

INTERNATIONAL CONFERENCE ON SWINE NUTRITION

August 11 & 12, 2021

Benton Auditorium, Scheman Building
Iowa State University Campus



20th INTERNATIONAL
21st CONFERENCE ON
SWINE NUTRITION

AUGUST 11

7:30 Registration Opens

Session #1

8:15 **Welcome**

8:30 **Progress in research in swine nutrition in China: where it was, where it is, and where it is headed**

Dr. Defa Li, Professor, College of Animal Science and Technology at the China Agricultural University, Beijing, China

Over the past 2 decades, Chinese nutrition research has progressed to become a major global force. A large investment in well trained personnel, modern equipment and enhanced facilities has greatly strengthened their research capability. Much of their focus has been on development of a feed ingredient database and nutrient requirements book specifically focused on China, pork quality improvement through genetics and nutrition, gut health related to dietary fiber and the development of new feed additives to replace antibiotics.

9:10 Questions and discussion

9:20 **Feeding to optimize the performance of the highly prolific female and her offspring**

Dr. Peter Theil, Full Professor, Aarhus University, Tjele, Viborg, Denmark

This presentation will discuss the feeding of sows during transition and lactation to minimize farrowing problems, lower still births, while maximizing colostrum production and pre-weaning survival, and sow milk yield/litter daily gain and reduce sow tissue mobilization. Special attention will be given to dietary fibers, because they have a variety of beneficial effects in sow diets.

10:00 Questions and discussion

10:10 BREAK

Session #2

10:40 **Nutritive and non-nutritive roles of fiber in the diet. Is there any good news?**

Dr. John Patience, Professor, Iowa State University, Ames, IA

Fiber is often viewed as a negative in pig diets, because it acts as a nutrient diluent, reduces bulk density and impairs energy and nutrient digestibility. But fiber can also play a role in gut health and impact the severity of certain diseases. The past decade has seen tremendous growth in our knowledge about fiber, but what does it all mean, and how can these advances improve the way we feed pigs? This presentation will start with the best ways to analyze fiber, and go from there.

11:20 Questions and discussion

11:30 Panel Discussion: Implementing decisions at the feed mill

Moderator: Dr. Cassie Jones, Associate Professor, Kansas State University, Manhattan, KS; **Panelists:** Dr. Roger Cochrane, Director of Feed Mills, Pipestone Nutrition, Pipestone, MN; Ashton Yoder, Feed Mill Operations Manager, Land O'Lakes, Wichita, KS; Dr. Chris Parks, Swine Nutritionist, Provimi NA Inc, Lewisburg, OH

12:20 LUNCH

Session #3

1:20 Soybean meal: Growth and health promoting effects under high health and immune stress

Dr. R. Dean Boyd, Animal Nutrition Research LLC, Alvaton, KY

Soybean meal is a superb amino acid source for pigs and poultry but the other 50% of the meal has a myriad of bioactive and other components that are growth and health promoting. They facilitate greater expression of growth potential under high health and improve growth expression under high immune stress. This presentation makes this case and proves that dietary SBM depletion comes at a cost to gain and feed conversion in growing pigs.

2:00 Questions and discussion

2:10 The role of modelling in nutrition and management – Current successes and future prospects

Dr. Neil Ferguson, Trouw Nutrition, Guelph, ON. Canada

This paper will focus on how commercial application of a model can provide practical nutrition, economic and management solutions in a persistent volatile pig market. Attention will be given to key drivers for success, real examples, new innovations e.g weaning and post-weaning growth, feed additives and gut health, and some opportunities for future digital innovations.

2:50 Questions and discussion

3:00 BREAK

Session #4

3:30 Xylanase: Translating its mechanism of action into successful application in swine diets

Dr. Amy Petry, Assistant Professor, Texas Tech University, Lubbock, TX

Supplementing xylanase is often considered a black box of variable performance outcomes. A better grasp on its mechanism of action, specifically in the presence of corn-based fiber, should help. This presentation will summarize our current understanding of the mode of action of xylanase that differ considerably from current dogma. Special attention will be given to translating this knowledge into strategies to improve pig health and fiber utilization.

