caroline González-Vega2, John Khan Hoo3, Martin Nyachoti1
1University of Manitoba, Winnipeg, Canada, 2Evonik Operations GmbH, Hanau-Wolfgang, Germany

P173 - Ileum transcriptomic profiling post-weaning pinpoints differences in intestinal physiological status and maturity between light and heavy weight weaned piglets
Sofia Moraí1, Gemma Tedó1, Sergio López-Vergé1, Rita Maria Benítez2, Cristina Óvilo2
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P174 - The level of hemicellulose in lactating sow diet affects the faecal volatile fatty acid profile and microbiota.
Francesco Palumbo1,2, Giuseppe Bee1, Paolo Trevisi1, Federico Correa1, Catherine Ducrest1, Marion Girard1
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P175 - Feeding a Bacillus-based probiotic to lactating sows and their offspring - Impact on fecal microbiota and performance of piglets
Lea Hübertz Birch Hansen1, Lena Raff2
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P176 - Evaluation of dietary supplementation with formic acid and zinc oxide in weaning piglets
David Torrallardona1, Gerald Wischer2, Peter Ader2
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P177 - Short and medium chain fatty acids monoglycerides as antimicrobials alternative in diets for weaning piglets challenged with E. coli K88
David Torrallardona1, Joan Tarradas1, Ignacio Badiola1, Ana Pérez de Rozas1, Adriana Barri2, Peter Ader2
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P178 - Functional milk formula with pre-hydrolyzed fat ameliorates gut maturation and LCPUFA absorption in a porcine model of premature infants
Jarosław Wolifski1,2, Anna Socha-Banasiak3, Kamil Zaworski2, Kateryna Pierzynowska3,4,6, Stefan Grzegorz Pierzynowski1,4,6
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P179 - Attempt to restore backfat efficiently in gestating sows using four different fiber supplements
Sigrid Jost Wisbech1, Knud Erik Bach Knudsen1, Thomas Sønderby Bruun2, Per Tybirk2, Tina Skau Nielsen1, Peter Kappel Theil1
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P180 - Optimising immune response in vaccine challenged piglets through micro nutrients
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P181 - Does supplementation with threonine and tryptophan above nutrient requirement to weaned piglets improve gut health parameters?
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P182 - The combination of spray dried plasma and reduced crude protein in diets decreases circulating cytokines of weaning pigs
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P183 - Mixed doses of glutamate and glutamine contribute to improving the gut health and immunity of post-weaning piglets.
Diana Luisi1, Tristan Chalvon-Demessy1, Federico Correa1, Livio Galosi3, Giacomo Rossi1, William Lambert2, Clara Negrini3, Paolo Bosi1, Paolo Trevisi1
P184 - Stimulation of the gut functionality of post-weaning pigs with the administration of ETEC
F4/F18 bivalent vaccine
Paolo Trevisi1, Diana Luise1, Federico Correa1, Laura Amatucci1, Sara Virdis1, Clara Negrini1, Francesco Palumbo1,2, Mario Vecchi1, Maurizio Mazzoni3, Pedro Jose Sanchez1, Paolo Bosi1
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P185 - A synergistic blend of organic acids in drinking water of piglets supports post-weaning growth performance – a meta-analysis
Lane Pineda1, Mandy Lingbeek1, Yanming Han1
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P186 - Effects of maize naturally contaminated with deoxynivalenol and of dietary anti-oxidants on oxidative stress in fattening pigs
Eric Royer1, Philippe Pinton2, Florence Barbé1, Manon Neves1, Laurent Alibert1, Mathieu Castex3
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P187 - A Multi-Component Approach to Optimize Nursery Piglet Immunity Starting with the Sow
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P188 - Supplementation of fibre and Bacillus subtilis DSM 32540 alone or in combination on performance and gut health of weaned pigs
Gloria Casas1, Caroline González-Vega1, Martina Kluenemann2, John Htoo2
1Universidad Nacional de Colombia, Bogota, Colombia, 2Evonik Operations GmbH, Hanau-Wolfgang, Germany

P189 - Effect of dietary fiber source and probiotic supplementation on performance and diarrhea incidence of nursery pigs
Dante Teixeira Valente Junior1, Gustavo Amorim Rodrigues1, Elisa Oliveira Frank1, Vinicius Scalabrini Brito1, Caroline Jolie González-Veja1, John Kyaw Htoo1, Henrique Gastmann Brand1, Bruno Alexander Nunes Silva2, Alysson Saraiva3
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P190 - Effect of dietary fiber source and probiotic supplementation on intestinal morphology and permeability of nursery pigs
Dante Teixeira Valente Junior1, Gustavo Amorim Rodrigues1, Maykelly da Silva Gomes1, Elisa Oliveira Frank1, Caroline Jolie González-Veja1, John Kyaw Htoo1, Henrique Gastmann Brand1, Bruno Alexander Nunes Silva2, Alysson Saraiva3
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P191 - Feeding hydrolyzed copra meal and fermented rye blend on gut health of weaned piglets challenged with E. coli K88
Mandy Lingbeek1, Yanli Zhang1, Xianren Jiang2, Xilong Li1, Yuan Yuan Wu1, Sandra van Kuijk1, Yanming Han1
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P192 - Dietary uptake of a wood-based feed supplement improves antioxidative status and gut integrity of piglets challenged with Brachyspira hyodysenteriae
Paula Angélica Correia1, Roberto Mauricio Carvalho Guedes1, Christine Potthast1, Stefan Hirtenlehner1
1agromed Austria GmbH, Kremsmünster, Austria, 2Universidade Federal De Minas Gerais, Belo Horizonte, Brazil
P193 - Impact of zearalenone-contaminated sugar beet pulp on modern sow reproduction
Jeannette Kluess1, Angelika Grümpl-Schlüter1, Susanne Kersten1, Janine Saltzmann1, Antje Schubbert1, Sally Rauterberg1, Stefan Büngener-Schröder1, Sven Dänicke1
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P194 - Dietary indigestible protein increases post-weaning diarrhoea in piglets irrespective of sanitary housing conditions
Myrthe Gilbert1, Lonneke Noorman2, Bart van der Hee1, Walter Gerrits1
1Wageningen University & Research, Wageningen, Netherlands, 2Utrecht University, Wageningen, Netherlands

