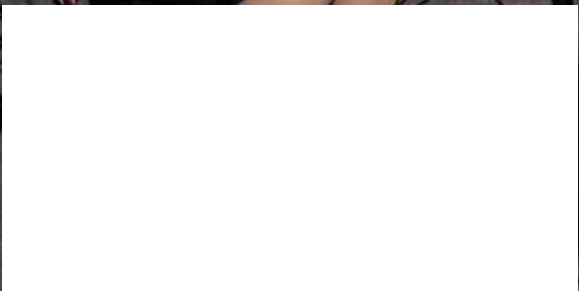


Western Hog JOURNAL

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Cover Photo

The Penny Sanborn Trio entertains Banff Pork Seminar networkers during the "Prost! Beer. Bratwurst. Bonding." event on Wednesday, January 21.

Photo by Sheri Monk



Honours and Awards

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Western Hog JOURNAL

Message from the editor

It's incredible how fast time flies! It feels like just a few months ago that I was putting the Banff 2014 edition to bed, yet here I am again.

It was fantastic to see everybody turn out for the 2015 Banff Pork Seminar, and the mood was incredibly upbeat. Of course, it was last year too, until the PED announcement was made. It's amazing how much things can change in the period of just one year.

It was great to visit with so many of the supportive sponsors too. Support from vendors and sponsors help keep the costs low enough so that it's not too cost prohibitive for stakeholders to attend the conference. And while the weather might not have been conducive to skiing, Banff is always a beautiful and inspiring place, especially when enjoying the company of likeminded folks.

As usual, every networking opportunity was hopping with chatter and activity and several extra-curricular activities afforded people even more time to socialize. Last year I enjoyed one very late night out, and maybe it's because I'm getting older, but late nights result in torturously difficult mornings! So, this year, I was very well behaved and returned to my room early every day – and I even made it to the gym once!

Next year, the Banff Pork Seminar is going to be held at the Fairmont Banff Springs Hotel, and that certainly generated a great deal of interest among attendees. For those who aren't familiar with the iconic symbol of Banff, the hotel has a long history, a luxurious feel and is about as close to a real castle as architecture gets in Canada. I was there a couple of years ago for another work-related conference, and I brought my sons there for the experience. My youngest was in awe, and said he felt like a famous movie star – it was a terrific experience they'll always remember.

I was impressed by the variety of topics offered this year. In addition to the latest research and scientific developments, there was also plenty of information on welfare, health issues, social licence to operate, and domestic and international economics and trade.

I had made a survey about the Western Hog Journal available at the Alberta Pork booth, and I did receive a few back with very encouraging results. However, I'd like to receive many more so you can look forward to the survey being printed in the spring edition of the magazine, and there will be a prize draw for those who return surveys.

As always, we look forward to your feedback. The special Banff Pork Seminar edition of the Western Hog Journal is a wonderful opportunity to share the information presented at the conference, and it is an honour to be a part of that. But as cohesive as our coverage of the seminar may be, it's my hope that readers will be encouraged to attend next year and be a part of it firsthand.

See you January 14-16 at the Fairmont Banff Springs Hotel! ■

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Photo by Terry Hockaday

The 44th Banff Pork Seminar was held at the Banff Centre January 20-22, 2015. There were 616 producers and industry partners from across Canada, the U.S. and other parts of the world in attendance to hear internationally renowned speakers talk about “Adapting and Evolving”. The Banff Pork Seminar is a success due to the support shown by industry partners who assemble to start new friendships and business relationships, and to learn and share ideas with our presenters and colleagues.

- The international pork trade continues to see changes, including a US industry that may expand slightly, whereas the Canadian one may not. Howard Hill discussed the changes that NPPC expects in 2015, including possible next steps in dealing with COOL.
- There continue to be advances in sow productivity research, and this year’s winner of the George Foxcroft Honorary Lectureship, Egbert Knol, focused on innovations in genetics to prepare for the future.

We have significant challenges in front of us. Several of these challenges were highlighted at BPS 2015.

- The challenge of social pressure related to animal welfare is getting stronger. Charlie Arnot from the Centre for Food Integrity discussed an approach to restore and maintain the trust of pork consumers. His presentation provided the Canadian industry with some ideas and key knowledge.
- Glynn Tonsor focused on “What will consumers really pay for happier pigs?” His presentation brought to light the answer may, in many cases be, ‘Not much more’.

Along with challenges come opportunities. There are changes happening in our industry that may provide opportunity, although the pork industry will likely face a more challenging year than last year.

- Kevin Grier indicated that Canada needs to be able to compete with the US in the cost of production.

The 2015 Banff Pork Seminar wrapped up with the Boar Pit Session. Last year’s session was dominated by the news of PEDv entering Canada. This year we know that PEDv still exists in Canada, but has not become endemic thanks to veterinarians, industry and government working together to highlight biosecurity and use good science to contain this major challenge our industry is facing.

The Banff Pork Seminar continues to attract world class presenters as a result of the excellent support of our sponsors and delegates. I want to thank the BPS Advisory Committee members and Conference Coordinator, Marliiss Wolfe Lafreniere, for their hard work and dedication to making Banff Pork Seminar 2015 a success.

