2024 Banff Pork Seminar

Advances in Pork Production Volume 35

Banff, Canada 9-11 January 2024

ISBN: 978-1-7138-9232-8

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by University of Alberta All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

For permission requests, please contact University of Alberta at the address below.

University of Alberta Department of Agricultural, Food and Nutritional Science 4-10 Agriculture/Forestry Centre, University of Alberta Edmonton, AB, Canada T6G 2P5

Phone: (780) 492-3651 Email: pork@ualberta.ca

www.banffpork.ca

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

Table of Contents

- 4 ❖ Preface
- 6 ❖ List of Sponsors
- 9 Index of Advertisers
- 15 ❖ Table of Contents

Plenary Sessions

22 ❖ The Canadian Pork Industry – An Integrated Pork Processor's View

Arnold Drung

Breakout Sessions

- 1. Feed & Nutrition
- 33 ❖ Food & Fuel Industry Co-Products: Considerations for Swine Nutrition Programs

 Jay Squire
- - 2. Piglet Management
- 52 ❖ Nutrition & Management of Weaned Pigs Fed Low Zinc
 Diets
 Mike Tokach
- 60 **❖** Weaning Age Impact on Piglet and Sow Performance Luc Dufresne

3. Technology

- 87 ❖ ProHog Management: A Refresh on Margin Steve Dziver

4. Innovators

194 ❖ Effects of beta-glucans on the intestinal inflammation in weanling pigs

Marley Conceição dos Santos, Josiane Carla Panisson, Renata Bacila, Vivian Vieira, Alex Maiorka and Simone Gisele de Oliveira

- 200 Sisease resilience indicators based on immune stimulation of blood from young healthy pigs
 V. Bhatia, X. Bai, F. Fortin, J.C.S. Harding, M.K. Dyck, C.J. Field, C. Rogel-Gaillard, F. Blanc, G.S. Plastow, PigGen Canada and J.C.M. Dekkers
- 207 ❖ Comparing motility, biofilm formation, and Amoxicillin resistance of E. coli isolated from wild and conventional pigs

 Joshua Theriault, Rajibur Rahman, Tingting Ju, Janelle M. Fouhse, Julia Neyedly, Ryan K. Brook, and Benjamin P. Willing

5. Genomics

94 ❖ What is Genomic Selection and What Has Been Its Impact on Current Genetics

Tom Rathje

102	*	Individual SNP Effects and Interesting Applications in Pig Breeding		
110	*	Egbert Knol Indicators and Genetics of Disease Resilience Jack Dekkers		
	6. G	Frow-Finish Management		
124	*	Optimizing Feeding and Management Strategy in and Finisher Dan Bussierres		
133	*	A Survey of Best Management Practices of Swine Farms Across Canada Ken Engele		
148	*	The Effect of Space Allowance and Marketing Strategy on Production Performance of Grower-Finisher Pigs Willem Steyn		
	7. S	ow Management		
161	*	Where Have All the Gilts Gone, Impact of Mortality & Removals on Gilt Retention Jayne Jackson		
173	*	Proposition 12 Sow Management: Lessons Learned <i>PJ Corns</i>		
	8. Swine Health			
176	*	Internal Biosecurity – Is There Value for You? Brad Chappell		
181	*	Update on Sapovirus: An Industry Perspective Matt Ackerman		
188	Abst	tracts: Best of Current Research		

ABSTRACTS: Best of Current Research

Nutrition

192	*	No difference in growth performance feeding frost-damaged or mid-tannin, hulled or dehulled faba bean to weanling pigs L.F. Wang, J.A. Valle, F. González, P.W. Nyende, R.T. Zijlstra and E. Beltranena
193	*	Effects of source of ingredient, diet particle size, and sex on growth performance and gastric ulcer incidence in finishing pigs B.M.H. Chau, A.D. Beaulieu and R.W. Newkirk
194	*	Effects of beta-glucans on the intestinal inflammation in weanling Pigs Marley Conceição dos Santos, Josiane Carla Panisson, Renata Bacila, Vivian Vieira, Alex Maiorka and Simone Gisele de Oliveira
195	*	Multi-NSP enzyme activities improve performances of piglets consuming high fiber and low net energy diets Leni Kuterna, Bertrand Medina, Dan Bussières and Ivan D. Girard
196	*	Effect of feeding barley-based diets differing in fermentable starch and fibre on nutrient digestion and body composition in weaned pigs J. Sanchez-Zannatta, L.F. Wang, E. Beltranena, A.D. Beattie, R.W. Newkirk and R.T. Zijlstra
197	*	Response of growing pigs to the inclusion of hybrid rye in low or high energy diets Miranda N. Smit, Josi C. Panisson, and A. Denise Beaulieu
198	*	Fermentability of barley endosperm and processed barley hulls affect nutrient digestibility in weaned pigs L. Zhu, L.F. Wang, R.N. Newkirk, A.D. Beattie, E. Beltranena, and R.T. Zijlstra

