# Western Hog JOURNAL

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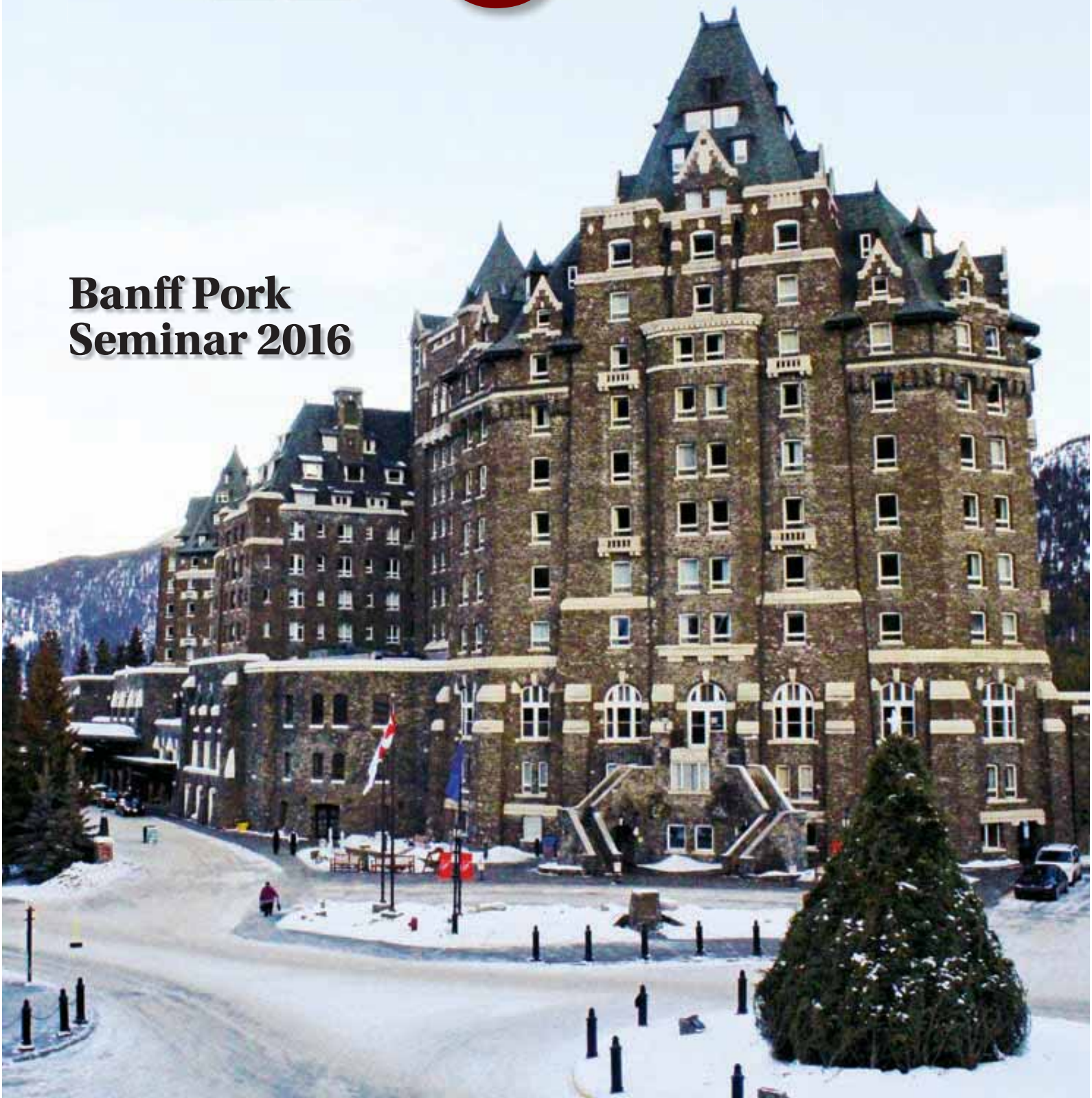
## Banff Pork Seminar 2016



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Western Hog Journal

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**Publisher**
Darcy Fitzgerald

**Business Manager & Editorial Director**
Sheri Monk
Phone: 403-627-9108
sherimonk@gmail.com

**Advertising**
James Shaw
1 Burnhamthorpe Park Blvd.
Islington, Ontario
Canada M9A 1H8
Phone: 416-231-1812
Fax: 416-233-4858
Email: jamesshaw@rogers.com

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The 2016 Banff Pork Seminar returned to the Fairmont Banff Springs Hotel.

*Photo by Sheri Monk*


# Animal Welfare and Public Perceptions

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Western Hog Journal

# News and Views

## from Far and Near

### 35th Million Pig in the Topigs Norsvin Pigbase

On January 1, pig number AG00027053 was born on the breeding farm of Mai and Geir Aannerud in Reinsvoll, Norway. Reinsvoll is located about 10 kilometers west of our office in Hamar. This pig is a male from the Norsvin Landrace line. It is also the 35th million pig in our breeding database Pigbase. Topigs has been using Pigbase since 2006 and has included the data from the Norsvin since the merger in 2014. Pigbase is the foundation of the Topigs Norsvin breeding and genetic program.

### Sexing Technologies acquires genomics laboratory Genetic Visions

Fast Genetics' parent company, Sexing Technologies, recently acquired genomics laboratory Genetic Visions from Accelerated Genetics.

Sexing Technologies' acquisition of Genetic Visions will directly benefit Fast Genetics and its customers, as genomic testing will increase dramatically. A major factor influencing genetic improvement is the accuracy of estimated breeding values (EBVs). Genomic selection improves the accuracy of EBVs and increases selection intensity, both of which translate to dramatic gains in genetic improvement for Fast Genetics.

"The use of genomic EBVs is a well proven method to accelerate genetic progress. Having our own genotyping lab within our internal group of companies gives us one more tool to be at the forefront of this technology and will make us industry leaders in this field," comments Shannon Meyers, Fast Genetics' Chief Operating Officer.

With significant increases in genomic testing and other novel research and development activities, coupled with the implementation

CONTINUED ON PAGE 6

# BIG PICTURE PROTECTION **WITH NO COMPROMISE**

Porcine circovirus associated diseases (PCVAD) and mycoplasmal pneumonia are two of the most economically devastating swine diseases. You shouldn't have to compromise the efficacy, safety, performance or convenience of a vaccine to get the best protection for pigs.

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**UP TO**
**75%**
**MORE**
*M. HYO* **PROTECTION**[1]

**DEMONSTRATED**
**98%**
**SURVIVAL RATE FROM PCVAD**[2]

**86%**
**FEWER**
**INJECTION SITE REACTIONS**[4]

**UP TO 4.4% MORE GROSS REVENUE = UP TO**
**$9,000**
**MORE GROSS REVENUE**[3]

**FOR MORE INFORMATION ON FOSTERA PCV MH, VISIT ZOETISUS.COM/FOSTERAPCVMH OR TALK WITH YOUR LOCAL ZOETIS REPRESENTATIVE.**

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**References**

1. Nitzel, G., Bubolz, J., Smutzer, M., Runnels, P., Taylor, L., Efficacy of Fostera PCV MH VS other combination vaccines following dual challenge with Mycoplasma Hyopneumonia and PCV2. Poster from 2015 Allen D. Leman Swine Conference.
2. Cowles, B., Nitzel, G., Smutzer, M., Neuberger, D., Amodie, D.M. Comparative evaluation of two dose PCV/M.hypneumoniae combination vaccination protocols in swine challenged with PCV and M.hyopneumoniae. Poster 72. 2015 AASV Annual Meeting: Beyond Our Oath: Integrity, Intensity, Professionalism.
3. Cowles, B., Greiner, L.L., Neuberger, D.,Nitzel, G., Rapp-Gabrielson, V., Smutzer, M., Amodie, D.M. Comparative evaluation of two dose PCV/M.hypneumoniae combination vaccination protocols in swine challenged with PCV and M.hyopneumoniae. Poster 48. 2014 AASV Annual Meeting: Our Oath in Practice.
4. Nitzel, G., Bubolz, J., Smutzer, M., Runnels, P., Taylor, L., Safety of Fostera PCV MH vs Other Combination Vaccines. Poster from 2015 Allen D. Leman Swine Conference.

of sex sorted sperm and low dose semen technology, Fast Genetics is poised for significant growth. Fast Genetics is excited about Sexing Technologies' ownership of Genetic Visions, as it will allow for greater gains in genetic improvement, benefiting all Fast Genetics customers.

## Canada gains market access for pork to India

Agriculture Minister Lawrence MacAulay and Minister of International Trade Chrystia Freeland announced January 15 that the Government of Canada has secured export market access for Canadian pork and pork products to India. The Canadian pork industry estimates that gaining access to this new market could be worth $2 million in the first year, with growth in future years, as demand for value-added products is expected to increase. Access to the Indian market aligns with the Government's plan to expand trade with large and fast-growing markets. Improved access in this sector will create opportunities for Canadian pork producers and will further facilitate Canada's position as a long-term, reliable trading partner. "Canadian pork producers can immediately benefit from this new opportunity, exporting their product into this emerging market and increasing their export returns. Our pork industry works hard to produce safe, high-quality meat products and our government will continue to work equally hard to deliver what they need to grow their businesses in markets around the world," said Lawrence MacAulay, Minister of Agriculture and Agri-Food.

"Canada Pork International is pleased that India's market for Canadian fresh pork and processed pork products is now open. We have been working with the Government of Canada for many years to gain access to this market which offers great potential for the export of a wide range of pork products. Canadian producers that manufacture value-added pork products will also benefit from this new market in the future," said Jacques Pomerleau, President of Canada Pork International.

## PIC extends welcome back to Monty Thomson

PIC is excited to welcome Monty Thomson back to the business as an Account Manager for PIC in western Canada.

Monty first started working in the swine industry in 1995, as a farrow to finish specialist. From 1998-2004, he joined PIC and held various roles within the organization from selection officer, to customer service rep, as well as rounding out his career in account management. From 2005 to 2015, Monty worked in swine feed sales in Manitoba and was hands-on in barn service.

Mr. Thomson is excited to be back at PIC and is looking forward to improving producers' bottom line through the use of PIC products, services and technology.

When Monty is not out working in the barns, he enjoys several hobbies including breeding Clydesdale Horses and Shorthorn Cattle.

## Capital Packers Launches New Products to Address Consumer Demand

Since Capital Packers opened in 1929, the Edmonton processor has worked hard to constantly adapt to the latest food trends. As a fourth-generation, family-run operation, they understand the importance of providing consumers with high-quality products sourced from local pork, beef and poultry. Over the years, Capital Packers has maintained a strong presence in Western Canadian grocery stores, but now they are seizing an opportunity to grow their business.

Soon, consumers across Canada will have access to Capital Packers' new premium brand, Rustic Ridge, for health-conscious consumers. The brand contains ten products, including grilling sausages (pictured below), sausage rings and bacon. The launch is projected to roll out over the next few months at major retailers in Canada.

"We've seen an increased demand for companies to provide simpler and healthier

CONTINUED ON PAGE 8

# BIG PICTURE PROTECTION **WITH NO COMPROMISE**

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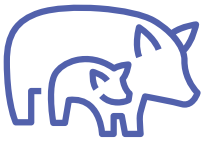
Fostera® PCV MH was developed with high standards and the health of your business in mind. Convenience is built into this one-bottle combination with flexible dosing of a one- or two-dose protocol.

IN A RECENT STUDY, PIGS VACCINATED WITH FOSTERA PCV MH HAD UP TO **75% FEWER** *MYCOPLASMA HYOPNEUMONIAE (M. HYO)* LUNG LESIONS THAN PIGS VACCINATED WITH INGELVAC CIRCOFLEX® and INGELVAC MYCOFLEX®.[1]

IN A REAL-WORLD DISEASE ENVIRONMENT, FOSTERA PCV MH **DEMONSTRATED A GREATER NUMERICAL REDUCTION IN MORTALITIES** FROM PORCINE CIRCOVIRUS TYPE 2 (PCV2) THAN CIRCUMVENT® PCV M G2.[2]

IN A RECENT STUDY, FOSTERA PCV MH DEMONSTRATED **SIGNIFICANTLY FEWER** AND LESS SEVERE INJECTION SITE REACTIONS THAN CIRCUMVENT® PCV M.[4]



IN ONE STUDY, FOSTERA PCV MH HELPED **GENERATE UP TO 4.4% MORE GROSS REVENUE THAN THE COMPETITION**.[3] ANOTHER STUDY FOUND SIMILAR RESULTS: FOSTERA PCV MH HELPED BRING NEARLY 5% MORE PIGS TO MARKET AND GENERATE ALMOST 3% MORE TOTAL POUNDS AND GROSS REVENUE.[2]

**FOR MORE INFORMATION ON FOSTERA PCV MH, VISIT ZOETISUS.COM/FOSTERAPCVMH OR TALK WITH YOUR LOCAL ZOETIS REPRESENTATIVE.**

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1. Nitzel, G., Bubolz, J., Smutzer, M., Runnels, P., Taylor, L.,. Efficacy of Fostera PCV MH VS other combination vaccines following dual challenge with Mycoplasma Hyopneumonia and PCV2. Poster from 2015 Allen D. Leman Swine Conference.
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food options to consumers. This has been especially true in the case of processed meats," said project manager, Stephen Komarnicki. "While we are proud of all of our products, we are especially excited for the launch of Rustic Ridge and look forward to seeing our products sold beyond Western Canada for the first time."

To bring Rustic Ridge to life, Capital Packers collaborated with Arie Vandermeer, a food scientist from the Food Processing Development Centre in Leduc, to create healthier recipes combined with innovative flavours. As a result, Rustic Ridge products are formulated to be allergen-free, made from antibiotic and hormone-free pork, and contain only natural flavours, with less sodium, all while maintaining the quality Capital Packers expects from their products.

"We wanted Rustic Ridge products to have an ingredient list that everyone can easily understand. Consumers should feel confident with their purchases by knowing exactly what they are eating and buying for their families," said Komarnicki.

Like Capital Packers' other products, the Rustic Ridge products are made from Alberta-sourced pork. Therefore, Capital Packers will require an increased supply of meat from local producers, which will help sustain the Alberta livestock industry. That is one of the many reasons the Alberta Livestock and Meat Agency (ALMA) saw a fit in partnering with Capital Packers for this initiative.

"Rustic Ridge checks a lot of boxes when it comes to what health-conscious consumers are looking for in processed meat products," said Gordon Cove, ALMA President and CEO. "By launching this brand, Capital Packers continues their commitment to satisfy consumers, while increasing their competitiveness and market share across Canada. More importantly, it increases the amount of locally-produced premium products on grocery shelves."

To learn more about Capital Packers, please visit their website: http://capitalpackers.ca/

## HyperEgg gets boost from PED concerns.

HyperEgg is the brand name and registered trademark of J. H. Hare & Associates Ltd of Winnipeg, Manitoba. The company has been serving the animal feed industry since 1970 and HyperEgg represents their Veterinary Biologic line of disease fighting Antibodies.

HyperEgg is the first and only registered product of its kind in the world with the claim to prevent diarrhea caused by Enterotoxigenic E. Coli (ETEC) in baby pigs. It is also backed by the U. S. Patent 'Specific avian egg Antibodies for Disease Prevention and Improvement of Growth Performance.'

John Hare, the company's president says it's the 'Improvement of Growth Performance' part that has allowed producers to get back performance levels they had before diet changes made due to the onset of the PED virus.

*CONTINUED ON PAGE 10*

# BECAUSE YOU HAVE TO BRING HOME THE BACON.

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"We've had several customers comment that after trying various alternative ingredients, HyperEgg is the only one that gives comparable growth gains. When PED hit in Canada our phone started ringing. We even had one customer ask if he could buy shares in the company. Unfortunately we got caught off guard with a limited supply of product and with the nature of our production process you can't just turn on the tap for more. We have since rectified the supply problem," said Hare.