In closing, we thank Banff Centre for the hospitality shown through the years. Also, I would like to thank the Western Hog Journal and agriculture media for their coverage of this year’s Banff Pork Seminar. This provides an opportunity to share the information presented at the seminar with those who were unable to attend. I know you’ll enjoy reading about the innovations, management ideas and successes in this issue. ■

Bob Kemp
Chair, BPS Advisory Committee

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DAY ONE PLENARY SESSION – Wednesday, January 21, 2015

By Terry Hockaday

Part one: Trust issue rises as lynchpin to pork industry future



Charlie Arnot, CEO, Centre for Food Integrity

The future looks brighter today for Canadian pork production than it has for several years. But there's a big "if" standing in the way that industry must tackle in order to fully capture the opportunities ahead.

That "if" centers on the rising buzz term 'social license,' says Charlie Arnot, CEO of the U.S.-based Center for Food Integrity.

With strong social license – a.k.a. public trust that translates

to freedom to operate – the pork industry is set to capture major growth opportunities. Pork is the most widely consumed meat product in the world. By 2022 annual per capita consumption is forecast to leap from 9.4 kg to 10.4 kg in the developing world and from 21.9 kg to 22.7 kg in the

developed world. Canada stands to gain on both fronts as a major domestic and export player.

However, without a strong and dedicated collective effort to support social license, the path ahead could include some major stumbling blocks.

"I truly believe it's a phenomenal time to be in the pork industry," says Arnot, speaking to a cross section of industry at the 2015 Banff Pork Seminar, attended by over 600 participants. "But it depends on social license. The opportunities ahead will only continue to be there if freedom to operate is continually earned and maintained. It's about trust. It's about transparency. It's about building and communicating an ethical foundation for our activity that aligns with consumer values."

Six keys to success

How can the industry accomplish this? Here are six insights, among many, offered by Arnot to the BPS audience.

1. Embrace transparency. "Transparency is an issue that we have a complex relationship with in agriculture," says Arnot. "We keep telling people 'We have nothing to hide, but it's none of your business.'" That needs to change, he says. "We're making progress and this needs to continue.

CONTINUED ON PAGE 10

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Transparency is going to be a key element in building trust as we go forward.”

2. Don't fear questions. The food supply today is safer, more available and more affordable than ever before. So why does the industry face such intense scrutiny? “A lot of the credit for the advances we have seen goes to the technology and systems that everybody in this room and others in agriculture and food around the world have implemented. Yet we continue to see those systems challenged every single day by consumers.”

Don't be surprised or frustrated, says Arnot. Industry should expect ever-rising scrutiny and learn to manage it. “We've been taught as a culture to be more skeptical of institutions as a whole and this is how the ag and food industry is viewed. Food is very personal when consumers have questions about nutrition, food safety and the impact of animal health products on their family – they take it very seriously.” This is a reality that comes with challenges, he says. But with it also comes an opportunity to develop a stronger understanding and relationship with stakeholders who are more engaged than ever before.

3. Trust, trust, trust – Make it top priority. Everything hinges on trust and addressing this concept needs to be a top priority in everything the industry does, he says. Freedom to operate is not only a privilege. Particularly in the new generation now emerging, it is the root foundation for everything from production efficiency to economic benefits. “It's really about protecting the industry's ability to do what it does best, with a minimum of outside interference. That depends on trust. If the public trusts us to do what's right they won't feel the need to impose more social control.”

4. Recognize the new market-based framework. Historically, social control was imposed through legislation

or regulation, but that is changing rapidly to a market-based framework, says Arnot. “What we've seen more recently is that social control is accomplished through the marketplace. Activists and others will put pressure on leading brands, and those brands will come back and say ‘we no longer want gestation stalls, antibiotics, or this product or process in our supply chain because of potential impact on our brand.’” This needs to be a core strategic consideration for the production sector, says Arnot. “This is the new environment and it has major implications for how we choose to engage going forward.”

5. Take charge of the economic opportunity. There's sometimes a perception that trust and related issues such as animal welfare or ethical sourcing are ‘soft zone’ trends somehow less important than the core economics driving the industry. But make no mistake, the two are inextricably inter-twined, says Arnot. “There's a compelling economic argument for the value of social license and it's getting clearer and stronger every year,” he says. The pork industry is granted a social license when it operates in a way that's consistent with the ethics, values and expectations of stakeholders. These factors continually evolve.

“As an industry, you need to keep ahead. Otherwise, whether as a result of a single incident or series of incidents, you cross a tipping point and you move to social control, which is always rigid, much more bureaucratic and higher cost.”

6. Communication is critical. Doing the right thing is essential, says Arnot. But just as important is telling people about it. “We need the stakeholders who control social license to understand that while our systems have changed and our use of technology has increased, our commitment to doing what's right has never been stronger. If you're doing things right, talk about it and take the moral high ground.”

Don't let activists drive the industry into reactive, defensive territory, he says.

“Rather than trying to bring them down, elevate yourself.”

Across the board, the pork industry can benefit from fresh thinking, he says.

“We typically like to talk science, but it's bigger than that. Shared values are three-to-five times more important than facts. That's where we need to focus.”