4:10 Questions and discussion

4:20 Energy: How to value dietary fat and implications for diet formulation

Dr. Trey Kellner, Nutritionist, AMVC, Audubon, IA

This discussion will highlight attempts to assign caloric values to dietary fat and the impact of dietary fat and diet caloric density on caloric intake, carcass gain, and economic outcomes. Plus, the impact of dietary fat on carcass fat quality and other economic variables will be discussed.

5:00 Questions and discussion

5:10 Patience retirement celebration

6:00 ADJOURN

Dinner on your own

AUGUST 12

7:00 Continental breakfast

7:30 Hog Wild with Wayne Cast

An open panel discussion; audience is encouraged to pose questions and offer their own experiences on any topic of interest.

Moderator: Wayne Cast, Swine Nutrition Consultant, Value Added Science and Technologies, Princeton, MO; **Panelists:** Dr. Noel Williams, Chief Operating Officer, Iowa Select Farms, Iowa Falls, IA; Dr. Brent Frederick, Dr. Brent Frederick, Pork Innovation Lead, Cargill, New Ulm, MN; Dr. Josh Flohr, Technical and Production Support Manager, Seaboard Foods, Guymon, OK.

Session #5

Chair:

8:30 Livestock microbiota manipulation through nutrition

Dr. Dana Stanley, Associate Professor, Central Queensland University, North Rockhampton, Australia

In the last decade, we learned considerable about intestinal; however, despite all the new knowledge, we are still not able to control its colonization and maturation. This presentation will focus on ways to manipulate the development of intestinal microbiota of agricultural animals for better pathogen control and improved performance, control of antimicrobial resistance and alternatives to antibiotics.

9:10 Questions and discussion

9:20 A European perspective of applied swine nutrition.

Dr. Jaume Coma, Val Companys, Lleida, Spain

The presentation will cover the European view of different topics as 1) Different raw materials: changes and variability of composition at the feed mill, 2) raising piglets without antimicrobials / zinc oxide, 3) considerations on feeding non-castrated pigs in the growing-finishing stage and 4) effects of applied swine nutrition on practical sustainability of pork production.

10:00 Questions and discussion

10:10 BREAK

Session #6

10:40 What we have learned and future thoughts on feeding pigs during times of stress and disease

Dr. Nick Gabler, Professor and Associate Chair, Iowa State University, Ames, IA

Common stresses (eg. weaning, heat stress, oxidative stress, inflammation, pathogens) impair performance. Understanding their impact on digestibility, metabolism, protein accretion and feed efficiency provides insight into strategies to improve poor-health pig production. This talk will discuss known, new and future insights into how nutrition can be used to mitigate weaning and disease stress in wean to finish pigs.

11:20 Questions and discussion

11:30 Panel Discussion #1: Raising pigs without antibiotics or other technologies.

Moderator: Dr. Chad Pilcher, Nutritionist, Provimi NA Inc, Lewisburg, OH

Panelists: Dr. Laura Greiner, Assistant Professor, Iowa State University, Ames, IA;
Mr. Ben Keeble, Vice-President – U.S. Production, Sunterra Farms, Sioux Falls, SD;
Dr. Steve Kitt, First Choice Livestock,

12:20 LUNCH

Session #7

Chair:

1:20 Towards increased accuracy of estimating net energy of diets and feed ingredients for ad libitum fed group housed pigs using the indirect calorimetry approach.

Dr. Hans Stein, Professor, University of Illinois, Champaign, IL

Since the last major updates to net energy systems for pigs were implemented more than 25 years ago, new analytical tools, new knowledge about nutrient digestibility and absorption, new feed technologies, and new feed additives have been developed. It is, therefore, possible that this new knowledge can be incorporated into an improved net energy system for pigs

2:00 Questions and discussion

2:10 Where are we headed with branch chained amino acids and swine nutrition in general

Dr. Mike Tokach, Distinguished Professor, Kansas State University, Manhattan, KS

Increased corn protein in U.S. swine diets creates a need to understand the impact of high leucine levels on requirements of other amino acids. Mike will focus on the practical implications of branch chain amino acid nutrition. Mike has also been charged with addressing the future of swine nutrition and training of the next generation of nutritionists.

2:50 Questions and discussion

3:00 Final comments

Dr. Aaron Gaines, Managing Partner, AniTek, Shelbina, MO

This presentation will offer final comments to end the conference.

3:30 ADJOURN