HyperEgg is available in 20 kg boxes with an inclusion rate of 3 kg per ton of complete starter feed and fed for 14 days post weaning. It's also available included with high quality spray dried egg powder as an alternative protein source in their HyperEgg

X Change product, included at 50 kg per ton. See www.HyperEgg.com for more information.

## Genesus appoints new GM for China

Alexander Kovachevich has joined Genesus Genetics as the general manager for the China area. Alex has been working in China since 1997, in the agriculture business since 2004 and is fluent in Chinese, which he uses as a working language. He has been a general manager for several large foreign companies in China including Big Dutchman and will now use his experience and knowledge to lead Genesus to further growth in China. Genesus is the leading global exporter of swine genetics to China.

Alex is looking forward to working for Genesus in these exciting times for the swine industry. Alex believes that Genesus' continued focus on working towards genetics with high reproductive capacity, rapid growth rate with feed efficiency, robustness and carcasses that are lean, but with excellent eating qualities will be attributes that lead Genesus forward in China.

## Utrinsic announces the addition of Dan Simon as president and CEO

Nutrinsic Corporation., a Glendale, CO-based sustainable nutrition company, today announced the appointment of Dan Simon as president, CEO, and member of the board of directors.

Prior to joining Nutrinsic, Dan was president and CEO at Heliae Technology Holdings, an algae biotech company which produced a range of nutraceutical, agro-science, nutrition, and personal care products. Previously, Dan co-founded Denver-based Biofuel Energy Corporation, a public ethanol company where Dan oversaw the growth of the company from inception to over $600 million in annual revenue. Dan was also the founder of Elevant Advisors, and an executive at TIC (a Kiewit company), NCH Corporation, and Ecolab, Inc. At Nutrinsic, Dan will direct all facets of the company including strategy, product development, operations, financing, and build-out of a global footprint.

"On behalf of the board of directors, we welcome Dan, who brings an impressive history of growing and positioning multiple industrial biotechnology and energy companies for success on a global scale," said Tim Wilson, Nutrinsic board member and Partner at Artiman Ventures. "Dan is an innovative strategist who understands the process, issues and economics associated with developing

and deploying large scale production businesses. His experience will be invaluable as Nutrinsic accelerates its ability to provide natural nutrition products using our patented single cell bacteria production process."

Leo Gingras, who has served as CEO of Nutrinsic since 2012, will remain a consultant and on the board of advisors. "I am thrilled to pass the torch to Dan," said Gingras. "He was the unanimous choice of the Nutrinsic board. I enthusiastically welcome him and am confident in his abilities to take the company to the next level."

Dan responded saying he "loves to build businesses and is passionate about creating sustainable solutions for the world's growing demand for food and energy. Nutrinsic is on the cusp of changing our future by delivering a whole new supply chain of feed, food, and agro-science related products on a global scale."

## New innovations for livestock feed

Feed innovations are set to tackle the sustainability file in 2016, as a changed regulatory landscape and broad swath of fresh advancements take hold for pigs, poultry and ruminants. The innovations cover efficiency, profitability, environmental footprint, animal health and welfare, and more.

The wave of modernization is propelled by new science, says Rob Patterson, technical director for Canadian Bio-Systems Inc. (CBS Inc.), which researches, develops and manufactures a range of new bio-based livestock feed supplements. Another driving force is shifting demand toward alternative supplements, as industry adapts to new rules for more limited and judicious use of traditional options such as antimicrobials.

"The story of feed innovation for animal agriculture is entering a distinct new chapter in 2016," says Patterson.

One of the most promising areas of advancement for the new year is 'multi-carbohydrase' feed enzyme technology, says Dr. Bogdan Slominski, a leading feed technology researcher at the University of Manitoba and a pioneer in developing enzyme technology for animal agriculture. CBS Inc. has a long-standing partnership with Slominski's program.

The multi-carbohydrase approach involves combining multiple unique enzyme strains that between them express multiple unique activities and therefore can breakdown a much larger portion of otherwise indigestible feed components. "It's a game changer," says Slominski. "This innovation, in my opinion, has the greatest potential among the feed supplement innovations we see today, to greatly improve the economics and sustainability of livestock production."

Nucleotides are another standout example taking a leap forward for 2016. Though relatively new to the livestock feeding sector, nucleotides are widely recognized for their importance in human infant nutrition. "Now a growing body of research shows nucleotide formulations designed for livestock feed can deliver strong feed efficiency, growth promotion and health benefits, particularly for young animals," says Patterson.

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With the threat of mycotoxins rising in the industry consciousness, advancements that help safeguard feed quality and protect animal performance have also risen to the forefront. "We see growing demand for new options that offer an insurance policy and bring peace of mind," says Patterson.

Also grabbing more of the spotlight in 2016 are specially designed yeast-based supplements that defend against stress loss and support animal welfare, offering unique value during critical times such as weaning or transport.

"These are just a few leading examples among many," says Patterson. "It's an exciting time of new options and choice in the feed business."

## Nor-Feed launches the 2016 Veterinary Award on the functional properties of plants in animal health

Nor-Feed, the French company specializing in plant-based natural additives for animal nutrition, recently launched the second edition of its veterinary award.

The Nor-Feed Award rewards a recent veterinarian thesis (or a thesis of veterinary interest) on the functional properties of plants or plant extracts and their application in animal health and/or animal production.

Launched in 2015, the first edition resulted in significant success in the scientific and veterinary community by attracting 26 high value applications coming from four continents. The award was won by Mr. Karthivashan Govindarajan, PhD candidate, thanks to his work on the nutritional role of Moringa oleifera extracts on broilers.

To participate, candidates must submit their dossier by June 30th, 2016 at the latest. The Nor-Feed prize will be awarded in September 2016. Application and information on our website www.nor-feedsud.fr.

## Unique import in Chile – 38 Topigs Norsvin boars from Norway

Topigs Norsvin distributor Alimundo recently received 38 breeding boars from Norway. This is a unique importation because it is the first time that genetics from Norway are entering the Chilean market. The boars, 30 Norsvin Landrace and 8 Norsvin Duroc, are the third import of Topigs Norsvin genetics to Chile in the second half of 2015. Earlier imports were Z-line breeding gilts, Talent and Tempo boars from Canada.

The combination of Norsvin Landrace and Z-line results in highly productive and efficient sows that when inseminated with the Norsvin Duroc produce finishers with high gain, low feed conversion and high, top-quality carcass yield. This unique combination is new for the Chilean market. ''Chilean producers can directly benefit from top genetics from our nucleus farms in Canada and Norway," says Peter van Kemenade, director of North and South America.

## New FeedCheck Express kits available

Progressive solutions for on-site testing of feed enzymes are emerging to put the power of quality assurance into the hands of livestock producers.

The latest is a newly upgraded version of the popular FeedCheck Express test kit from Canadian Bio-Systems Inc. (CBS Inc.), now paired with an online instructional video quickly accessible via smartphone, tablet or computer.

"Farming today is increasingly about quality assuance and rapid response capability at all levels – and the front line is right on the farm," says Krisjan Jones, CBS Inc. operations director. "As enzymes and other feed supplements become increasingly widely adopted, and critical to efficiency and profitability, producers need this capability for on site testing to make sure they have the right levels of activity to produce the desired result. FeedCheck Express puts that power for quick, precise, convenient testing into farmers' hands."

The new instructional video offers simple-to-understand, visually-aided guidance in a convenient, mobile-accessible format, says Rob Patterson, CBS Inc. technical director. "The package is designed so that anyone involved in the operation can easily and accurately apply the test at any point in the production cycle."

A new supply of the latest FeedCheck Express kits for 2016 is now available to producers in both the U.S. and Canada by contacting CBS Inc. The new kit comes with print instructions and is also paired

with the new instructional video available at https://vimeo.com/151925281. FeedCheck Express confirms the presence and activity of enzymes in both complete feeds and pelleted feeds. Feed samples do not require grinding or other processing, and mash or pellets can be included in the reaction vials.

For further details and to order a FeedCheck Express kit, customers can contact their local CBS Inc. representative or distributor. CBS Inc. is an innovation-focused company that researches, develops and manufactures a wide range of bio-based products used in feed, food and industrial applications. More information on CBS Inc. and its comprehensive line of feed technology products is available at www.canadianbio.com.

## Osborne Industries, Inc., to present at U.S. Commercial Service Roundtable

Osborne Industries, Inc., presented at the U.S. Commercial Service Roundtable in Moscow, Russia, on February 4, 2016. The Increasing Efficiency in Agriculture roundtable highlighted best practices and technologies for agricultural businesses to improve productivity and reduce operation costs. The event was put on by the U.S. Commercial Service of the U.S. Embassy in Moscow.

Industry experts across many sectors of the agricultural industry will be on hand to present case studies of the leading U.S. technologies and approaches available in Russia. Osborne's presentation focused on six areas of livestock production efficiencies, including genetics, nutrition, environment, feeding equipment, marketing equipment and management systems. Osborne Industries' president and CEO, George Eakin, represented Osborne at the event.

## Triple-headed portable LED flood light on telescoping tripod released by Larson Electronics

Larson Electronics has announced the release of a 120 watt telescoping LED work light that produces illumination comparable to a 400 watt metal halide without the high heat, fragile construction, or high energy use.

The WALTP-3XWP400 LED work light on telescoping tripod from Larson Electronics is designed to provide a portable yet powerful lighting solution that can be quickly transported and deployed. This portable tower features a collapsible tripod that extends from three feet to ten feet in height and three LED light heads mounted to a single, removable bracket. This adjustable work light produces 2,924 lumens of bright white light and distributes it in a wide flood pattern capable of illuminating 15,000 square feet of work space. Each light head contains twelve, 3.3 watt LEDs housed within a waterproof aluminum housing that is powder

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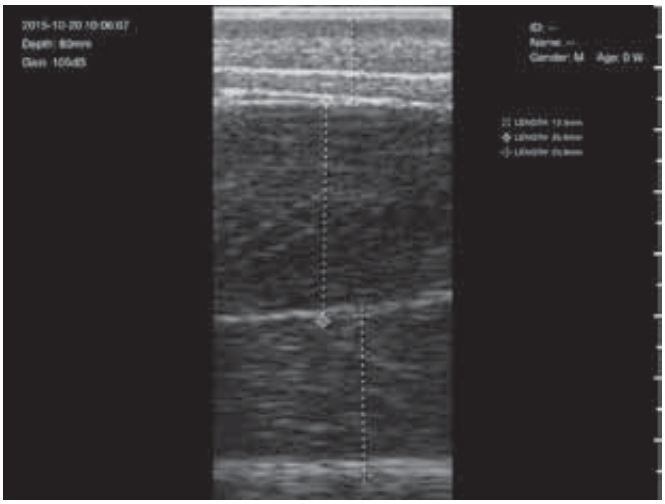
coated for added durability and resistance to corrosion. The lamps have a 50,000+ hour operational life, providing more than twice the longevity of HID lamps, and are designed to provide high output while running cooler, resulting in less heat in the work area and less chance of accidental burns.

This LED light tower is designed to withstand demanding conditions and is waterproof, vapor proof, and built to resist the damaging effects of an outdoor environment. The heavy duty aluminum tripod is durable, lightweight and adjustable to any length between 3.5 feet and 10 feet. The tripod legs collapse and the light head bracket is removable for simple portability and deployment. Power is provided by a 25' SOOW cord terminated with an optional cord cap to accommodate many plug outlets across the globe. This LED work light can be easily stored and carried in a work truck for rapid deployment as a scene light for first responders to downed lines, main breaks, or accident scenes and other applications where general area lighting is not available.

"The WALTP-3XWP400 is a lightweight and simple lighting solution for operators who need an instant-on and reliable source of illumination," said Rob Bresnahan with Larsonelectronics.com. "Featuring LED technology, these flood lights do not require any warm up time and can be cycled on and off without any reduction in lamp life."



## Wireless ultrasound for backfat and muscle

SEC REPRO inc., is the Canadian distributor for wireless ultrasounds running on an iPAD. It has a clear image with the 5 MHZ wireless, waterproof probe of 300G, ajustable gain, variable depth 40 – 120 mm, and auto or manual adjustment measurement. The battery lasts four hours. For more information, visit www.secrepro.com or email louis@secrepro.com. ■

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[2] Data on file – Merial Canada Inc.



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# Message from the Chair

By Bob Kemp

Honouring the Past, Embracing the Future was the theme for the 45th Banff Pork Seminar held at the Fairmont Banff Springs Conference Centre January 12-14, 2016. There were 680 producers and industry partners from across Canada, the U.S. and other parts of the world in attendance. Again this year the support we received through sponsorship, trade show booths and participation was second to none. Networking and attendee interaction are high on the list of important aspects of the Banff Pork Seminar and a combination of the attendees, new venue and excellent program further supported this aspect.

Over the past 45 years, the Banff Pork Seminar has continued to evolve and grow. The seminar has expanded from just the seminar to a week of industry group meetings, training sessions, company functions, and other events planned around and in conjunction with the Banff Pork Seminar. In my opinion, we now have the Banff Pork Seminar Week with the seminar as the centrepiece. Clearly, the Banff Pork Seminar Week has become a destination for the pork industry.

Embracing the future requires that we understand the past and the changes our industry has gone through. As we look to the future, it seems that the pace of change is ever increasing. Many people view change as a double-edged sword, excited for the opportunities but with a little trepidation of the unknown. Our industry needs to continue to embrace change with all industry participants working together to enhance our industry.

The presentations at this year's seminar were very informative and our plenary session speakers addressed a number of key topics for our industry. Dr. Temple Grandin, noted farm animal care researcher, commented that consumers are still woefully behind in their knowledge of real progress in livestock handling in the industry. She challenged the delegates to motivate their industry to do a much better job of reaching out. Mr. Michael McCain, President and CEO of Maple Leaf Foods, had an important message for the industry, "I am very confident about our future as a sustainable, profitable industry, but this will require embracing the social and environmental factors I am discussing here today."

The Banff Pork Seminar also recognizes outstanding contributions to our industry. The FX Aherne Award for Innovative Pork Production was shared by Sam Gelowitz from the Prairie Swine Centre and Steve Brandt from Steve's Livestock Transport. The RO Ball Young Scientist award winners were Amanda Perri from the University of Guelph and Jingjing Cabahug from the University of Saskatchewan. Dr. Mike Tokach from Kansas State University was awarded the George Foxcroft Lectureship in Swine Production recognizing his many contributions to research and extension in the pork industry and was a featured speaker at this year's seminar. Congratulations to this year's winners!

The Banff Pork Seminar is built on the contributions of many people including the members of the Banff Pork Seminar Advisory Committee. I want to thank those members and Conference Coordinator, Ashley Steeple, for their hard work and dedication to making Banff Pork Seminar 2016 a success.

In closing, we thank the Fairmont Banff Springs for the excellent facilities and service. Also, we would like to thank the Western Hog Journal and agriculture media for their coverage of this year's Banff Pork Seminar. Their reporting is key to the future success of the Banff Pork Seminar (www.banffpork.ca).

We hope to see you next year, from January 10 to 12, 2017. ■

Bob Kemp
Chair, BPS Advisory Committee

## PLENARY SESSION 1

Compiled by Meristem

# Part one: Maple Leaf's McCain sees clear path for future of Canadian hog industry

Michael McCain, president and CEO of Maple Leaf Foods, kicked off the 2016 Banff Pork Seminar with a strong message for the industry. "I am very confident about our future as a sustainable, profitable industry, but this will require embracing the social and environmental factors I am discussing here today."

Those three areas of focus and opportunity going forward are health and nutrition, animal welfare and environmental sustainability.

### Health and nutrition

When the World Health Organization's (WHO) International Agency for Research on Cancer released its report last year stating red meat and processed meats were closely linked to colorectal cancer, the media took over and the story exploded. "We need to do a better job of getting balanced information out so people can make informed choices," says McCain.