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Part two: Welfare issue won't derail positive outlook for pork industry



Dr. Glynn Tonsor,
Kansas State University

Market psychology is a complex subject, says agriculture economist Glynn Tonsor of Kansas State University. But one thing clear for the pork industry in today's environment is that consumers increasingly want to know more about how their food is produced.

That trend is particularly established in developed countries, says Tonsor, speaking at the 2015 Banff Pork Seminar. Most important for the pork sector and other livestock industries, it's driving a new market dynamic for the food system that brings significant economic implications.

"This is the new reality and the better we can understand and adjust to it the better equipped we will be to make the right decisions and succeed in this new environment," says Tonsor.

However, when it comes to the increasingly high profile issue of animal welfare, there are important factors to understand that lie beneath the large umbrella of the perceived general trends. "There's a lot more complexity than first meets the eye," he says.

Vote vs. buy disconnect

Research and survey results indicate the public is much more likely to vote in favor of either banning or limiting the use of particular production practices than they are to even say they will pay a premium, says Tonsor. "Also, when they say they'll pay a premium, the indications are that it doesn't mean they will. You have to cut that number in half or more to get a more realistic indication."

Economic reality

On the production side, changes driven by welfare pressures are expected to result in higher requirements for documentation and verification, as well as greater likelihood on a number of fronts for higher variable costs of production. "For example, if we have to reduce antibiotic use, partly because of animal welfare concerns and largely because of human health concerns, there will be higher cost at the end of the day because of the illness impacts."

The potential for higher fixed costs is arguably most relevant, he says. "For instance, as we move away from traditional building designs toward alternative space provisions, it's quite possible we'll have more expensive buildings." A key factor with infrastructure is the time allowed to prepare for and implement change. "It's a huge difference if you have to change tomorrow or if you can wait until closer to a time when you would normally renew."

A major X factor is the uncertainty that the animal welfare issue super-imposes over all facets of the industry, he says. "This is the part that doesn't get talked about as much, but is also very economically important. We don't know six months from now, five years from now, 20 years from now,

CONTINUED ON PAGE 12



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what will be the rules of the game. That added uncertainty and the risk it brings can mute the appetite for renewal and expansion.”

Understanding the ‘typical’ consumer

Another important yet often hidden factor is the heterogenous nature of the public, he says. “We like to talk about THE consumer, but that far over-simplifies the story. There are segments that can afford certain choices or will make certain choices based on welfare. However, the indications are the typical consumer is not willing to pay a premium for things like stall free, antibiotic free and so forth.”

The over-inflated perception that typical consumers are demanding welfare change can get into dangerous territory by contributing to the potential for imposed changes, he says.

“The challenge I have with this, as a free market economist, is there are voluntary labelling schemes out there that can allow market-driven change to occur. However, I get really concerned when we get regulations involved because you’re forcing the change on everybody and it may not be an accurate reflection of the market. “ This becomes an “unfunded mandate” that adds to the cost of doing business, he says.

Will consumers pay more for welfare?

In the short-term, it appears there is not a premium to be made for welfare friendly changes, says Tonsor. “If there was, we’d see a lot more voluntary differentiation and labelling claims on pork products. We’re not seeing that yet.”

One of the implications is that animal welfare changes are largely being ‘pushed,’ rather than ‘pulled’ into practice, he

says. “It would be a lot cleaner if the consumer clearly said they’re willing to pay a dollar more and those changes are funded and pulled in from the start. That’s not what’s going on.”

Big picture positive

The good news is that improving economic prospects for industry expansion are unlikely to be substantially derailed by the animal welfare issue and the added potential costs it represents, says Tonsor.

“There is a very optimistic sentiment today in the entire pork industry. I think we’re going to expand pork production throughout North America. I think we’re going to expand it a little less than if we didn’t have this uncertainty related to welfare and other social issues, but in the big picture animal welfare is a very small component of the broader economic story.”

At the end of the day it will be part of the cost of doing business in an overall very positive environment, he says. “All the major export players – Canada, U.S. and Europe – have the same issues to deal with so it will still be a level playing field.” ■

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BREAKOUT SESSION #1: Effective Staff Training

Train; Ingrain; Retain

Part one: How to Effectively Train In Spite Of Language and Cultural Differences

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It’s not quite that bad, yet, but with mounting labour shortages in both the Canadian and American agriculture industries, it’s getting there. Consequently, many producers have been forced to use foreign labour to fill the gaps. But as solutions go, it’s not without its problems. As Orlando Gil sees it, one of the greatest challenges is how to train workers effectively in the face of language and cultural differences. His company - TCTS Global - helps businesses bridge the gap with Latino talent, and his experience has taught him a lot about training and how to accommodate the unique needs of foreign workers.

Perhaps it’s true that “getting there is half the fun” and “life is a journey, not a destination”. In pig farming, however, “there” is a properly trained workforce that will keep your operation running smoothly and efficiently. Without it, your “journey” through the wonderful world of pork production will be short-lived. It makes sense, therefore, to plan your training the way you plan your trips.

What’s Our Destination?

To be deemed successful, a training program should equip employees with three main tools:

1. Skill: Whether it’s cleaning pens, adjusting feeders or monitoring sows farrowing, a worker must have the proper skills to do the job according to your expectations.

2. Knowledge: Since life on a pork farm doesn’t always unfold as planned, you need employees who can make the right decision when things go wrong.