P195 - Feeding antibacterial plant combinations to mitigate post-weaning diarrhoea in organic piglets challenged with enterotoxigenic Escherichia coli F18
Kevin Jerez-Bogota1, Ole Højberg2, Martin Jensen1, Nuria Canibe2
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P196 - Maternal and/or direct supplementation with a casein hydrolysate and yeast β-glucan on post-weaning performance and intestinal health in the pig
Eadaoin Conway1, John V. O'Doherty1, Anindya Mukhopadhyaa1, Alison Dowley1, Stafford Vigors1, Marion Ryan2, Torres Sweeney2
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P197 - Maternal supplementation with casein hydrolysate and yeast beta-glucan from late gestation through lactation improves gastrointestinal health of piglets at weaning.
Alison Dowley1, John V. O'Doherty1, Anindya Mukhopadhyaa1, Eadaoin Conway1, Stafford Vigors1, Shane Maher1, Marion Ryan1, Torres Sweeney1
1University College Dublin, Dublin, Ireland

P198 - Effects of dietary supplementation with mushroom or vitamin D2-enriched mushroom powders on gastrointestinal health parameters in the weaned pig
Alison Dowley1, Torres Sweeney1, Eadaoin Conway1, Stafford Vigors1, Supriya Yadav2, Jude Wilson2, William Gabrielli2, John V. O'Doherty1
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P199 - The effect of a marine mineral complex on growth performance of weaned piglets
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1Celtic Sea Minerals, Cork, Ireland, 21st Ten Consulting Asia Pacific, Santa Domingo Bay, Philippines, 3Plant Biostimulant Group, Shannon Applied Biotechnology Centre, Munster Technological University-Tralee, Tralee, Ireland

P200 - Application of different butyric acid derivatives in weaning piglets
Elke von Heimendahl1, Georg Dusel2, Katharina Schuh3
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P201 - Impact of oral administration of single-domain antibodies on post-weaning diarrhea - a challenge study with E. coli F4
Jiajia Xu1, Michael Pichler2, Tiia Kittilä2, Emma Wenzel Horsted1, Andreas Hougaard Laustsen2,3, Susanne Brix2, Sandra Wingaard Thranne1, Nuria Canibe1
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P202 - Effect of post-weaning acute feed and water deprivation and high DON diet on growth performance and intestinal health in piglets
Yemi Burden1, Nathan Horn1, Adrienne Woodward1
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P203 - Early life fibre-enriched diets affect gut functionality of piglets challenged with enterotoxigenic Escherichia coli after weaning

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P204 - Effects of dietary protein level on intestinal function and inflammation in growing pigs

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P205 - Dietary intervention with microbial-derived alkaline phosphatase exerts protective effects against post-weaning syndrome in pigs

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P206 - Effect of raw potato starch to newly weaned piglets on post-weaning diarrhoea and SCFA production.

Maiken Engelsmann1, Tina Skau Nielsen, Mette Skou Hedemann, Uffe Krogh, Jan Værum Nørgaard1
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P207 - The influence of nutritional supplementation and weaning age on health, intestinal morphology and performance of piglets pre- and post-weaning

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P208 - The effects of particle size and reduced feeding patterns on gastric ulceration in growing pigs

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P209 - The effect of feeding a low-protein diet for a short period on weaning diarrhea and antibiotic treatments

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P210 - Effects of dietary arginine supplementation on pig growth performance and health status following weaning stress

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P211 - Novel probiotic feed additive based on Bacillus coagulans DSM32016 improves growth performance and faecal consistency in weaned piglets

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P212 - Intestinal barriers in intrauterine growth restricted piglets

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P213 - Specific fibre fractions can decrease E.coli adhesion and intestinal inflammation in weaned piglets

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P214 - Enzymatically treated yeast in diets of weanling pigs
**Emmanuel Alagbe**, Hagen Schulze, Kolapo Ajuwon, Olayiwola Adeola
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P215 - Higher amino acid demand in portal drained viscera of post-wean piglets
Jan Willem Resink, Walter Gerrits, Tetske Hulshof, Nicolaas Deutz, Gabriella Ten Have
1Trouw Nutrition, R&D, Boxmeer, Netherlands, 2Wageningen University, Animal Nutrition Group, Wageningen, Netherlands, 3Texas A&M University, Center for Translational Research in Aging & Longevity, Dep. Health and Kinesiology, College Station, United States of America

P216 - Transcriptomic and DNA methylation response to feed intake in the duodenum in high- and low- feed efficiency pig lines
**Guillaume Devailly**, Katia Fève, Safia Saci, Julien Sarry, Sophie Valière, Olivier Bouchez, Laure Ravon, Yvon Billon, Martin Beaumont, Hélène Gilbert
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P217 - Influence of n-3 fatty acids in sow and piglet diets on ileal transcriptome of piglets 28 days post-weaning
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P219 - Effects of dacitic tuff breccia and poultry by-products on jejunal morphology and gene expression of nursery pigs
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