He drew a comparison to what happened with gluten in wheat and the huge decline in bread consumption in recent years. One thing to be learned from the escalation of gluten from a nutritious protein to a culprit, is how quickly a minor or negligible risk can turn overnight into a food movement. "The vilification of gluten could easily happen to red meat," he says.

CONTINUED ON PAGE 18

*Michael McCain. Photo by Meristem*

*Michael McCain is photographed by media while addressing the large audience during the first plenary session. Photo by Sheri Monk*

McCain stated repeatedly during his presentation, the importance of communicating about the industry, its practices, commitments and opportunities. Through their Canadian and U.S. industry associations, Maple Leaf is building a fund that will support a more robust effort to counter misinformation and reinforce the benefits of meat.

"We know people want more transparency regarding how food is raised and processed," says McCain. He cited a recent study that found 60 per cent of the respondents said that antibiotics and hormones used in pork and livestock production are a health concern, and that 34 per cent of the people believed pork and poultry are less safe today then when they were children.

Changes are being made in the industry. Producers continue to adopt animal husbandry practices that reduce their reliance on antibiotics. Food processors are reducing their use of sodium, sweeteners and artificial flavours and are migrating toward simpler and more natural ingredients.

## Animal welfare

Over 10 years ago the Canadian Pork Council launched its animal care assessment, the ACA certification program based on the work of the National Farm Animal Care Council. While it is a voluntary program, Maple Leaf Foods now only contracts with producers who adhere to the ACA standards.

But standards such as these are not always enough. "We are only as good as our weakest link," says McCain. "The rise of undercover videos...shows a gap in the duty of care to treat animals ethically and humanely."

Most retail and food service organizations identify animal welfare as their number one concern in meeting societal expectations and within this, conversion from gestation crates to loose housing is their top priority - one in which McCain feels Canadian producers are lagging behind.

Maple Leaf has taken major strides in improving animal welfare practices within their organization including: conversion of the sows under their management to loose housing; audits of all of their pork operations annually; alternatives to pain management and surgical procedures as well as improved animal husbandry to reduce or eliminate the need for antibiotic treatment; and remote or video auditing in processing facilities and in the future hog operations.

"Blaming activists or reverting to a defensive posture will not solve this challenge. This is not a fleeting issue and defending the status quo is not a viable option," says McCain. "As an industry we need to rally together to advance higher standards and higher expectations of each other."

In a final statement on the importance of animal welfare to the Canadian pork industry, McCain referenced Smithfield, the world's largest pork producer. They have committed to group housing on company farms by 2017 and by 2022 for all of its contract producers. As a sector that relies on the export market, Canada will need to raise its bar to compete internationally.

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## Environmental sustainability

"One of the greatest challenges of the agriculture industry us to meet the increasing global demand for food while dramatically decreasing its environmental footprint of food production," says McCain.

It has often been said that no single activity has as great an impact on the planet than the raising of livestock. Feeding the world accounts for approximately 25 to 30 per cent of total greenhouse gas emissions of which meat and dairy production counts for up to as much as 18 per cent.

Canada recently signed the global agreement to set a goal limiting global warming to less than 2°C compared to pre-industrial levels. "Achieving this goal will have profound implications for us and our collective future and it is incumbent on our industry to do as much as we can to reduce our environmental footprint," says McCain.

Maple Leaf has committed as a company to reduce their environmental footprint by 50 per cent by 2025 – and McCain noted that many of the efficiencies they are making have also had a positive impact on the bottom line of the organization.

## State of the industry

The Canadian pork sector is a multibillion-dollar industry that exports to over 100 countries, contributes 10 per cent of all farm cash receipts and provides a living for tens of thousands of people. McCain sees both challenges and opportunities ahead for the Canadian pork industry.

The cost of producing pork in Canada is higher than in the United States due to labour, construction and utility costs, and greater regulatory and transportation costs. Additionally, the infrastructure is aging - more barns were built in Minnesota and Iowa in one year, than in Western Canada in the last many years.

But there is good news too. The increasingly lower dollar gives Canadian exports an advantage over the United States. The disuse of ractopamine has opened new markets. Canada's natural environment and improved animal husbandry is reducing the need for antibiotics. And the Canadian brand is becoming a sought after proof point on menus domestically.

Finally, when discussing small farms versus scale agriculture, McCain has this to say, "I see misinformation every day. The enemy of sustainability is big food, big farming, scale agriculture and the path to the Promised Land is local food. When in reality we know that factually it is the reverse. The facts that support that well operated, well regulated, technologically advanced, scale agriculture and livestock, particularly in pork and poultry, is our friend not our enemy."

# Part two: Martin Rice on what you need to know about pork export markets and trade agreements

Canada and pork exports. No other pork-producing nation in the world has the kind of dependence on exports that Canada does. As a result, says Martin Rice of the Canadian Pork Council, Canadian pork producers are in a class by themselves when it comes to something going wrong in exports.

*Martin Rice*

In the last 20 years the market for Canadian pork has seen significant changes, Rice told his audience at the 2016 Banff Pork Seminar. Over two thirds of Canadian pork production is exported, excluding live pigs, and almost half of all production is going to non-U.S. markets. As well, pork consumption in Canada has declined during this period. This is an enormous exposure to risk on the export side of things.

Canada is currently the third largest exporter of chilled pork in the world. Mexico recently passed Canada in exports of frozen pork to Japan.

"The reason trade matters for the pork industry becomes clear when you take a look at all of the cuts and products that come from one carcass," says Rice.

There are products such as offal or variety meats that may go for pet food in Canada, because there isn't a demand for them here. But in China or Japan, these are highly sought after and are priced accordingly.

"There is an enormous contribution to the cutout value of the carcass, to be able to sell these variety meats to markets that value them," says Rice. This is why trade agreements are so important for the Canadian pork industry.

## Current trade agreements

There are a number of trade agreements Canada has currently signed or is pursuing. The most important of these are the WTO, the Canada-EU agreement and the Trans Pacific Partnership.

COOL – The World Trade Organization is still a key agreement for exporters and is really the only means to address domestic subsidies and export issues. It was clear that Congress would not act until it was evident that Canada could and would take retaliatory measures. On December 20 mandatory COOL was repealed for pigs, beef cattle, and pork and beef.

*CONTINUED ON PAGE 22*

*Martin Rice during his captivating presentation. Photo by Sheri Monk*

## Canada -EU.

The EU includes over 500 million people with a per capita consumption of pork of 40kg (Canadian consumption is 22 kg). It includes a zero in-quota duty and provides immediate access for processed, prepared pork products. While this isn't going to be a large market for Canada in the short term, this is an opportunity for a million plus pigs that Canada doesn't currently have under the existing system.

## Trans Pacific Partnership (TPP)

"The paramount concern for the Canadian industry was that Canada be involved if Japan came into the negotiations. When they asked to join we saw that as a game changer for our own trade agreement and immediately saw it was essential to be in as well," says Rice. Japan is a billion dollar market and important to Canada's export business. It has levelled the playing field and includes some advantageous access to Japan compared to non-TPP exporters particularly the EU and Rice says "we are quite confident that within five years of implementation, we will see additional exports to Japan in excess of $300 million per year."

Since 2010, Canada has almost doubled its exports of chilled pork to Japan, while competitors such as the United States and to a lesser extent, Mexico, have had marginal increases. "But this will not take care of us forever," says Rice as he shared the population outlook for Japan. "I am not sure I have seen such a dramatic population decline in a country outside of a war or famine." Estimates from the Japanese ministry show the population declining from the approximately 127 million people today, to around 80 million people in the next 40 years. This will impact demand for export products significantly.

As a founding member of TPP, Canada has the ability to negotiate terms with countries who want to join. For example advocating for removing remaining tariffs from South Korea on Canadian pork.

## The rest of the world

Other free trade agreements currently in force, signed and/or concluded with countries including Canada-U.S., NAFTA, Israel, Chile, Costa Rica, Peru, Colombia (this is a big market), Jordan, Panama, Honduras, Korea, Ukraine (more political than market driven).

"Most of these agreements are very important for pork," says Rice. Lastly, the Canadian Pork Council is looking at ways to measure the value of special concessions that allow access to foreign markets such as the discontinuation of ractopamine or the use of the PQA program. They also want producers' input on what value they see in some of these practices and programs. Is it worth it to producers to focus on the export markets? Time will tell. ■

## BREAKOUT SESSION 1: Biosecurity

By Geoff Geddes

# Part one: Canada's Response to PED and What is Next for Emerging Disease Strategy

**Whether it's managing swine disease or fleeing a bad blind date, the right strategy is critical to success. In both cases, the longer you wait, the greater the risk. Dr. Doug MacDougald is a veterinarian at South West Ontario Veterinary Services, a Swine Herd Health Management practice based in Ontario. Drawing on his experience, he looked at how we've handled the PED threat and what it taught us about dealing with future disease challenges.**

### Blasting the past

In part, learning is its own reward. But the chance to save a bundle in the process doesn't hurt. Citing the wisdom of Theodore Roosevelt, who said "The more you know about the past, the better prepared you are for the future", MacDougald stressed the need to learn from our disease experience and threw out some staggering stats on the real cost of swine afflictions:

*Doug MacDougald*

$15 billion: the cost of Porcine Reproductive Respiratory Syndrome (PRRS) to our industry thus far.

$57 billion: estimated cost of a trade-limiting disease to North America over ten years.

As MacDougald and others point out, the risk of transboundary and emerging diseases has never been greater, and our track record of learning from the past is less than stellar. We don't know how or why any notable emerging pathogens of the last 40 years were introduced and, not coincidentally, we've been unable to eradicate a single one. Thankfully, the use of Specific Pathogen Free (SPF) swine will eliminate some common diseases and reduce the need for antibiotics. But MacDougald asks a critical question: "Why aren't we better prepared for emerging disease?"

### Right hand, meet left hand

In large part, MacDougald feels it's a lack of knowing who does what, when and how they do it, and with whom. For

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example, since PED was not under the responsibility of the Canadian Food Inspection Agency (CFIA), each province had a different response to this transboundary disease, ranging from reportable to notifiable to nothing.

He also laments the lack of a "single voice" organization created by provincial and federal governments, provincial pork boards and the Canadian Pork Council (CPC), for which he blames complacency and lack of cooperation among the provinces.

Add to this that the uncontrolled use of key antibiotics for human medicine in agriculture is ending, and we clearly need a different model for sustainable swine health.

## Charging the "current"

At present, the majority of PED cases in Canada have been eliminated. So how did they do it?

**Quebec**

They developed a Foreign Animal Disease preparedness plan, collaborating with government and industry stakeholders on prevention, planning and intervention against targeted swine diseases. The goal was to minimize the potential impact on the Quebec swine sector. In June of 2013, they developed a two-part strategy to prevent the introduction of PED on Quebec farms and eliminate it where prevention failed. A key part of making the plan successful was surveillance of packing plants, trailers, assembly yards and feed ingredients.

**Western Canada**

Co-operation among provincial pork boards and Chief Veterinary Officers was highly effective, an effort enhanced by the recent formation of the Western Canadian Swine Health Alliance and the Canada West Swine Health Intelligence Network.

**Ontario**

In MacDougald's view, Ontario's success battling PED was not so much because of its approach but in spite of it. He felt they lacked a clear operational or communication plan. To rectify that going forward, OSHAB outlined four key requirements for disease elimination:

1. Regulatory oversight
2. A plan for virus-positive assembly yard elimination
3. Sanitation solutions for livestock trucks returning from the U.S.
4. A surveillance plan for early detection and intervention in new cases

As well, Ontario is rolling out its Ontario Animal Health Network (OAHN) surveillance plan to improve swine health through communication, surveillance and information sharing.

## Embracing the future

MacDougald pointed out that Canada has survived and thrived through mutual accommodation, and the same applies to the pork industry. To effectively control the spread of disease and associated losses, we need a collective approach coordinated by a central entity, much like the route taken in Quebec.

Ontario's answer appears to be Swine Health Ontario (SHO), an independent health leadership team comprised of four founding members and broad industry support. Its mandate is to oversee a broad, proactive, industry-wide, long-term strategy for swine health.

For Western Canada, MacDougald recommends a similar model to ensure that the current coordinated approach endures in the face of leadership changes at the provincial pork boards or CVO.

In the U.S., the Swine Health Information Center (SHIC) is their version of this model, designed to implement industry preparedness, improve swine health management and enhance non-regulatory disease response.

MacDougald envisions something comparable to the Quebec and U.S. solutions that would deliver the following:

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5. A sustainable, health-focused pork industry with a clear and practical antimicrobial plan.

Dealing with emerging diseases is a daunting challenge, so MacDougald looks to Winston Churchill for inspiration:

"It is no use saying 'we are doing our best'. You have got to succeed in doing what is necessary."

On second thought, maybe Churchill isn't the best example. Sure, he stared down the opposition in World War I and II, but he never faced the most fearsome enemy of all: The bad blind date.

# Part two: Biosecurity and Disease Risk Management in Transportation

**As a kid, there's nothing more exciting than a road trip. Then again, unless you're travelling on a tight budget, you're not surrounded by a hundred squealing pigs. For the pork industry in Canada, a road trip is fraught with challenges, most notably the need for disease risk management. As Vice-President of Operations for Steve's Livestock Transport, the largest commercial livestock carrier in North America, Rick Peters knows that challenge better than anyone. He talked about how his company manages disease risk in transporting pigs and the lessons that producers can draw from his experience.**

When you transport pigs for 29 years and now average 150,000 pigs per week, you learn a few things about biosecurity. Under the direction of CEO and President Steve Brandt, Steve's Livestock Transport applied those lessons while building their first truck washing facilities in 1995. Since then, they have added 3 more locations and improved biosecurity measures, including undercarriage washing and Canada's first industrial-strength baking bays for livestock trailers. As Brandt explains, though, a "clean" trip involves a host of factors.

*Rick Peters*

## Drivers

Biosecurity for their drivers starts with some basics. They can't live on premises where pigs are kept nor work at any hog facility, and must not have pets in their trucks.

When first hired, drivers must take a 3-day orientation program and pass the Trucker Quality Assurance test before being paired with an experienced driver trainer. Over the next 244 hours (now THAT'S a road trip), the new driver learns driving techniques, livestock handling during loading and unloading, and biosecurity protocols for all loads. These protocols include correct entry and exit for the truck cab and trailer, proper clean-up of truck cabs, clothing and tools, and where, when and how to change footwear and coveralls for loading and unloading.

## Trailers

Their trailers are made and ordered to maximize biosecurity and ease of washing. For example, hundreds of extra welds and capping keep manure from crevices and open tubes, preventing contamination.

## Yard biosecurity

All livestock, bedding and manure must be removed from a truck before it can enter any Steve's Livestock location, including wash bays. Clean and dirty trailers are kept apart via separate parking and loading areas, and all drivers must ensure trucks are clean before leaving the yard.

## On-farm biosecurity

Drivers make boarding changes to the truck's exterior before dressing to work inside. They must never go beyond the trailer when loading or enter the barn to do their paperwork. Pigs that fall to the ground are never placed back in the trailer and chase boards are used inside the trailer to prevent pigs from returning to the barn.

## Biosecurity during transport

Proper biosecurity doesn't end at the farm gate. Drivers must be aware of other livestock trailers on the road and may need to follow predetermined routes if stipulated by the customer or logistics coordinator. And in the spirit of "trust but verify", GPS software shows which routes trucks have taken at any given time.

## Wash bays

When you're washing hundreds of trailers each week, quality and consistency are vital to good biosecurity. That's why Steve's designates three key leaders to ensure proper training of new personnel and consistency of the washes. All new washers complete an orientation session and cannot live on premises where pigs are kept. Their suits and boots are thoroughly cleaned and disinfected after each wash, as are the floors in the staff room and common areas.

Design of the wash bays is also crucial, featuring a one way drive-through and sloped floors for quick drainage of water. All bays feature air make up units to continuously flow fresh air through the bay and quickly dissipate fog in a wash bay during the winter.