3. Consistency: Not every worker can be a star, but they must be able to do consistent work that produces consistent results. This is a critical ingredient for success, and it comes down to developing the right habits.

How Will We Get There?


Depending on the task and the person doing it, experts say you need anywhere from 3 weeks to 2 months to create a new habit. They all agree on one thing though: It takes time to change or form a habit. That’s why it’s crucial to have a well-devised plan that includes enough time for employees to practice a task until it becomes second nature. Treat training as a process, not an event.

Where’s the Map?

Whether you’re a driver on a new road or a worker in a new country, it’s easy to get overwhelmed. Gil’s solution is a variation on the KISS principle: Keep it Simple and Specific.

Sure, you want workers to be productive from day one, but you also want them there for the long haul. The old adage about the shortest distance between two points being a


CONTINUED ON PAGE 14



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straight line applies here. Give them information relevant to their job and only as much as they need to get started. If you try to teach them everything at the outset, the only straight line will be that which runs in one ear and out the other.

Who's at the Wheel?

Early in his management career, Gil made the mistake of delegating the role of trainer to a seasoned employee. Instead of learning the basics and mastering the fundamentals, workers were taught secrets for doing the job "easier and faster". The result was an undermining of company guidelines and new staff that focused on shortcuts instead of proper procedures.

For Gil, the lesson was clear: Pass the wheel to someone else at your peril. If you wind up in the ditch, there'll be no one to blame but yourself.

"Detour Ahead"

In today's job climate, dealing with foreign workers is more the norm than the exception, and it should be treated as such. You don't need to overhaul your training program to address language and cultural differences. Instead, be open to other cultures, learn about them and adapt to them.

Show & Tell (& Do & Review)

A common training model these days is the "Tell, Show, Do, Review" method. But how do you tell someone the right way to do something if they don't speak the language? The answer is simple: You don't. And as Gil explained, that's a good thing.

According to research, people usually retain about 10% of what they hear, 20% of what they are shown and 70% of what they do. The lesson for trainers is that they should spend the majority of their time showing and allowing the trainee to practice the task.

In addition, Gil offered several suggestions to trainers for bridging the language and culture gap:

- Have specific procedures and protocols in place
- Obtain translated documents
- Treat training as an investment, not an expense
- Observe behavior to check for knowledge
- Use the Show, Do, Review method
- Have an interpreter to help communicate expectations
- Learn a few words in the trainee's language to "break the ice"
- Adapt, learn and be flexible
- Have patience, as training takes time

It may sound like a lot of adjustments are needed to train foreign workers, but the goal is the same for all employees – to create habits that produce consistent results and sustainable performance. As Gil put it, "people are people everywhere in the world, and a smile means the same in every culture".

Do the ends justify the effort? Given the current dearth of farm labour, the only alternative is relying on newly unemployed oilfield workers, so...yes.

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Part two: Building an Effective Team



Photo by Terry Hockaday

Whether your goal is the Stanley Cup or optimal farm performance, you won't achieve it without a strong team in place. Since the training and recruiting budgets for pork producers are generally less than in the NHL, it's important to get it right the first time. In his position as director of sow/nursery production at HyLife in La Broquerie, Manitoba, Richard Taillefer has seen how great

teams produce great results. And in the barn, as on the ice, it all starts with great training.

In Taillefer's experience, strong teams develop a synergy that enhances task knowledge, work load organization, time management and efficiency. The end result is better on-farm production and higher job satisfaction. So if excellent teamwork is such a powerful force, why doesn't everyone aim for it? Maybe they do, but like the former training program at HyLife, they often miss the mark.

Training: A How (not) to Guide

Previously, the training for new HyLife employees went something like this:

- Brief overview of the company on video and general review of the job and tasks involved.
- 1-2 hour orientation, including company policies and health and safety training.
- Directions to the farm and time/date to commence employment.
- Farm tour with barn manager who paired them with a more experienced employee for hands-on training ("buddy system").

From there, some workers were trained in one area of production while others rotated between different sectors. In neither case was there a formal checklist to record the tasks being taught or the worker's performance. After three months, employees were evaluated based on observations, word-of-mouth reports from other staff and general production in their department.

It looks okay on paper, but was less than satisfactory for many new workers. From the outset, the process was stressful, as just finding the farm itself down back roads and dead ends was often difficult. Upon arrival, they were quickly introduced to the shower-in procedure followed by a room full of new faces that could be quite intimidating.

Then it was on to meet their training "buddy" and begin the hands-on learning process. It was here that the stress level would increase considerably when farms were short-staffed and needed a fresh face right away. Instead of easing into their new role, employees were put to work with little explanation of how to perform their assigned task. Not surprisingly, this caused frustration for those who didn't catch on quickly, resulting in resignation or dismissal based on poor performance.

CONTINUED ON PAGE 16



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Not only was this process hard on the worker, but with the cost of employee turnover estimated at 50-75% of the person's annual salary, it was a huge cost burden for the company. In the end, money talked and HyLife listened.