Health

199	*	Effects of acid-binding capacity in low-zinc diets on growth performance of weaned pigs J. L. Landero, L.F. Wang, L. Zhu, J.R. Bergstrom, M.G. Young, and R.T. Zijlstra
200	*	Disease resilience indicators based on immune stimulation of blood from young healthy pigs V. Bhatia, X. Bai, F. Fortin, J.C.S. Harding, M.K. Dyck, C.J. Field, C. Rogel-Gaillard, F. Blanc, G.S. Plastow, PigGen Canada and J.C.M. Dekkers
201	*	Whole bacterial cell ELISA for relative measurement of Streptococcus equi subsp. zooepidemicus antibody levels in serum Hannah Burlet, Ana Norte, Roman Nosach, Arthur Finatto, Daniela Gutierrez Montiel, Suzana Stubert, Alison Jeffery and Matheus Costa
202	*	Assessing the Prevalence of C. Difficile and Clostridium perfringens type A on Canadian Farms with Enterocheck DeGroot, M.; Boix, O.; Galé, I. and Ibanez, G.
203	*	Refining an animal model for porcine ear-tip necrosis Alison Jeffery, Hannah Burlet, Roman Nosach, Matheus Costa
204	*	Transepithelial ion transport in the stomach of pigs exposed to gastric ulcer conditions Agbee L. Kpogo, Josiane C. Panisson, Denise Beaulieu, Rex Newkirk and Matthew Loewen
205	*	A blend of spice oleoresins can substitute the growth promoting effect of salinomycin on grower-finisher hogs: A commercial evaluation Bertrand Medina, Dan Bussières and Ivan D. Girard
206	*	Clinical benefits of an in-water essential oil blend on antibiotic-free pigs experiencing post-weaning diarrhea: A field study Gillian Greaves, Clint Lichty, Bertrand Medina and Ivan D. Girard
207	*	Comparing motility, biofilm formation, and Amoxicillin resistance of E. coli isolated from wild and conventional pigs Joshua Theriault, Rajibur Rahman, Tingting Ju, Janelle M. Fouhse, Julia Neyedly, Ryan K. Brook, and Benjamin P. Willing

Reproduction Management

- Circulating biomarkers differ in sows with variable risk for pelvic organ prolapse

 Zoë E. Kiefer, Jamie M. Studer and Jason W. Ross
- The use of uterine horn resection surgery to optimize nonembryo collection in gilts *M. E. Ewasiuk, R. R. E. Uwiera, A. I. D. Woon, L. J. Zak, and M. K. Dyck*

Behaviour & Welfare

- Feed restriction in finisher pigs alters their activity levels and leads to a decrease in the occurrence of tail biting Kayla Patey, Jennifer Patterson, Michael Dyck, Clover Bench, Graham Plastow, Elda Dervishi
- Measuring stress resilience in an out-of-feed event using cortisol and oxytocin in growers given early life management modifications

 S. Khalife, D. Pollock, M. Lopez-Arjona, J.J. Ceron, J.A. Brown, and Y.M. Seddon
- Animal-based indicators on carcasses: a tool to monitor pig welfare and management practices on-farm and pre-slaughter *M.E. Lagoda, Y. Wang, K.A.T. Moak and Y.M. Seddon*
- Does the early life environment and health effect hair cortisol, dehydroepiandrosterone (DHEA) and the cortisol:DHEA ratio?

 Darian Pollock, David Janz and Yolande Seddon

- Burlap & buddies: Enrichment options to benefit piglets around weaning

 A. Scott, A. Le Heiget, R. Stefanson, J. Ahloy-Dallaire, and M. King
- Rearing pigs with play opportunities: the effects on disease resilience in pigs experimentally inoculated with PRRSV K. Steinerova, H.L. Wilson, J.C.S. Harding, A.N. Finatto, S.E. Parker, and Y.M. Seddon
- The effects of periodic enrichment on the welfare and production of growing pigs

 Abigail Tillotson, Yolande M. Seddon, Karen Schwean-Lardner and Jennifer Brown
- One-step electrocution for on-farm euthanasia of large swine:
 The behavioural response of sows to electrode attachment
 Carmen C. Cole, Martine Denicourt, Christian Klopfenstein and
 Yolande M. Seddon