CONTINUED ON PAGE 28

## Complete Trailer Wash SOP

Steve's Transport uses only fresh water, avoiding the hazards of recycled water experienced by some facilities in the U.S. After the wash bay floor is rinsed and disinfected, the trailer is brought in and all winter covers, decking and tools are removed. The process itself is like bubbles on steroids:

1. A fire hose washes the decking and interior at 90 PSI and 45 gallons per minute.
2. Foaming detergent scrubs inside and out and a high pressure hose rinses all surfaces.
3. The fire hose rinses down the wash bay floor, decking and trailer interior.

Following a visual inspection, disinfectant is foamed over all equipment and the decking is replaced and given a final disinfection. All areas of the trailer and tools are then inspected and re-washed if necessary.

## Under-carriage wash

Like those hard-to-get-to spots in the shower, the underside of a trailer is tough to properly wash. To that end, Steve's Blumenort wash bay boasts the first undercarriage wash system for livestock trailers. With 16 jets embedded in the floor and 4 on each side, there's enough high-pressure water being sprayed to clean a tank (but don't try this at home).

## Separation system

Separation systems handle the wastewater that results from the washing process. Water and solids are pushed toward a set of screens by the sloped floors where solids are held back and water gets pumped to municipal wastewater collection ponds.

## Drying bays

After washing, trailers are backed into mechanical dry bays against a bank of aeration fans, where the air is heated to about 35 degrees Celsius. Fans then blow this hot air into the trailer.

## Baking bays

It may sound like something your grandma used to whip up dessert, but the "pies" involved here are far less appetizing. The baking bay kills viruses and bacteria, the final step in extensive sanitation protocol for transport. If requested, a customer's trailer can be parked in the bay at an ambient temperature of 71-77 degrees for at least 10 minutes. After cool down, it's removed and parked in the clean area of the yard.

## Other factors

It's easy to forget some less obvious precautions, but they are no less important:

1. Ensuring that bedding suppliers follow strict recommendations for biosecurity.
2. Having all drivers use plastic tubs to store their clean boots and coveralls when going to pick up a load, and making sure the tubs, boots and coveralls have been washed and disinfected.
3. Training drivers on avoiding ground contact while entering and exiting trailers.

## What it all means to you

Apart from giving you peace of mind if you deal with Steve's Livestock for your truck washing, many of the principles they embrace carry over to other aspects of biosecurity. Whether cleaning a trailer, entering a barn or dealing with third parties such as feed reps on-farm, it's important to be thorough, aware and committed to the highest standards of care, and to ensure that those you deal with do the same. Otherwise, you may end up like that kid at the end of a long road trip: Tired, hungry and bawling your eyes out. ■

# BREAKOUT SESSION 2: Feed Cost and Net Income

By Geoff Geddes

## Part one: Optimizing Feed and Farm Management to Market Conditions

**Describing the pork market in North America as "volatile" is like calling World War 2 a "minor skirmish". In his role as a University Distinguished Professor, extension specialist, and swine nutritionist in the Department of Animal Sciences and Industry at Kansas State University, Dr. Mike Tokach can attest to that. Given the recent ups and downs of the industry fueled by high feed prices and PED, the timing was right to examine how changes in market conditions impact feed and management decisions.**

### Big picture decisions: efficiency vs. throughput

In large part, this choice depends on the state of the market. In bad times, the focus should be on efficiency in three main areas:

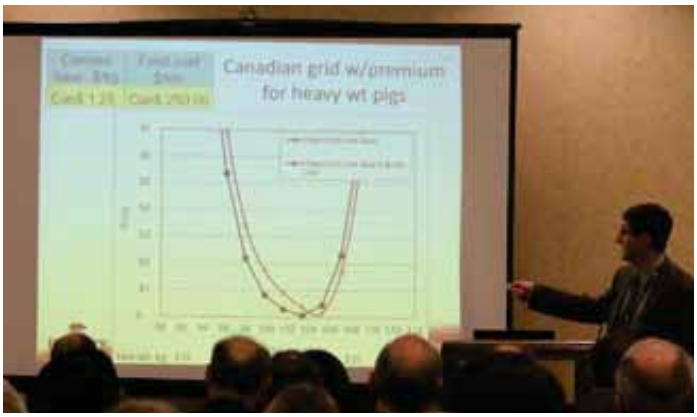
1. Managing cash flow through controlling costs, reducing capital spending, renegotiating rental or expense agreements or reducing cash dividend removal.
2. Extending or renegotiating loan terms.
3. Liquidating a portion of inventory to pay down debt.

On the other hand, when the economics are positive, throughput is more important than efficiency. The priority is generating as much income as possible before the next downturn (and you know it's coming), even if that involves cost increases or efficiency losses.

In either case, Tokach says it's important to base decisions on a cost-benefit analysis rather than total expenditures.

### Feed and management decisions

Contrary to what the airlines tell you in this new age of frugality, food is not a luxury. Regardless of market




*Mike Tokach*

conditions, pigs must be fed, but there are still some feed-related considerations for producers as they move from maximizing profit to minimizing loss.

### Market weight

When the ratio of return to feed and facility cost is high, it's best to increase market weights. While this will require additional space to keep pigs on feed longer or new technologies

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to speed growth rate, the higher return may be enough to offset increased costs and, in the process, increase net return.

Conversely, low market prices or high feed costs often increase marginal feed and facility costs so that keeping pigs in the barn for further weight gain is no longer profitable. As this will move market weights to the lower end of the weight discount window, producers are cautioned to not incur hefty weight discounts that exceed the cost of feed and facilities to grow pigs to a given weight.

## Sow inventory

When losing money, remove lower productivity sows to reduce feed costs, provide cash flow and maximize the efficiency of the remaining sows. Take care not to lower inventory too much, however, as you may limit your ability to generate income.

During high profit periods (remember those?), maximize herd inventory numbers to elevate production and make the most of the situation.

## Diet formulation changes

Levels of most nutrients won't change much with market prices, as any savings in feed cost per ton is offset by poorer feed efficiency. These nutrients include many amino acids (eg. lysine, methionine, threonine), vitamins and most trace minerals.

If necessary, there are some amino acids, such as tryptophan and valine, whose reduction will lower feed intake without altering feed efficiency.

Decisions on including or excluding ingredients will vary with the price relationship among ingredients. If their use lowers feed cost per unit of gain but also lowers growth rate, they may be appropriate when market hog prices are low, whereas during high price periods the savings in feed cost may not compensate for lost revenue from the lower growth rate.

## Feed flexibility

Clearly, feed and management decisions are not made in isolation; they must adapt to market conditions. When you're making money, it's best to maximize throughput and weights to reap as much profit as possible. In this scenario, market weights and sow inventory increase, as do diets with the inclusion of nutrients or ingredients to enhance growth rate. In leaner times, efficiency is king, as low efficiency animals are removed, market weights are lowered and diet costs are reduced to obtain the lowest feed cost per unit of gain.

In the pork industry, volatility is a fact of life. Those who survive are the ones that are continually evaluating opportunities and responding to market conditions; because if you try and make decisions in a vacuum, it will suck the life from your business every time.

# Part two: Alternative Feedstuffs and Feeding Programs for Nursery Pigs

**Eventually, nursery pigs grow up to be the star attraction at your dinner table. In the meantime, feeding them**

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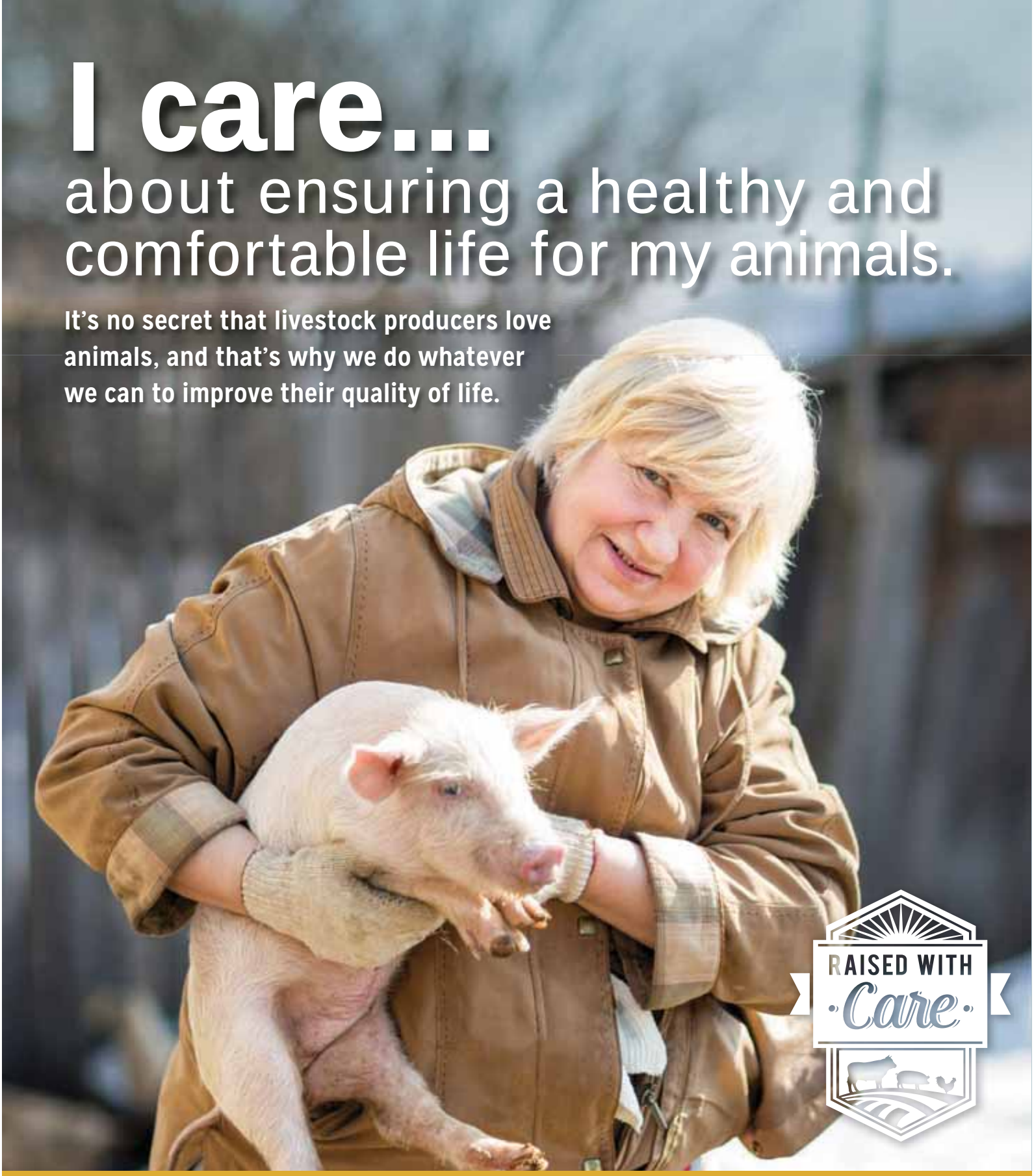


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**is no picnic. That's why academics are always looking for ways to optimize the nursery pig's diet. With 123 published scientific papers on nutrition, Dr. Ruurd Zijlstra – Department Chair for Agricultural, Food & Nutritional Science at the University of Alberta – is well qualified to offer some "feed for thought" in this area.**

*Ruurd Zijlstra*

Feeding of nursery pigs has two key phases, each with its own focus: immediately post-weaning when the goal is getting pigs to eat, and the subsequent phase when you try to raise the pig's capacity to eat by maximizing flexibility in feed formulation while maintaining growth performance.

Focusing on the latter phase, Zijlstra said that dietary feedstuffs directly impact feed costs and competitiveness, while functional characteristics of carbohydrates such as starch, fiber and oligosaccharides are critical to value-added attributes like intestine health. He then summarized the research on flexibility of feed formulation and control of gut health.

## Alternative feedstuffs

Zijlstra cited some interesting findings here from relevant studies:

- Young pigs fed diets containing less energy and more fiber boasted the greatest feed intake and gain, but with a reduced feed efficiency.
- While increased dietary acid-detergent fiber consistently reduced energy digestibility, effects on feed intake were inconsistent.
- Barley-based diets may provide an advantage over their wheat-based counterparts.
- While pigs have strong preferences for certain feeds and feedstuffs, diets including alternative protein feedstuffs can produce a growth performance comparable to pigs on a soybean meal-based diet.

## Feeding programs

Removal of plasma protein from nursery pig diets caused them stress in the form of increased diarrhea in feeding programs. Dietary carbohydrates may provide a partial solution for this.

## Carbohydrates

**Starch –** Reduced kinetics of starch digestion correlates with increased dietary starch entering the hindgut as resistant starch. Although too much of this resistant starch may hamper growth, there is an optimum starch digestion profile for maintaining gut health and growth in nursery pigs. It should make for great bedtime reading on those cold winter nights.

**Fibre –** Fibre may play an important role in improving gut health, as in a concentrated form such as oat ß-glucan it has a prebiotic effect on nursery pigs.

**Oligosaccharides –** Enterotoxigenic Escherichia coli (spelled just like it sounds), or ETEC, is a leading cause of diarrhea in piglets. The ETEC colonize the intestinal mucosa with adhesins and deliver toxins that cause fluid loss. One solution is to ferment part of the cereal grain in the feed to produce exopolysaccharide, which may reduce the incidence of diarrhea by providing an alternative target for the ETEC to adhere to.

## Conclusions

With stiff competition a way of life for modern pork producers, and feed costs comprising the bulk of their expenses, optimizing feed usage and improving efficiency is more important than ever. Research on alternative feedstuffs may ease the monetary burden for producers, while understanding the functionality of carbohydrates can aid in controlling gut health and enhancing growth performance. That way, pork can continue to take centre stage at family meals and the curtain won't fall on producers anytime soon. ■

## BREAKOUT SESSION 3: New Technologies

By Geoff Geddes

# Part one: JH Automatic Straw/Floor Feed Dispensing System & Slurry Handling (Acidification) System

**If you're like most producers, you've spent some sleepless nights thinking, "my life would be so much better if I just had an automatic straw/floor feed dispensing system and a slurry handling (acidification) system!" Thanks to JH AGRO, a Danish company that specializes in producing labour saving and environmental technologies for the farming industry, that's now an option. Tina Sorensen, who works in export and marketing for the company, shared some details on these two systems and the potential benefits for producers.**

According to Sorensen, her company's focus is on finding automated solutions to environmental problems. With the strict animal care and environmental regulations in Denmark, it's important to maximize efficiency and save on labour costs wherever possible; or, as Sorensen put it, "let robots do the hard work". That's the rationale behind the two systems Sorensen covered.

## I. JH Automatic Distribution System

This system, which allows for automatic distribution several times per day, consists of three parts:

1. Robot
2. Central filling station
3. Rail system

Depending on the space available, robots can range in size from quite small to very large, and they are battery-powered so noise pollution is not an issue. They are relatively low maintenance as well; just program them once and they are ready to carry out their tasks for the rest of the day (with no coffee breaks!).

For distribution options, users can choose among spreader discs – with either wide or narrow distribution – free fall or a transverse belt. There are five distribution tasks that the system can perform:

1. **Enrichment material:** Straw is the premium choice here, and automatic distribution has a number of benefits. In addition to keeping pigs occupied and healthy, it prevents tail-biting (tail docking is not performed in Denmark) and avoids clogging of manure systems by only emitting a small amount of material at one time.

CONTINUED ON PAGE 34

*Tina Sørensen*

2. **Deep litter:** Using a bale opener and a straw chopper drum, the system distributes straw in deep litter stables, saving labour and up to 30 per cent of straw usage while making the animals more comfortable.

3. **Floor feeding:** The system provides maize silage, soybeans or minerals through a vertical mixer. The automatic distribution aids in saturation, which reduces sow stress, as well as enrichment.

4. **Combination:** If the goal is automatic floor feeding as well as straw distribution, it can be accomplished by means of a robot, feed mixer, minerals, straw, silage and multiple filling stations.