From Bitter to Better

Something had to change, and for HyLife, it began with a new position that focused solely on training new employees and took a more structured approach to the training process:

1. The trainer meets the new worker on day one, takes them to the farm and guides them through the entry protocols.
2. The farm manager greets the employee and the three of them discuss a plan for the days ahead.
3. Over the next five weeks, the trainer guides the worker through a structured training program, progressing through a detailed schedule of daily tasks and goals.
4. During this period, the trainer assesses the trainee's capabilities, strengths and weaknesses to

determine which area of the farm would be most suitable for them.

5. Throughout the training, a checklist ensures that no aspect of the training process is missed.

Since incorporating this approach, HyLife has seen several benefits:

- Less pressure on current farm workers who lack the time and ability to train new employees.
- More systematic training that results in a better understanding of the job and more proficiency in learning and performing the new tasks. This also lessens the stress and frustration for both the existing staff and new employees.
- Less drag on farm productivity as the new worker needs less time to be a contributing member of the team.

Perhaps most significantly, the new approach led to greater job satisfaction, reducing employee turnover at HyLife by 32% and helping them achieve record production numbers in 2014.

For producers, taking the time to build a solid team by training new workers properly is a good investment, as it accelerates the learning curve and improves worker efficiency, retention and production. Sure, they may never win a Stanley Cup. But then, unlike some long-suffering Canadian hockey teams, no one expected them to. ■

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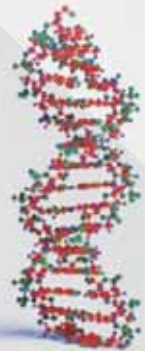


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BREAKOUT SESSION #2: Genetics for the Future

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Part one: New Approaches and Tools for Genetic Selection



Photo by Terry Hockaday

Of all the issues facing the pork industry today, few can match the power and potential of genetics. As our knowledge of genetic technology continues to expand, so too does our interest in what it's all about and

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See page 4

how it can benefit us. As Director of Genetic Development for PIC, Dr. William Herring leads the global genetic improvement program for PIC's product portfolio. His experience makes him uniquely qualified to address the complexities of genetic selection and help to demystify the process for the layperson.

According to Dr. Herring, before we can fully appreciate the science of genetics and where it's headed, we first have to understand where it came from.

Seeds of Knowledge

The idea of selectively breeding plants and animals to produce new and improved hybrids has been around for thousands of years. But with the mechanisms governing inheritance largely unknown, the process was "hit and miss", with emphasis on the latter.

That all changed with the research of Gregor Mendel in the 19th century. Using common pea plants and experimenting with selective cross-breeding over several generations, he demonstrated that certain traits could appear in offspring with no blending of parent characteristics.

Though his research centered on plants, the underlying principles of heredity he discovered are equally applicable to all complex life forms, be they people or pigs.

PIC of the Litter

Like many businesses, the pork industry has embraced the ability of genetics to boost the bottom line, and, as Dr. Herring explained, PIC has been at the forefront of that effort. Through their work in research and application of genomic technologies for genetic improvement, PIC has effected small increases in the rate of genetic change over the years.

Now that more powerful and cost effective technologies are emerging, the opportunity to make genetic alterations has never been greater.

Dipping into Chips

These days, technology is improving at a dizzying pace, and the same applies to genetics. Until recently, cost and availability limited us to panels of just a few DNA markers. But that changed in 2009 with the emergence of a new genotyping chip.

Essentially, genotyping is the process of determining differences in the genetic make-up (genotype) of an individual by examining the individual's DNA sequence and comparing it to another individual's sequence or a reference sequence.

The new chip allowed for quick descriptions of approximately 60,000 porcine genotypes with a high degree of accuracy. At roughly \$150 per animal, the chip was not cost effective initially. But like Blu-ray and HD TVs, the price of this high tech device is gradually getting more accessible.

Numbers Game

Of course, as anyone who has wrestled with that encyclopedia that accompanies your new TV (also known as the "owner's manual") will tell you, technology must be used properly to reach its full potential.

That explains the excitement around a new method for deploying the chip, known as relationship-based genomic selection (RBG). Previous approaches to genotyping assumed that the sow and boar each donate half of their genetic material to their offspring. While this holds true on average, Herring held up a photo of a litter of pups and pointed out that no two look exactly the same. That's because the percentage of genes that

offspring share in common actually ranges from 30% - 70%. Using RBG, we can individually estimate the gene segments that any two animals have in common. By improving the accuracy of selection, this approach allows for targeting of specific areas of production that most impact the bottom line, such as feed efficiency and pigs per sow per year. Specifically, Herring and PIC expect a 35% increase in year-over-year genetic improvement.

Science is all about numbers, and the one that will matter most to producers is \$.71. That's the additional annual gain associated with enhanced selection ability, for a total of \$2.73 per pig per year in genetic improvement. Even if a lot of the genetic terms leave you tongue tied, those are numbers you can really sink your teeth into.

Don't Stop Thinking about Tomorrow

As far as the science of genetics has come, the future holds even greater promise. Emerging technologies like genetic sequencing, gene editing and surrogate sires will further advance this field over the next 5 or 6 years. Herring predicts that "we're going to go faster than we ever did before, and hopefully that's a good thing."

Time will tell, but as long as pig genes put more money in producer jeans, who's going to argue?

Part two: Are Genetics up to the Challenges in North America?