## II. JH Automatic Slurry Handling System

As Sorensen so delicately put it, this moves the discussion from what goes into a pig to what comes out of him. And here, the real culprit is ammonia. Sorensen said that while we need ammonia in slurry, too much of it is lost through evaporation from slurry storage, barns and fields. If we can lower the ph level in slurry to around six, we'll reduce ammonia evaporation by 70 per cent.

This system accomplishes that by treating slurry with sulfuric acid every day in a process tank outside the barn. The fully automatic process allows for continuous, computer-controlled monitoring while ensuring complete documentation of the operation with data logging.

By stopping the evaporation of ammonia at the source, this system boosts employee and animal health with reduced ammonia in stable air and also benefits nature thanks to less ammonia in the atmosphere. Finally, since the acidified slurry can easily be pumped into storage, the user will realize labour savings in the process.

Next on the development table for JH AGRO is Smellfighter. It may sound like a really lame superhero, but it's actually a system that separates out the solid parts of the slurry, resulting in a 50 per cent smell reduction on initial testing.

These systems won't be for everyone. Those who adopt them, though, may experience greater efficiency, more environmental benefits and, who knows, maybe even a better night's sleep.

# Part two: Infrared Thermography in the Swine Barn

**In the always-competitive pork industry, new technology is the best thing to come along since, well, old technology. A perfect example is the use of infrared thermography (IT) in the swine barn. It's something that Dr. Nigel Cook, a research scientist with the Livestock Research and Extension Branch of Alberta Agriculture and Forestry, loves to talk about. And with over 100 peer-reviewed publications to his credit, he knows of what he speaks.**

### What is Infrared Thermography?

Dr. Cook explained that this technology has three main components:

*CONTINUED ON PAGE 36*

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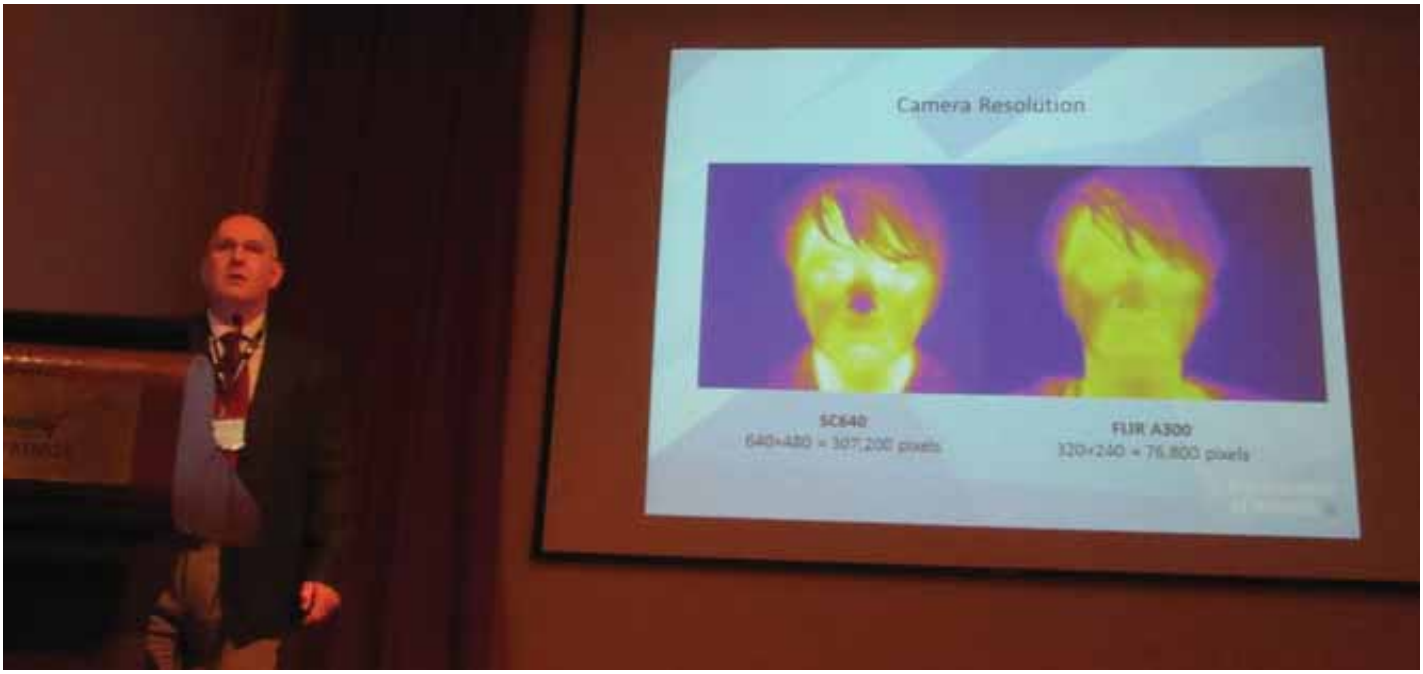


*Nigel Cook*

1. Detection of infrared radiation emitted by an object
2. Conversion of infrared radiation to temperature
3. Display of temperature distribution as an image

All objects with a temperature above absolute zero (-273.15°C or -459.67°F) emit radiation in the infrared wavelengths.

## Why measure heat losses by Infrared Thermography?

Mammals and birds maintain a constant body temperature through homeostasis. Heat can be lost, however, through induction, convection, evaporation and radiation (the most common method in pigs).

Cook cited several reasons for using IT to measure heat loss:

- Non-contact
- Automatable
- Non-invasive
- Sensitive to change
- Reflects metabolic activity
- Detects febrile responses
- Behavior can be measured from infrared images

## Pick a camera, any camera

Measuring heat loss by IT requires a thermal camera. There are several to choose from, each with its own pros and cons:

1. **FLIR SC640:** It has the best range, accuracy and resolution, but at $65,000 the cost may be hard to justify.
2. **FLIR A300:** The price tag of $10,000 is less prohibitive than the SC640, but its lack of portability means it needs to be hard wired, limiting its flexibility.
3. **FLIR E40bx, FLIR i3 and FLIR AX8:** These all give you portability at a more reasonable price of between $1,300 and $3,200. With the lower price, though, comes lower resolution.

## Infrared thermography and disease

On average, there are between one and three emerging zoonotic pathogens per year. The most efficient way to counteract novel pathogens is to discover them early, which requires sound preparation and excellent surveillance. When incorporating IT as part of this counteraction, keep in mind that a number of factors can affect IT temperature:

- Reflected environmental infrared radiation
- Imprinted body heat
- Spatial distribution: The more animals that cluster together, the higher the ambient temperature recorded.

In a vaccination trial by Cook and his associates, they reached several conclusions about temperature:

- Setting a threshold temperature eliminates miscellaneous background
- Background temperature had no significant effect on pig temperature
- Spatial distribution affects temperature
- Vaccination affects spatial distribution
- Vaccination induces an increase in radiated temperature
- Increase in radiated temperature detected at 10 per cent prevalence
- In theory, only one pig needs to exhibit a febrile response to increase the maximum temperature recorded

There's still a lot to learn about the emerging field of infrared thermography. Whether you dive in now or choose a wait-and-see approach will depend on your needs and resources. Just be sure that if you do take the plunge, you know how to make the best use of the technology. The potential is exciting, but $65,000 is a lot to drop on a hi-res selfie. ■

# BPS 2016 student science winners

Article and photos by Meristem

The R. O. Ball Young Scientist award was presented to two young scientists at the 2016 Banff Pork Seminar (BPS).

The award is named after Dr. Ron Ball, a long-time researcher and former BPS program director. The award recognizes graduate students who provide a best overall combination of good and relevant science, well-written abstract and excellent presentation.

First prize was awarded to Amanda Perri from the University of Guelph for her presentation, "The association of zinc-oxide usage in nursery pig diets with post-weaning anemia." Second prize went to Jingjing Cabahug from the University of Saskatchewan for her presentation on the "Evaluation of ATP bioluminescence method for rapid assessment of cleanliness of commercial hog transport trailers."

The first place winner receives a $500 cheque and plaque, and the second prize winner receives a $250 cheque. ■

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# Two new F. X. Aherne prize winners announced

Article and photos by Meristem

Two winners shared the 2016 F. X. Aherne prize for Innovative Pork Production. They received their awards Jan. 14 at the Banff Pork Seminar.

Sam Gelowitz of the Prairie Swine Centre in Saskatoon, Saskatchewan, received the award for an innovative carcass removal cart. Steve's Livestock Transport received the prize for a new hydraulic lift deck trailer.

"Innovation is the lifeblood of any industry and this prize recognizes individuals who have developed either original solutions to pork production challenges or creative uses of known technology," says Dr. Michael Dyck of the University of Alberta, chair of the F.X. Aherne prize committee. "With the quality of applicants it is not hard to see why this award is popular."

The prize is named after industry icon, the late Dr. Frank Aherne, a professor of swine nutrition and production at the University of Alberta in Edmonton and a major force for science-based progress in the western Canadian pork industry.

The carcass removal cart designed by Gelowitz is designed out of safety and ease of removal of dead sows and large grow finish pigs from the building. Previous carts use a vertical manual winch system to hoist the carcass, which became top heavy when transporting animals to the disposal site, and took a lot of manual labor.

The new design transports animals safely with a minimal amount of lifting by employees. The design uses a 2,000 pallet jack, a parcel and product rolling system and a 12 volt electric 2,000 lb. winch.

The pallet jack has excellent maneuverability allowing access to areas 30 inches in width and has zero turn radius to maneuver around sharp corners. The roller system eases the strain of moving animals onto the platform. The battery system is housed in an RV or marine storage unit for protection from the elements. A charger system keeps the battery charged at all times. Additional design elements add strength and help prevent the loaded cart from tipping over.

*Steve Brandt received the prize for a new hydraulic lift deck trailer.*

*Sam Gelowitz of the Prairie Swine Centre with his award for an innovative carcass removal cart.*

It all adds up to quick and easy removal of dead animals, less risk of staff injury and increased productivity.

The new hydraulic lift deck trailer from Steve's Livestock Transport was designed in conjunction with Wilson Trailer Company of Sioux City, Iowa.

The all-aluminum deck system has a powerful hydraulic lift cylinder and stainless steel cable system that raises two full-length decks into locked position. It acts as an elevator to lift livestock into different deck levels, which eliminates ramp usage to enter or exit the trailer. That reduces animal fatigue, stress and injury during movement and improves meat quality.

The new design has other attributes. It has superior ventilation through the trailer and the common contamination areas are easier to wash out. Biosecurity is enhanced. Heavy-duty gates contain and separate loads. The design is also physically easier on drivers. ■

# Scenes from Banff Pork Seminar 2016

Photos by Sheri Monk

*Although attendance was so great that some people had to wait in line to register, the cold brews and good company helped pass the time.*

*The setting at the Fairmont Banff Springs Hotel is classy, modern, yet majestic.*

*The food on the opening night of the seminar was gobbled up enthusiastically.*

CONTINUED ON PAGE 42


*Gordon Cove, president and CEO of the Alberta Livestock and Meat Agency, a major sponsor of the seminar, introduces plenary speaker Michael McCain.*

*The crowd at the first plenary session made for a full house – and most folks seemed bright-eyed and bushy-tailed, even the morning after an evening of real-life social networking!*



*The desserts were as exquisite as the surroundings at the Banff Pork Seminar.*

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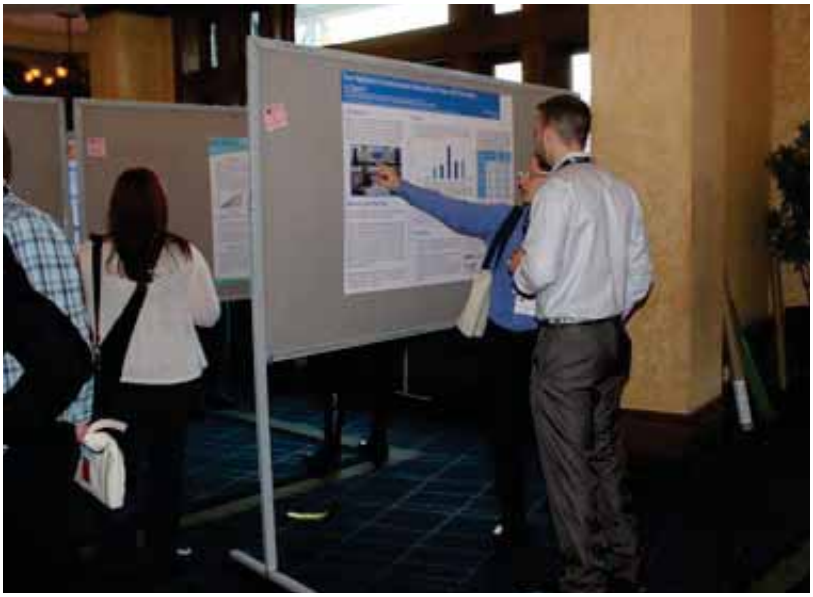

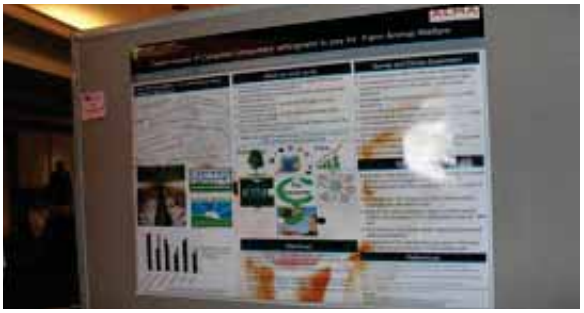

*The research posters lined the hallways into the main meeting rooms, and also served as a backdrop for the lunch buffet. Researchers received a lot of traffic and questions as a result of the exposure.*


*The trade booths received tremendous traffic at the new venue, and networking opportunities were plentiful.*

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*Ruurd Zijlstra, a well-known and loved personality in the Canadian swine community, as well as co-chair of the Banff Pork Seminar, gives the closing address on the final day.*

## PLENARY SESSION 2

Photos and content by Meristem

# Animal Welfare and Public Perceptions

Dr. Temple Grandin, Colorado State University

### New approaches needed to reach consumers on livestock welfare improvements

Dr. Temple Grandin, arguably the most well-known farm animal care researcher in the world, says consumers are still woefully behind in their knowledge of real progress in livestock handling in the industry. And she challenged delegates to the 2016 Banff Pork Seminar to motivate their industry to do a much better job of reaching out.

The good news in all of this, she says, is that there have been great improvements in animal handling in the industry.

"I've been in the industry for many years and I can remember times when animal handling at plants was really terrible," she says. Then she was hired by McDonald's, Wendy's and Burger King to implement animal welfare auditing of slaughter plants.

"The next two years I saw an exponential improvement in handling and stunning," says Grandin. "Today two major companies have video auditing where outside auditors randomly monitor handling. Yelling and hitting animals has stopped. It is a different and better industry today."

### Knowledge gap

The bad news counterpoint to those improvements, Grandin says, is that consumers don't know about the improvements. It's her big frustration, she says.

How to change things? Not surprisingly, the outspoken leader has thoughts on that.

Where the industry is doing the worst job is with the rapidly expanding millennial generation, says Grandin. By 2020

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they are projected to be nearly 20 per cent of the population while baby boomers will drop from 27 per cent today to about 20 per cent.

Online technologies have transformed how millennials communicate. Surveys show 21 per cent of millennials use social media as their main source of information. Fortunately nearly 35 per cent still read a national source of news. Regardless, the younger generation gets farther and farther away from the farm, with only 50 per cent ever having visited a farm that raises livestock or poultry.

Here are three key points important to understand.

## Young people lack knowledge.

A significant portion of consumers lack a basic knowledge of animals and agriculture. They are the first to grow up in a digital world. Many young people have been educated in a classroom where practical hands-on activity has been removed. Many have never sewed, cooked, fixed things or worked on a car.

"I believe that lack of hands-on activity growing up causes people to think in vague abstractions," says Grandin. "Children who grow up doing physical things quickly discover that stuff doesn't always work. Things in a practical world can be really well made but can never be perfect.




*Dr. Temple Grandin's address was a highlight for many attendees that have followed her work.*

"Fortunately many of our new students do want to learn and want to do more hands-on when they major in animal science."

## Values matter to young consumers.

Research shows that communication with young people is more effective if it comes from somebody who shares their values. Research also shows farmers are a trusted source of information for consumers.

Programs have been developed that allow producers to communicate directly with consumers. The pork industry needs to create similar programs.

## Animal welfare is important to millennials.

Surveys of young people who had become parents showed the vast majority are more concerned about chemicals, antibiotics and ingredients in food compared to their parents.

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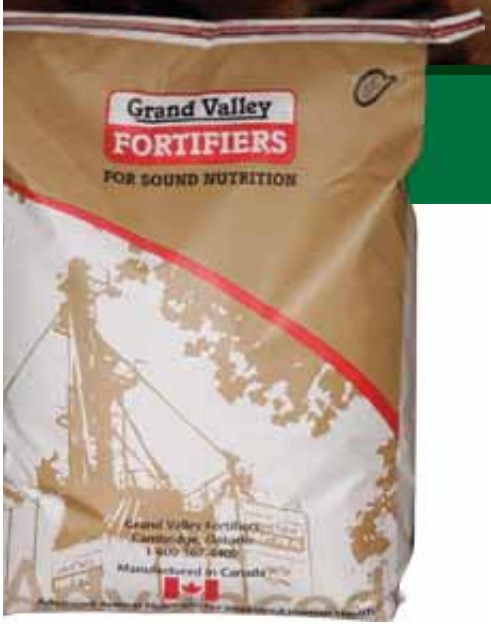


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Two studies, for example, showed nearly 80 per cent stated humane production practices were important. Consumers perceive small farms are better than big farms and nearly 64 per cent in one study felt food companies will put profits first over treatment of animals.

## Building a positive response

The pork industry should respond by showing consumers exactly what they are doing and explain it.

Grandin produced a video with the North American Meat Institute showing market pigs being loaded on a truck and then taking a tour of a large pork plant. "It has 346,845 views on YouTube and about 80 per cent likes," she says. "I explain how the plant works in a matter of fact manner. To improve credibility it explains I am a professor of animal science."

Another example is locations where tourists and students can tour a large, full scale working pig or dairy farm. To maintain biosecurity visitors look at pigs through windows and they can talk to people using microphones.

Science museums are another opportunity for agriculture to be displayed. And people in the pork industry need to communicate with friends they have in the big cities.

Remember what you do for chores is interesting to folks from the city, says Grandin.

"My generation has a tendency to bash millennials," she adds. "But talking to the younger generation is exactly what we should be doing."

People who raise pigs need to reach out. It can be as simple as cute pictures of piglets or showing procedures for washing and keeping the building clean.

## Livestock industry's negative response

Grandin takes aim at two issues she believes reflect negatively on agriculture.

"Ag Gag" laws which make it a crime for undercover investigators to take pictures she says make agriculture look really guilty.

And sow stalls are a degree of confinement that even older consumers on surveys do not accept.

## A closing thought

The older generation absolutely must reach out to the younger generation, says Grandin. "I am proud of the things I have done to improve animal agriculture. There are practices in animal agriculture that need to be improved and there are others that absolutely need to be defended.

"Fighting over sow stalls is likely not worth it."

# Brazilian Pork Production – Challenges and Opportunities

Cinara Milanez Shibuya Batista, Brazilian Association of Animal Protein

## A look inside Brazil's pork industry

If you want to understand what is happening in a country's agricultural industry, ask one of the leading players in that industry.

That request brought Cinara Batista from the Brazilian Association of Animal Protein (ABPA) to the 2016 Banff Pork Seminar to share her insights into Brazil, one of the largest exporting countries in the world. ABPA is the largest animal protein association in Brazil with 140 members throughout the value chain. Its goals include strengthening market access, improved government relations and international trade.

Brazil is well diversified when it comes to agricultural exports. It is a global leader and the largest producer and exporter of sugar, coffee and orange juice. As well as being the largest producer and the second largest exporter of soybeans, ethanol, beef and chicken meat, they are one of the leading producing and exporting countries of turkey, corn, pork and cotton.

The reason for Brazil's position as one of the world's leading food suppliers is attributed to its abundant land, sunshine and rainfall and year-round growing conditions. Batista says the country is using technology to make the most of these natural resources.

*Cinara Milanez Shibuya Batista of the Brazilian Association of Animal Protein brought the audience up to speed on Brazil's impressive industry.*

## Growing production

From 1960 to 2013, grain production in Brazil increased almost 1,000 percent. The country has doubled the area used for grain production and increased production 10 fold during that time. In the same timeframe, meat production of beef, chicken and pork has risen by 1,363 percent.

Traceability is seen as a competitive requirement and is mandatory for the companies handling and processing food products. This is essential because of the direct link to risk

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management, consumer safety, quality control and the ability to recall, and as a means of communication between producers, consumers and inspection bodies.

The country's traceability system "must be able to connect all the links in the chain with the ability to trace back from consumer to farmer," says Batista.

Management of disease outbreaks is of significant importance in Brazil. The country has a national swine health program to control, notify and action in cases related to pork production. Because of foot and mouth (FMD) issues in the last few decades in both swine and beef animals, Brazil has yet to regain access to some lost export markets. Because of this Brazil has adopted an extensive biosecurity program and places great importance on transparency and reliability within the system.

"Our integrated production system is a unique way of producing pork and chicken meat. The company supplies the producer with the animals, feed, veterinary support and everything else needed. The producer is responsible for delivering the animals for slaughter," says Batista of this closed loop system. Its goals are to ensure better sanitary control, more income stability for the producer and income creation in rural areas.

The new measures appear to be working. In the last 15 years, Brazil has boosted its exports of pork by more than 600 per cent and has increased pork production by 40 per cent primarily in its southern states. This makes Brazil the fourth largest producer and exporter in the world exporting about 500k tonnes and making up about eight per cent of global pork exports.

The Brazilian export market specializes in cuts versus fresh meat, and it represents 85 per cent of all pork exports. Almost half of all Brazilian exports currently go to Russia. "On one hand this is positive - Russia is a good market that pays well. On the other hand it is a cause for concern as there is risk when so much relies on one market," says Batista.

While the sow numbers have decreased in the last few years, the slaughter pigs per sow have increased as well as slaughter weights, thanks to strong genetics, better nutrition and animal welfare practices.

It is a country and an industry on the rise. ■

## BREAKOUT SESSION 5: Benchmarks of Excellent Production

By Geoff Geddes

# Part one: Gilt Development – Setting up the Breeding Herd

**When it comes to laying on the guilt, many parents and spouses have it down to a science. Gilt development, on the other hand, is a bit more involved. Fortunately, Dr. Rob Knox was up to the challenge. As a professor in the Department of Animal Sciences at the University of Illinois and a swine extension specialist, Dr. Knox is well-equipped to discuss proper gilt development and its importance for producers.**

Since sow longevity leads to greater fertility, immune status and mothering ability, a lot of research has looked at the link between sow longevity and gilt maturity at breeding. Focusing on fast growth and backfat when selecting gilts can lead to overweight gilts at breeding and require feeding strategies to limit over-conditioning. Since culling once a gilt enters the breeding herd is associated with low litter size, failure to conceive and structural problems, proper gilt development is likely the best way to ensure that gilts remain in the herd to meet their full potential.

As part of this process, there are several factors to consider.

## Health

High productivity in the breeding herd requires health stability and freedom from certain pathogens. Since new animals pose the greatest risk of disease introduction, strategies like limiting gilt entry frequency, health testing the source herd, biosecurity and allowing sufficient time for isolation and acclimation may be necessary. Often, you'll find that the longer the acclimation period the better (eg. 40 days for PRRS).

## Selection

Gilt selection for longevity can involve a number of factors. For example, housing effects of a dam in gestation and number of pigs nursing may affect gilt fertility and lifetime productivity. Gilt selection can occur at different stages and include selection for dam traits such as number of pigs born alive, birthweight, age at puberty, vulva swelling and parity.

## Housing and environment

Effects of housing and rearing environment on gilt fertility and longevity are unclear and their interaction with genetics and health are complex. Relevant factors may include animal space, number per pen, type of feeding system, lighting, temperature, air quality, housing system, season and climate. Studies suggest that controlling group size and floor space at certain times may improve lifetime fertility.

## Diet and feeding for growth and development

As part of gilt development, feeding is usually done on an ad libitum basis until puberty. Since differences in growth rate within groups mean some will achieve mature body weight and condition faster, some way of limiting growth by restricting feed access may be needed to avoid gilts being far above the desired weight and condition at time of breeding and farrowing. A number of studies have examined the options for limiting growth. It appears that energy restriction in late development is needed for fast growing gilts and, if applied properly, should have few long term consequences.

## Puberty induction

Average age for the start of puberty induction is 140-180 days, and is usually accomplished by relocating gilts to an exposure pen with 6-50 gilts per pen. Factors affecting the response of gilts to boar exposure include age at start of exposure, regrouping and boar-to-gilt ratio. In general, exposure will induce 70-90% of gilts within a specific period of time.

*CONTINUED ON PAGE 54*

Gilt development can be a long, complex process. But given the impact on producers and their business, this is one gilt trip that's well worth taking.

# Part two: Achieving High Productivity in Group Housed Sows

**Whoever said there's safety in numbers has never run with the bulls in Pamplona. But with increasing pressure from activist groups in recent years and revisions to the Code of Practice for the Care and Handling of Pigs, many processors now require producers to use group housing for sows rather than individual stalls. That begs the question: How do you make the change from stalls to group housing while still achieving high productivity? Fortunately, Dr. Larry Coleman, who has run a private veterinary practice in Nebraska since 1987 working mainly with swine clients, and Tim Friedel, the general manger for Thomas Livestock, have some timely answers.**

The issue of whether stalls or pens are more humane is a controversial one with compelling arguments on both sides. Now that group housing is becoming the norm, that question is largely a moot point. Yet the pen system poses a number of challenges for producers. As the veterinarian for a production system in 2012 that was looking to expand, Dr. Coleman encountered several problems with group housing, and the way he confronted them may inform other producers looking at expansion or conversion of their operation.

## Inaccurate feeding

Since individual feeding of sows is difficult when they have access to others sows' feed, Coleman and his team opted for electronic sow feeding (ESF), which can feed sows or gilts according to their needs. Whereas the only option for varying nutritional allotments with individually installed housing is to vary the amount of the single ration each female receives, ESF allows you to feed a combination of rations to any one female. In addition, ESF stations can weigh each sow daily and producers can use this information to determine the ideal weight gain curve for each sow during her gestational period.

## Social stress

It sounds like what we experience making small talk at a party, but it can have a big impact on pig health and pork quality. That's why Coleman addressed it on a number of fronts:

1. **Group size:** Since sows can remember a pecking order of up to 100 animals, Coleman opted for a design which included about 270 females per group, abolishing that pecking order and the stress that can accompany it.

2. **Electronic sow feeding:** The one drawback to ESF is that there's always residual feed remaining when a sow is forced out by the sow behind her. A race track design which involved a 250 foot walk back to the front entrance of the ESF alleviated this problem for Coleman's sows.
3. **Square footage per sow:** While opinions vary on what is optimal here, too low an allotment can cause undue stress to the sows. Coleman found that 23-24 square feet per sow was a happy medium that worked for both the producer and the animals.
4. **Number of sows per ESF station:** Industry allotments range from 45-80 per station. By opting for the low end of the range, Coleman's team allowed sows to move quickly and efficiently through the stations each day, avoiding the pig equivalent of rush hour road rage.

## Training difficulties

Coleman used a few strategies to deal with this problem:

1. **Early training:** Most ESF farms start training at the time of heat detection and/or potential mating ages. Instead, Coleman began at 10 weeks of age, acclimating the animals to a scale sorting system and everything that entails: Moving through pneumatic gates, being confined and learning the secret to getting food.
2. **Using a "Hog Whisperer":** Because forcing animals to adopt the ESF feeding system can be a prime source of stress, Coleman employed a "hog whisperer" to forge a strong connection with the animals and train them through trust rather than coercion. How's that for a non-traditional career path?
3. Exposure to one-way gates in the final gilt development unit (GDU): This allows them to become accustomed to unfamiliar items prior to using them on a day to day basis.

## Heat detection

Detecting estrus can be difficult in large groups, so Coleman uses an automatic detection system. A boar is housed in a detection area where visits are electronically recorded and sows determined to be in estrus are sorted into separate pens.

## Sow management

Group housing requires a choice between dynamic and static groups. Coleman chose static for smaller groups and dynamic for larger ones to keep barn inventory at full capacity.

## Bottom line

When he compared their loose housing system with a comparable operation using stalls, Coleman found very similar production parameters such as conception rates and litter sizes. That's good news, because it means that loose housing can fulfill the welfare demands of consumers while maintaining high sow productivity. For the industry, it's a win-win, and these days, that's rarer than a sow who's watching her weight.

# Part three: Key Indicators of Breeding Herd Productivity

**"If you aim at nothing, you will hit it every time."**
**– Zig Ziglar**

**That could describe a typical peewee hockey game, but it's also a reminder of why benchmarking is so important in pork production. Defined by Webster as "a standard or reference by which others can be judged or measured", benchmarking is something that Ron Ketchem believes strongly in. Armed with a BS in Animal Science and a Masters in Reproductive Physiology and Animal Breeding, he worked in the swine industry for 42 years with both a genetic and feed company before purchasing Swine Management Services (SMS) – a data analysis firm – in 2002.**

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Ketchem doesn't just pay lip service to benchmarking, he lives it. Since starting the SMS Farm Benchmarking data base in 2005, he has grown it to include almost 900 farms ranging from 125 – 10,000 sows, with 1.5 million mated females in inventory and farm data from Canada, the United States and China. Over the last several years he has come up with 11 production numbers that are most critical to monitoring and improving production:

- Pigs weaned/mated female/year
- Total born/mated female/year
- Litters/mated female/year
- Farrowing rate %
- Wean to first service interval
- Female death loss
- Piglet survival (100% - (stillborn % + pre-weaning mortality))
- Total born/females farrowed (P1+ P2 + P3)
- Gilt farrowing rate %
- Total born/females farrowed (P1)
- Retention (P1 + P2 + P3) culls & death loss

From this data, Ketchem gleaned a lot of information that could be useful for producers.

1. Factors that influence total pigs born:
    - Using F1 females
    - Ensuring that gilts have at least a recorded skipped heat, gestation exposure for 10+ days and a weight of 300+ pounds before breeding.
    - Increasing feed intake in lactation to 15 lbs. per day with ad-lib feeding.
    - Increasing feed intake from weaning to breeding, with a goal of 40 lbs. in five days.
    - Lowering weaning to first service interval.
    - Offering more stimulation at breeding by boar and more hands on contact by breeder.
    - Monitoring semen quality as to age, dilution, storage and handling at the farm.
2. Key facts about farrowing rate:
    - A key driver at any farm with a target of 90+%.
    - Is a three part variable: Female x Semen x Person (breeding technician).
    - A 4% increase in farrowing rate will improve production by 1.35 pigs per sow per year.
    - To improve farrowing rate on farm, breeders must be able to breed gilts (P1).
3. What to work on with your AI technicians (breeders) to improve farrowing rate:
    - Provide ongoing training and oversight supervision.
    - Take planned breaks to prevent fatigue.
    - Record breeding information on each mating: AI technician, time of day and semen batch number.
    - Review breeding records of individual breeders for farrowing rate and total born, number of services and matings, wean to first service interval, parity, day of week and hour of breeding, and semen back number.
4. How to improve semen management:
    - Know how the stud handles the semen, including type of extender, dilution rate, cleaning procedures and presence of testing for bacteria.
    - Ask what temperature semen must be stored at on farm.