A long-winded title, but what else would you expect from a cross country runner? Dr. Egbert Knol of TOPIGS Canada Inc. currently serves as Vice President of the Pig Commission of the European Association of Animal Production. Since the true test of any technology is how well it performs under pressure, Dr. Knol looked at some key challenges facing the pork industry today and how genetic variation can help us deal with them. And in fairness, he didn't pick the question that comprises the title. He just did his best to answer it.

Just as producers must adapt to changing circumstances to survive, breeding programs that use genetic selection can foster adaptability in pigs. In the process, genetics may support the primary aim of pork production; namely, to be sustainable for people, the planet, the animals and the producer. Doing so, however, means tackling a number of issues that impact our industry.

CONTINUED ON PAGE 20



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What's the Problem?

1. Disease: The relationship between host and pathogen is a classic example of genetic adaptation. As new diseases like PED and PRRS emerge, the animals and the illness must adapt to each other and eventually strike a balance. If they don't, either the disease is eradicated or the host population becomes extinct. Fortunately for producers, Knol's focus is on the former.

2. Climate and Environment: Animals must adapt to local environments in a number of areas including temperature, humidity and seasonality. There is much debate as to whether we should adapt animals to the environment or adapt the environment to animal needs with acclimatized barns and artificial light.

Another aspect of environment is the people who care for the pigs, and it's one of the most difficult to control. As Canadian producers have experienced with the ever changing Temporary Foreign Worker Program, maintaining a steady pool of quality employees is a constant challenge.

3. Society: While consumers love the image of a pig rolling in the mud or roaming free on a family farm, they are less enamored of large scale commercial production. Their concerns range from "animal to human" transmission of disease to worries about animal welfare. Knol acknowledges those concerns while also recognizing the challenge of giving consumers high quality pork free of growth promotant remnants and raised in large open spaces, all at a very low price to the public.

4. Protein Power: If the goal of vegetarians is a healthier life, why do some of them look like death? The answer may be amino acids or a lack thereof. They're the building blocks of the protein that humans require, and the ratio of amino acids in animal protein meets our needs much better than that of plants. So it's little wonder that the global market

for animal protein continues to grow, placing ever greater demands on production.

What's the Solution?

Knol outlines a few salient points to address:

- Some infections can spread from animals to humans, and solutions lie in the number of animals per location, barn layouts and ventilation systems, among others.
- Pig feed ingredients must be altered to avoid competition with human nutrition and other livestock feed.
- We need to house finishing pigs so as to promote their wellbeing, please society and preserve a future for producers.

How Do We Get There?

1. Genetics: The focus of breeding companies is on increasing the overall efficiency of pork production through the following:

- Lowering the cost and boosting the uniformity and quality of piglets.
- Addressing growth potential, fat accretion and feed conversion.
- Improving the quality of the final pork product.

While his numbers vary somewhat from Dr. Herring, Knol places the current rate of genetic improvement at \$2 per finishing pig per year and foresees an increase to \$3 in the not so distant future.

2. Use of Data for Local Adaptation: Each production environment has its own challenges, and the same genotype responds differently under diverse levels of challenge. As farms get larger and better equipped with technology, data

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exchange with breeding companies is gaining acceptance. Consequently, genetic selection under varying conditions will produce somewhat different animals, even when the breeding goal of each is the same: Attaining the lowest possible cost/price of pork.

For example, selection under heat stress will likely increase appetite, while selection under high health will decrease it.

Speaking of heat, selection for heat tolerance might be of lesser importance in Alberta but a necessity in Arkansas.

3. Understanding Pig Behavior: An animal's performance depends both on its own genes and those of its pen-mates. Genotype can influence other animals either positively (high social pigs) or negatively (low social pigs).

In general, high social pigs exhibit more aggression and a lower stress response than their low social counterparts. As a result, pens with high social pigs will benefit from reduced stress levels and less biting and tail damage.

4. Piglet Quality Research: Piglet quality upon entering the finishing phase is critical to the bottom line and most influenced by birth weight. Knol therefore recommends focusing more on intra-uterine development than on correcting a low birth weight piglet after the fact.

At the same time, litter weight and average birth weight are quite heritable traits and thus, quite repeatable. Since the genetic correlation between litter size and birth weight is negative, breeding companies must find a balance between the two. Current research is focusing on uniformity in birth weight, though Knol has to stifle a laugh when people ask if he can give them more uniform pigs.

"Well...which one do I base it on?"

What Now?

Knol foresees that pork producers and breeding companies will work closely in the years to come. Populations will be selected based on the crossbred performance in particular production environments. In light of this, the producer, breeder and consumer must collaborate to create environments that society finds acceptable. Adapting the animals to that environment is then a straightforward selection process.

When you consider the rate of progress with genetics, the possibilities seem endless. So the next time you're asked to do something outrageous and you say "when pigs fly", be careful. That day may be closer than you think. ■



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BREAKOUT SESSION #3: Optimizing Breeding Herd Efficiency The Ins and Outs of Boar Breeding

Part one: Boar Fertility and Boar Breed Management

If you thought it was awkward having that “birds and the bees” discussion with your kids, try adding artificial insemination (AI) to the mix. For the modern pork producer though, AI is simply a fact of life. And like any aspect of business, the more you know about it, the more effective you can be. In her capacity as boar stud consultant at the Minnesota Swine Reproduction Center, Hanneke Feitsma advises on changes in semen production processes to reduce sperm cells per dose and improve efficiency. Fortunately for her audience, she feels that new ideas, like sperm cells, are meant to be shared.