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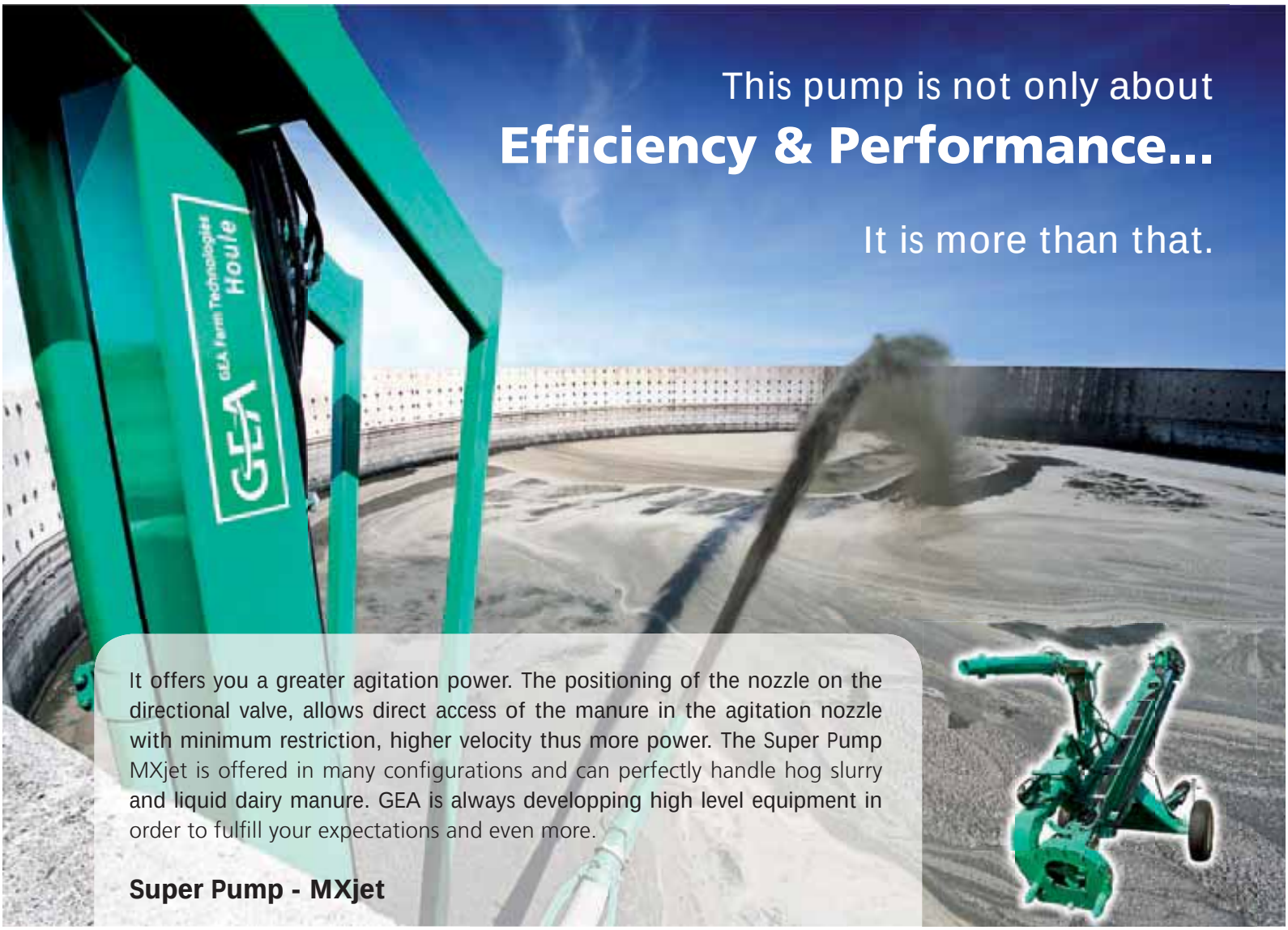


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- Record semen delivery dates with batch information.
- Check inside and outside temperature of semen bags with temperature gun.
- Each day, record high/low temperatures for last 24 hours in semen storage unit and monitor to ensure no more than 2-3 degrees of change in 24 hours.
- Place semen in trays in storage unit, which should be an air conditioned room that stays between 50 and 70 degrees F year round, and rotate each day.
- Store semen by delivery date so oldest is used up first.
- Always place semen in a cooler with cool packs when removing for breeding.
- Mark semen returned to storage unit from breeding and used that day or discard it.

5. How to improve wean to first service interval:
   - Starting on day of lactation, give sow in lactation more feed and ensure P1 females have all the feed they want.
   - Place sows on self-feeders or a feed storage hopper to allow for self-regulation of feed intake.
   - Give weaned sows extra feed from weaning until breeding.
   - Start daily boar exposure the day of weaning to stimulate sows.
   - Start heat checking sows on the day of weaning so that sows coming into heat early are found.
6. How to lower female death loss:
   - Make sure crew is certified for PQA Plus and TQA.
   - Train crew on finding sick or lame females and have written SOPs for this as well.
   - Develop a list with your vet of antibiotics for treating sick and lame females and keep detailed information on each treated female for 12 months.
   - Verify that personnel are trained on proper euthanizing procedures and record deaths accurately.
7. How to save more pigs in farrowing:
   - Extend farrowing hours to address stillborns.
   - Towel dry or use drying agents to coat pigs and reduce pre-weaning death loss from chilling.
   - Have a "day 1" pig care specialist in farrowing rooms when every sow is farrowing.
   - Manage fall back pigs on days 2-8.

If a farm was at 100% in each of Ketchem's 11 key indicators, they would be producing 36+ pigs weaned/mated female/year. To do that, you need caring, trained people, strong gilt development, detailed breeding of females and farrowing methods to save more of the extra pigs being born. It's not easy, but better to aim high and come up short than to aim at nothing and hit it every time. ■

# BREAKOUT SESSION 6: Swine Health and Genomics

Content and photos by Geoff Geddes

## Part one: Genomics and Swine Health

*Graham Plastow*

**It may be a poor icebreaker at most parties, but swine disease is a hot topic in the pork industry these days. So too is genomics, an area within genetics that concerns the sequencing and analysis of an organism's complete DNA. Thus it was only natural that the two subjects intersect as part of a research project, especially given the high cost of swine disease for commercial pig production. And who better to lead that project than Graham Plastow? As CEO of the Livestock Gentec Centre and a professor in the Department of Agricultural, Food and Nutritional Science at the University of Alberta, Plastow is a pioneer of the application of genomics in livestock. And when he talks about genomics and swine health, everybody listens.**

With an international consortium led by Canadian researchers and industry partners, the Genome Canada project was launched in 2010. Its premise was that identifying genetic markers associated with animals performing well when exposed to disease should lead to tools that can improve swine health. Since Porcine Respiratory and Reproductive Syndrome (PRRS) and Porcine Circovirus Associated Diseases (PCVAD) were costing the industry $100 million a year, they seemed like a good place to start. Researchers aimed to provide new diagnostic tools for selecting pigs that are genetically less susceptible to PRRS and PCVAD.

*CONTINUED ON PAGE 60*


## 2010-2015

Over the next five years, the team identified individual variation in host response to infection with these two diseases in nursery pigs, and in fetal outcome after infection of pregnant gilts with PRRS. Among other things, they found several phenotypic factors and immune response mediators associated with viremia, weight gain and fetal outcomes, as well as litter size and reproductive performance. These factors can also help predict relevant traits such as growth and litter size after infection, antibody response after vaccination or infection, and sow lifetime productivity.

## What they learned and what comes next

While they identified consistent results within disease models, the results appear to be disease specific. For diseases like PRRS (that now costs the U.S. over $650 million annually), this may not be an issue as the high economic impact justifies the expense of a genomic approach. But pigs are susceptible to many diseases, with one of the first symptoms for any pathogen being loss of appetite, and the resulting reduced growth can be a costly problem for producers. Interestingly, though, this project found that certain pigs are disease resilient, in that they are able to maintain their performance despite being infected. More importantly, it appears that this difference in how pigs react to disease can be identified in a blood sample and used to select for resilience. The next generation of studies will seek to establish whether developing more resilient pigs is possible.

# Part two: Genomics and Swine Health: The Next Steps

Building on the work of Plastow and his team described in Part I, a new research project hopes to provide novel strategies for reducing disease impacts by applying genomic technologies to develop and optimize selection strategies for resilient pigs. It will also enhance overall disease resilience of pigs by providing new results that improve nutritional and microbial management at the production level.

Project leaders Dr. Michael Dyck (University of Alberta), Dr. John Harding (University of Saskatchewan) and Dr. Bob Kemp (PigGen Canada Inc.) are focusing on four major areas of study:

*Michael Dyck*
*Photo by Meristem*

**1. Animal Models:** In order to study disease resilience and define the resilience phenotype, different animal models are being studied. One of the project's key goals is to better predict the health and productivity of pigs in commercial environments based on samples obtained while in their high-health source farms.

**2. Host-microbial Interactions:** Researchers want to identify microbial gut colonization patterns in a large population of pigs, as well as the gut microbiomes associated with immune response to vaccination. In doing so, they hope to determine the optimal gut microbiome associated with health and appropriate immune response.

**3. Genomic Analysis:** At all stages, this project will collect a large number of samples for genomic analysis to determine the gene profile and gene expression that are associated with the disease resilience in pigs. This information will help develop

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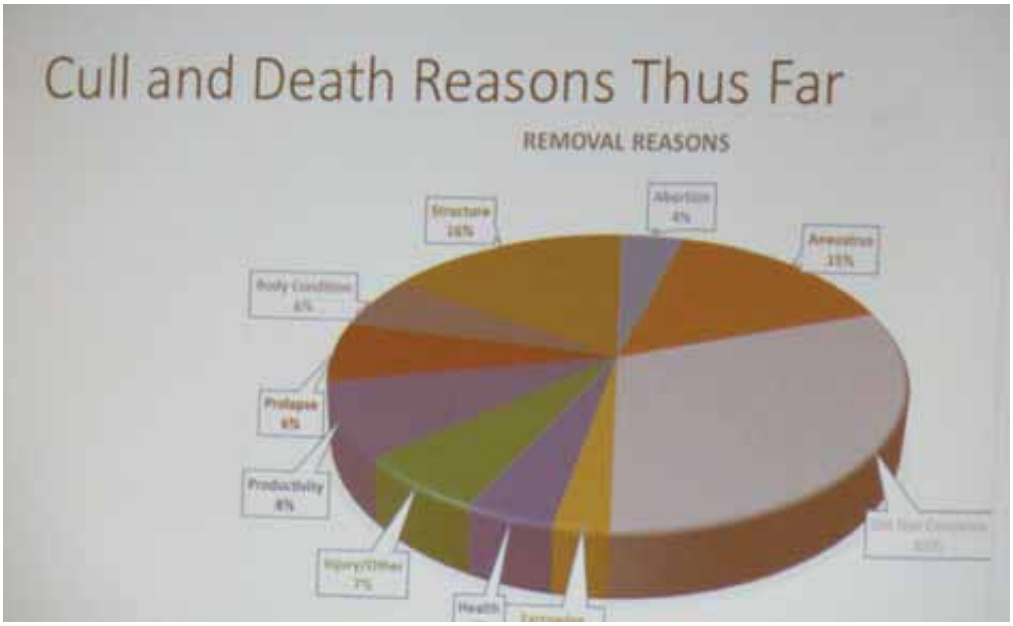
*Bob Kemp*

the Genomic Estimated Breeding Values for improved pig health and resilience, as well as optimize commercial management strategies for reducing the impact of disease on resilient pigs.

**4. Socio-Economic Analysis:** The purpose of this analysis is to identify and measure the social value of using genomics in breeding for disease resilience, for Canadian and global markets. This will help determine the best approach to pig health optimization: the development of vaccines, more specific antibiotics or breeding for disease resilience.




## Industry implications

Ultimately, researchers hope to improve the end-user's ability to select, feed and use microbial management tools for the optimal immune response of pigs. This should help Canadian producers meet rising global pork demands by improving health and productivity while reducing the use of antimicrobials in pork production. Now THAT'S a good icebreaker.



# Part three: Impacts of Moving "Clean" Gilts into "Health Challenged" Commercial Sow Farms: Gilt Acclimation Project


*Benny Mote*

Plastow's work and the latest Genome Canada project outlined in Part II have demonstrated that genetic variations in animals can produce differing levels of resistance to infectious diseases. However few studies have been undertaken combining multiple diseases. Led by Dr. Benny Mote, assistant professor, swine extension specialist at the University of Nebraska-Lincoln, this study followed over 3,000 gilts as they transitioned from high health multiplier farms to cooperating commercial farms where the females would encounter a number of natural disease loads. Genome-wide association studies identified regions of the swine genome controlling the most commercially relevant diseases.

CONTINUED ON PAGE 64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## Background

In the true gilt acclimation part of the study, data was collected on 3,033 females from seven different genetic companies. Gilts were weighed and had their blood drawn before being followed to 23 different commercial farms that had at least one commercially relevant disease, typically PRRS. Each farm applied its standard gilt acclimation protocol, which varied from direct entry to offsite quarantine. Blood was drawn again within 30 days of the gilt's first and second litters, and reproduction, vaccination and treatment records were kept out to parity four.

## Outcome

The early data from the outbreak farms led to exciting results. For example, it was shown that two regions of the swine genome on chromosome seven explained 40 per cent of the genetic variation with the PRRS S/P ratios. Not only were those ratios inheritable, but they correlated strongly with traits such as number of mummies and number born alive while under a PRRS challenge. It may be possible to use the knowledge gained from the S/P ratios of commercial animals to help drive selection in nucleus populations that typically never see these challenges, thereby minimizing the impact of diseases on commercial producers.



# Part four: Genetic Improvement of Sow and Gilt Reproductive Performance via PRRS Immunity

This work presented some results from the Gilt Acclimation Project described in Part III. One of the key findings was that S/P ratio has the potential to be used as an indicator trait to select for improved reproductive performance during PRRS infection. Also, while S/P ratio can be predicted with moderate accuracy when two regions of chromosome 7 are used, the accuracy of prediction of reproductive performance during PRRS infection was higher when the other genomic regions were included. Altogether, the results indicate that response to PRRS in gilts and sows is heritable and that immune and reproductive performance might be improved using genomics.

New data is still being generated in this project which will increase our understanding of the genetics of immunity and reproductive performance in replacement gilts and sows.

# Part five: Genetics of Host Response to PRRS in Growing Pigs

To capitalize on advances in genomics technology to study the role of host genetics in PRRS infection and develop tools to select pigs for improved resistance or reduced susceptibility, the PRRS Host Genetics Consortium (PHGC) was initiated in 2008. It involved experimental challenge of groups of 200 commercial nursery pigs at experimental facilities with a specific strain of PRRS. The purpose was to determine the genetic basis of differences in response to PRRS between pigs from the same breed or line, thus enabling breeders to improve their lines for PRRS, along with other traits.

## Findings

Host response of nursery pigs to PRRS infection was found to have a sizable genetic component under controlled experimental challenge studies. In particular, a major gene for host response to PRRS was identified on SSC4, with the putative causative mutation in a gene that is involved in innate immune response. The WUR SNP (Single Nucleotide

Polymorphism) in this region could be used to select for pigs whose growth rate is less affected by PRRS. While a lot of study still needs to be done, researchers are beginning to unravel the genetic basis of host response to PRRS. Ultimately, this should provide the ability to select pigs that are less susceptible to PRRS infection and its effects on performance. As well, insight into host response to PRRS infection could aid in development of more effective vaccines and therapeutics.

## Part six: PRRSV and the Pregnant Female

One of the most devastating effects of the PRRS virus is reproductive failure in pregnant females. While PRRS can cause embryonic death in early gestation, it most commonly manifests in late gestation as abortions, early farrowing, fetal death and the birth of weak, congenitally infected piglets. Although transplacental PRRS infection occurs mainly in late gestation, the exact mechanism by which it transmits to the dam and her fetuses has yet to be determined.

The Pregnant Gilt Model (PGM1) was a large-scale, multidisciplinary project led by University of Saskatchewan researchers in 2012. The goal was to improve understanding of the mechanisms associated with transplacental PRRS infection and identify phenotypic and genotypic biomarkers of resilience to reproductive PRRS.

Some of the key project findings were as follows:

- Larger fetuses are more susceptible to transplacental PRRS infection.
- The presence of fetal and umbilical lesions increased the likelihood of fetal meconium staining, the earliest stage of fetal compromise associated with PRRS.
- Events occurring in the fetus are essential in the pathogenesis of reproductive PRRS. Therefore, the detection of resilient phenotypes should focus on transplacental transmission and fetal immune responses.
- Progression of the immune response to PRRS appears to be faster in resistant pigs than in susceptible pigs, which may contribute to lower levels of fetal pathology in resistant pigs.
- There is new evidence for the genetic basis of fetal response to PRRS, which may ultimately lead to alternative control strategies to reduce the impact of reproductive PRRS.

The PGM1 was the largest study of reproductive PRRS to date. The PGM2 will build on that to validate the genomic markers associated with viral load and fetal autolysis. It will also investigate specific mechanisms underlying transplacental transmission and host responses occurring in the most susceptible fetuses. As PRRS is one of the swine industry's costliest diseases and lacks a completely effective vaccine, exploring other means of control and prevention, such as identifying highly resilient pigs, is more important than ever. ■

## BREAKOUT SESSION 7: Responsible Use of Antibiotics

By Geoff Geddes

# Part one: Antimicrobial Use 2016 and Beyond: Industry Challenges and Opportunities

**If you've ever complained about catching a cold, try getting pneumonia from a paper cut. Before we had antibiotics to treat and prevent bacterial infections, that was a real possibility. Now that we've got them, how do we use them responsibly in agriculture? It's a touchy issue these days, but one that Dr. Gail Cunningham - a vet with Marshall Swine Health Services and technical services veterinarian for swine in Western Canada with Boehringer Ingelheim – says we need to get a handle on sooner rather than later.**

Antibiotic stewardship involves only using them when necessary and choosing the correct drug, dose, route and duration. The right choices will preserve antibiotic efficacy, while the wrong ones favor antimicrobial resistance and pose serious risks for both animals and humans.

After distinguishing antimicrobial resistance from antibiotic residues, which occur when traces of antibiotics are found in meat but should not be present in Canada due to withdrawal periods, Cunningham listed three areas where antibiotics are currently used in agriculture:

1. To treat sick animals.
2. To treat a herd before they're sick based on previous disease outbreaks.
3. Growth promotion, which is slated to end in 2016.

## Quantifying antimicrobial use (AMU)

There are many ways to do this, with the easiest being the total amount of active ingredient sold/used. But this doesn't tell you how many animals the medication was actually used on. That's why Cunningham said benchmarking and measurement must be about more than "how much" and include information on species and class of medication.

## Antimicrobial benchmarking and use globally

### Denmark

In 2010, Denmark introduced a Yellow Card System to reduce the need for antibiotic treatment through improved health and management. Producers are benchmarked on a nine-month average on three age groups of pigs. Those who reach twice the national average for antimicrobial consumption in each of the three groups are issued a Yellow Card and have nine months to correct the situation.

The Netherlands also has a mandatory system of gathering information on vet prescriptions, but Cunningham warned that both countries may be nearing a critical level where welfare and antimicrobial use have reached a balance. Removing antibiotics just for the sake of removing them can negatively affect animal welfare, and new legislation must be accompanied by changes in management, vaccination, biosecurity, pig flow and health status.

### United States

The U.S. recently introduced an Antimicrobial Resistance

Action Plan with three core objectives:

1. Determine and/or model patterns, purposes and impacts of antibiotic use in food-producing animals.
2. Monitor antibiotic drug susceptibilities of selected bacterial organisms in food-producing animals, production environments and meat and poultry.
3. Identify feasible management practices, alternatives to antibiotic use and other mitigations to reduce AMR associated with food-producing animals and their production environments.

**Canada**

Canada released its own document in October of 2014 that was somewhat similar to the American plan, with voluntary removal of growth promoting claims by the end of 2016. Entitled, "Antimicrobial Resistance and Use in Canada: A Federal Framework for Action," it included four actions:

1. Establish and strengthen surveillance systems to identify new threats or changing patterns in antimicrobial resistance and use, in human and animal settings.
2. Strengthen the promotion of the proper use of antimicrobials in human and veterinary medicine.
3. Work with animal agriculture to strengthen the regulatory framework on veterinary medicines and medicated feeds.
4. Promote innovation through funding collaborative research and development efforts on AMR both domestically and internationally.

## Implications for the industry and producers

1. We need to focus not only on reduced antimicrobial use (AMU), but on reducing the need for AMU through improved health.
2. Healthier pigs use fewer antibiotics.
3. There is a need for improved data collection on AMU.

## Conclusion

Cunningham said that now, more than ever, producers, government, veterinarians and health care professionals must work together on viable solutions based on science and solid understanding from all sides. To succeed, we must have relevant and accurate information at hand, be proactive in our approach to AMU and be willing to stand up and advocate for our animals and our industry.

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# Part two: Controlled Use of Antibiotics

**With an issue as far-reaching as antibiotic use, the more advice we can glean from the experts, the better off we'll be. Dr. Frédéric Beaulac is one such expert. As a partner in Triple-V Veterinary Services Inc., Beaulac and his team of 8 vets work in the field of large populations of all species. His related pharmacy skills led him to get involved in various committees on the use of drugs and gave him some insights on antibiotic use from which all producers can benefit.**

To use antibiotics responsibly, Beaulac said we need to justify any type of use, make better choices and find ways to use them less often and more effectively. Specifically, he outlined a number of areas to work on:

1. Develop management strategies to achieve lower and better antibiotic use.
2. Promote individual treatments before starting a group treatment.
3. Exercise caution when using feed as a vehicle for antibiotics.
4. Be properly equipped to limit group treatments to the smallest possible number of animals.
5. Avoid subtherapeutic use as it can trigger antibiotic resistance.
6. Use vaccines!
7. Remember that pig flow and production strategies influence the health of the animals.
8. Avoid degrading your health status.
9. Improve the health status of your farm.
10. Explore alternatives to antibiotics.
11. Properly manage your on-farm medicine supply.
12. Properly record treatments, clinical signs, deaths and cause of death.
13. Educate your employees.

## Where to Begin

They say the journey of a thousand miles begins with a single step, but who has time for a thousand mile journey? To fast track things a bit, Beaulac suggests things you can do tomorrow to get started at your farm:

1. Benchmark your starting point: With the help of your vet, compile last year's antibiotic consumption for your farm.
2. Find alternatives concerning the use of Class 1 products, which include Baytril, Excenel, Excede and Ceftiocyl.
3. Try to find your weakest spots, which are those strategic areas or points in time when your farm needs a lot of medication. Once you do, start working on one or two weak spots, integrate the changes step by step and then start working on other strategic areas.

## Conclusion

Prevention of antibiotic resistance is a shared responsibility. Everyone must make an effort, and every stakeholder must be aware and support producers in overcoming this challenge.

# Part three: Responsible Use of Antibiotics – From a Feed and Management Perspective

**Backed by a B.Sc. and M.Sc. in Animal Sciences from Laval University, Francis Simard currently works in technology transfer at Application and Solution North America for Nutreco, where he helps producers improve their bottom line by either boosting performance or reducing production costs. Along the way, he has learned a lot about management practices that can impact animal health, and he gladly shared those lessons with his audience.**

Through his work, Simard has gathered tips that can aid producers:

1. Maximize colostrum intake.
2. Focus on heat and supervision in farrowing management.
3. Be careful at weaning: In light of the behavioral, biological and immunological changes that occur at time of weaning, it's essential to pay close attention to nutrition, management and the environment.
4. Remember that early feed intake (first 24 hours after weaning) is likely the best protection against early gut health issues after weaning.
5. Creep feed helps.
6. Washing is critical: To reduce bacterial pressure, a proper washing and disinfection method is mandatory.
7. Control the environment: To reduce antibiotic use, stress reduction is vital, so monitoring key elements of the environment such as gas, humidity, air quality and temperature variation is critical.
8. All in-all out is mandatory.
9. Limit cross-fostering.
10. Don't forget water: Clean, disinfected water is needed to minimize pathogen transmission from water to pig, from healthy to infected pig within a lot, and from one lot to another over time.
11. Feed additives will help.

## Conclusion

To significantly reduce antibiotic use, it's important to review every farm management strategy that can affect the general health of the pigs, either by cross contamination or stressful conditions, and adopt proper changes when strategies are found inappropriate for a reduction in antibiotic use. ■

# 2016 Foxcroft Honorary Lectureship – Dr. Mike Tokach

Article and photo by Meristem

One example of knowledge leadership at each Banff Pork Seminar is the George Foxcroft Honorary Lectureship, named after the swine research pioneer and industry icon.

"The George Foxcroft Lectureship in Swine Production has been established to allow the Banff Pork Seminar, in conjunction with the University of Alberta, to host speakers who are conducting high profile research that is applicable to the pork production industry and will potentially improve production efficiency," said seminar co-program chair, Dr. Michael Dyck of the University of Alberta.

"In 2016 I am pleased to recognize Dr. Mike Tokach as the recipient of the Foxcroft Lectureship," he said. "It is presented based on the quality of his research and the contributions he has made to the swine industry."

Tokach is a University Distinguished Professor, extension specialist and swine nutritionist in the Department of Animal Sciences and Industry at Kansas State University. His research focuses on practical swine nutrition and working with industry producers to promote the rapid adoption of new technology.

National Hog Farmer magazine named Tokach one of the 50 people who have made the greatest impact on the swine industry in the last 50 years. He is the author of over 250 scientific journal articles, seven book chapters, and more than 800 extension publications. He has secured over $10 million in grants and gifts to support swine research, and he has given more than 250 invited lectures at national and international conferences. Tokach also has been awarded seven patents for his research. ■

# Boar Pit 2016 – Inside Maple Leaf's loose housing switch

Article and photos by Meristem

Switching sow stall barns to loose housing is a hot topic in the pork business these days.

Delegates to the 2016 Banff Pork Seminar got a look in the window of one of the largest barn conversion projects in the pork industry in Canada, Maple Leaf Foods. Neil Booth of Maple Leaf sat as one of the panelists in the Boar Pit open mike session that closed out the seminar.

The good news is it is going well on both the loose housing front and on the general sustainability program that Maple Leaf announced in December of 2015. Boar Pit panel moderator, Shannon Meyers asked the questions. Here's an excerpt of Booth's responses:

*Boar Pit panel, left to right: Ron Gietz, Alberta Agriculture and Forestry, Martin Rice, Canadian Pork Council, and Neil Booth, Maple Leaf.*

## Q: What are the hands on the ground lessons the company has learned so far?

"Machinery is machinery," says Booth. "When you do group housing, whatever feeding system you choose, it is just a piece of machinery. You figure it out and you make it work."

"Pigs are relatively easy to work with and to train. Even older sows can be trained.

"People are what you need to be focused on. We have generations of people who have never worked with large groups of animals. We (Maple Leaf) have groups of 120 sows

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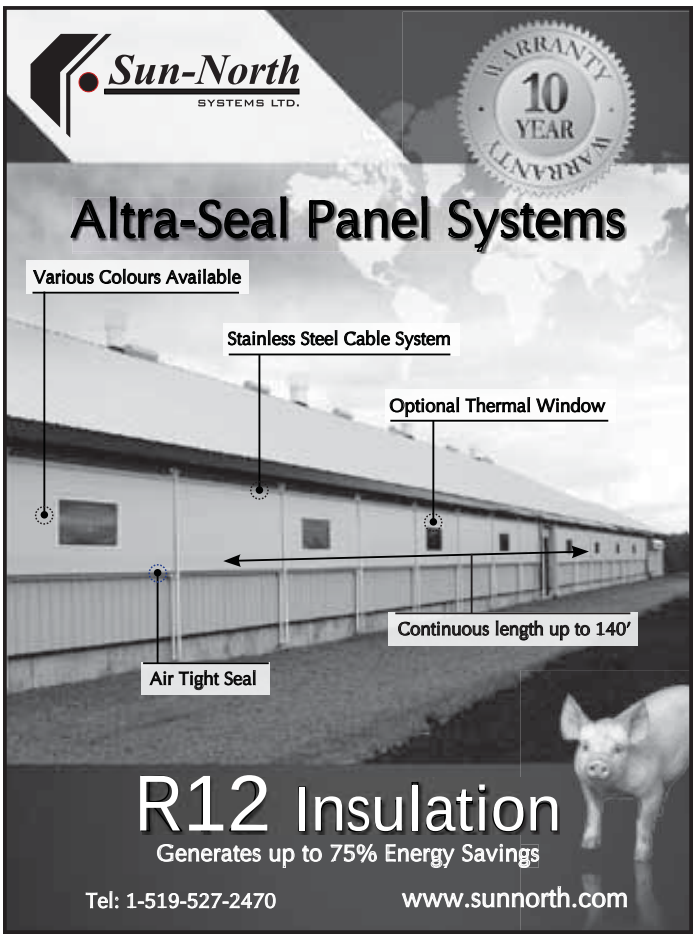


*Moderator Shannon Meyers*

and when we introduced the projects to the barns, some people were quite wary of it, quite scared by it and nervous of walking around in the midst of these animals."

"I get a feeling at certain times we have lost a bit of the sense of stockmanship in the hog industry. In stall systems the animal is there day after day and we see her at the same time and place every day. Culture wise or for anybody who goes into loose housing or reduces antibiotics there will be an emphasis on good production practices, things we maybe knew back in the nineties and maybe have let slip a bit in the last decade."

"So for anybody going down the road have a lot of thought about the conversion but make sure you involve people right up front and how this is going to affect them going forward.

## Q: Will converting to loose housing mean reducing the size of your sow herd?

It's going to depend on your feed system, says Booth. Different feed systems are going to require different space requirements and most will be higher than stall systems.

"In reality if you look inside a traditional stall barn there is a lot of wasted space in alleyways, walkways, boar pens etc., so a lot of living space that is available to use," says Booth. "If you are creative in barn conversion you can be very close or equal to what you had before for numbers."

## Q: Has Maple Leaf made changes during barn conversions they wished they hadn't?

Nothing major, says Booth. "Most are small details, like why did we put this gate here. Most are site specific. We haven't changed anything too much in the way we've done it."

"We have put a lot of preparation into the whole process. We started discussing this in 2007."

"So for anyone who is getting into it take your time. It is a lot easier to make mistakes on the back of a napkin than when you are getting into it."

### Q: So to recap no major issues?

"The conversion is going well. Some barns are quicker than others but over time you get it figured out. Again, the secret is to focus on people and involve them from the start."

### Q: What about your commitment to reduce your footprint by 50 per cent?

Sustainability makes a lot of sense for the world but it needs to come down to a personal level, your house or your business.

"For me it is what does it mean in your barn. Does it mean recycling AI rods? Yes it does but it's more than that.

"We started to look at this and we have a supplier in our system, an early adopter who produces about 400,000 finisher pigs a year. He has a 10,000 finisher barn and he reduced the water usage by 57 per cent simply by having a maintenance fellow go through the barns for an hour once a week.

"So I'd challenge anybody around here, if you can find a way to use 57 per cent less water, less hydro pumping it in, less hydro pumping it out and 57 per cent less volume to store and spread for about $15 a week of somebody's time. That is environmental sustainability at its best and most practical.

"So reducing the footprint by 50 per cent is a big deal for sure, but it is a lot of small things that we can all do." ■

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*Audience members take advantage of the interactive nature of the annual Boar Pit.*

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