With AI use exceeding 95% in the modern pork industry, its impact can't be overstated. The degree of impact will vary, however, depending on several factors:

- Fertilizing capacity of the semen (boar fertility and semen quality)
- Number of sperm per dose
- Sperm cell survival rate while stored
- Number of inseminations per estrous cycle
- Timing of the insemination relative to ovulation
- Insemination technique used

One way to boost the efficiency of AI is by reducing the sperm cells per

dose. To do so requires an increase in the fertilizing capacity of semen, a process that hinges on three main variables:

1. Hygiene: We make our kids wash their hands to avoid bacteria, and the same applies to boar housing and the lab. Poor hygiene in either place can contribute to bacteria in

CONTINUED ON PAGE 24



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semen doses, causing faster degeneration of sperm cells and, thus, a shorter shelf life. Identifying contamination points and taking adequate measures is essential, with special attention paid to boar and collection hygiene.

Surprisingly, semen collectors often underestimate the importance of the collection technique. To avoid contamination, proper collection is a key element, including appropriate design of boar housing and collection facilities. For example, a properly designed dummy sow will feature an accessible bottom for ease of cleaning.

The same principles apply to AI laboratories. They should be thoroughly cleaned and disinfected after each production round, a process made more difficult as the surfaces, material and equipment to clean increases. As well, the ceilings, walls, floors and countertops should be seamless and resistant to corrosion.

2. Variation in viable sperm per dose: High variation in number of sperm cell per dose poses a risk for sperm cell reduction. The variation has three main causes:

- Accuracy of sperm concentration assessment, which depends on the method used. Direct techniques such as flow cytometry, automated fluorescence and computer-

assisted semen analysis are the most precise, while indirect methods like light absorption are less so.

- Skill level of the technician is critical in determining the accuracy and repeatability of the assessment, so those skills must be taught and re-taught. Standard operating procedures are needed to guarantee reliable results.
- Dilution and “bagging” process. Sedimentation of sperm cells is relatively quick and easy to anticipate, yet there have been instances where the time from the start of production to filling of the last semen dose exceeded 40 minutes. As this caused a sperm cell variation per dose of over 10%, it's important to pay strict attention to mixing of the semen in the batch during production.

3. Temperature fluctuations of semen: In transport, semen is like that neurotic aunt who keeps fussing with the thermostat: Temperature sensitive. Below 15° C, irreparable damage to sperm cell membranes can occur. On the other hand, higher temperatures keep the semen active, causing it to use more energy and experience a shorter shelf life. In light of the climate conditions and long shipping distances involved, the North American industry must find better solutions for temperature control.

Monitoring

With all of the factors affecting semen quality, monitoring is essential to determine at what quality level a boar stud operates. Whether performed in-house or at reference laboratories, it requires properly calibrated equipment to be effective.

To achieve a higher impact from AI boars in North America, we must reduce the number of sperm cells per dose. This is only possible if the quality of the production of the doses improves significantly, and for that, the management and staff of boar studs must commit to long-term improvement. While it will slightly increase production costs per dose,

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it will more than compensate with higher fertility results, longer shelf life, more efficient semen production and offspring with a higher genetic value.

Ultimately, the biggest difference will be increased profitability for the system. One thing that won't change, however, is the awkwardness of adding AI to that facts of life chat:

"Sometimes when a boar and a dummy sow fall in love..."

Part two: Experience with a Post-Cervical AI Program in a Production System

Boars and humans have one thing in common: The elite ones tend to generate the most money. But only one of the two can make even more when subjected to post-cervical artificial insemination (PCAI), and it's not the human; at least not yet. Dr. Julie Menard knows this only too well. As breeding herd director at F. Menard Inc, an integrated sow breeding company, she sees the benefits of this approach on a daily basis, and she had some timely advice for those who wish to implement it in their own operation.

Why Try PCAI?

The short answer: To make more money. The goal of any production system is to maximize revenue by achieving the highest performance at the lowest cost. Making optimal use of elite boars can help you do that, in part through the use of PCAI.

Because the volume and sperm concentration is lower in PCAI than in standard doses, more doses can be produced from the same boar. This results in a greater production of high quality piglets with fewer boars on inventory.

What Have We Learned?

Based on numerous tests, researchers have identified some key benefits of PCAI:

1. It speeds semen preparation by eliminating the need to warm the semen dose.
2. Inseminating a sow takes half as long as with the standard technique.

CONTINUED ON PAGE 26

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3. There is a reduction of semen backflow. Even to the layman this sounds like a good thing.
4. It allows you to get the most out of boars with the highest EBV (estimate breeding value).

Some FYI for PCAI

The advantages are numerous, but so are the potential pitfalls. In particular, Dr. Menard advised producers to focus on the following:

1. Heat detection: Proper heat detection is crucial for optimal insemination timing and reproductive results. Introducing the post-cervical cannula too early or late during estrus can bend the cannula, damaging the cervix and triggering bleeding or infection.

2. Boar exposure: In both PCAI and

standard AI, the boar is essential to detect the start of the estrus. With the former, however, your boar's presence in front of the sows during insemination will induce closure of the cervix. Ideally, expose females to boars within 15 minutes of insemination, leaving the cannula in the sow during that period.

3. Optimal timing of insemination:

For the best results with the minimum doses per standing heat, you must inseminate sows when they respond to the "back pressure test" without the boar present. It may be a bad time for a "selfie", but it's the optimal timing for insemination.

4. Insemination technique: Whoever said "timing is everything" missed a vital element: Technique. When the PCAI cannula is introduced, anatomical differences must be considered.

Parity 2 sows have a short, tight cervix, slowing the AI process. With old parity sows, semen backflow is more common, so you must let the uterine contractions draw in the semen dose rather than pushing it in.

As well, it's crucial to position the cannula properly so that the two openings can distribute the sperm equally in the two horns. ■

Finally, Dr Menard stressed that PCAI can't be used in gilts due to their small genital tract. They require a standard cannula with a 3 x 109 sperm/dose, whereas parity 2 and plus sows need an intra-uterine cannula at 2 x 109 sperm/dose.

Walking the Walk

Dr. Menard didn't just talk a good game. Starting in 2007, she applied the PCAI technique to all 19 of the company's breeding herds. Since then, the results have steadily improved. Reduction of sperm and volume per dose did not affect the reproductive results, spurring Dr. Menard to implement the reduced semen dose on all sow farms.

Given the research findings and real-life results, PCAI is a promising alternative for making the most of genetically superior boars within a production system. All else being equal, the main determinant of success or failure with this technique is the training and quality of the breeding technician. So hire good people, set them up for success and let simulated nature take its course. ■

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BREAKOUT SESSION #4: Emerging Production Systems

Dealing with Drugs

Part one: Considerations for Raising Hogs Without Antibiotics

These days, consumers are demanding more and more from those who produce their food. As a result, niche markets like “locally produced” and “humanely raised” are growing in popularity. One area of particular interest to the public is meat raised without antibiotics. It presents a unique opportunity to differentiate your product, but it’s not for everyone. To help producers decide if it’s something they’d like to pursue, LeeAnn Peters, Director of Technical Services for Maple Leaf Foods, outlined what’s involved with diving into antibiotic free (ABF) production and how to make the most of it if you take the plunge.

When Peters met with her regular group of “professional” friends a year ago – the ones who never ask her about her job – and they spent the next hour discussing how food is raised, she knew that times were changing. And when they shared their dismay at “bacon being raised in a crate”, she knew she had her work cut out for her.

With challenge comes opportunity, but it comes at a price. Switching to antibiotic free production will cost about \$4.40/cwt or \$11 per pig depending on the number of pigs in the program. So it’s important to know what you’re getting into.

Are You Certifiable (in a good way)?

According to the Canadian Food Inspection Agency (CFIA), to market hogs as “raised without antibiotics” they must not

have received any antibiotics from birth to harvest and no antibiotics may be administered to the mother that would cause residue in the animal.

Furthermore, both the farm and feed mill must have well written standard operating procedures and protocols (for which their staff is trained) and keep meticulous records. All feed system components must be clean, inspected and approved before commencing ABF production. And it doesn’t end there. Following initial certification audits by a third party- approved auditor, producers must submit to ongoing audits on an annual basis.

Just the Factors Ma’am

Anyone who has witnessed a streaking senior citizen will agree: Just because you CAN do something doesn’t mean you should. When pondering a move to ABF production, there are a number of factors to consider:

- 1. Owned vs. Contract:** Though it’s possible to employ ABF on contract sites with the right approach, owning the facilities and directly employing the labor is the lowest risk model.
- 2. Genetics:** Certainly good genetics can’t overcome bad management. That said, it appears that herds with a “hardier” genetic background may have more success under an ABF program.
- 3. Health Status:** Before converting your operation, you must have a clear picture of your pigs’ health status to help you design a vaccination program. Success with ABF is all about prevention and having a vaccination plan that matches the bugs threatening the animals.

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5. Environments and Equipment: "I'm amazed at how many people try to wash wood," said Peters. In other words, barns must be easily cleaned and disinfected. The ideal scenario is an all-in-all-out operation constructed of concrete, PVC and metal. Be prepared to thoroughly wash and disinfect between batches and confirm that the ventilation system is in good working order.

6. Staff: Whereas Peters' daughter lays out all her new Lego pieces with the instructions and assembles it systemically, her son leaves it scattered throughout the house. What's the moral of the story? Properly implementing ABF requires a manager with an eye for detail who keeps impeccable records, notating and validating incoming feed and ensuring that individually treated pigs are ear tagged, removed from the program and recorded.

Most of all, there must be staff who can look at a pig that may require treatment and decide whether to remove it from the program or wait and re-evaluate tomorrow. According to Peters, "it's a delicate balancing act that will make or break you."

Oh, and don't buy her son more Lego.

Performance Anxiety

To maximize performance under an ABF system, the key is to minimize stress on the animals:

1. Weaning Age: If practical, wean pigs at a slightly older age (over 20 days) to reduce stress and promote better growth.

2. Nursery Diet: Three points to consider here:

- 1) Oat hulls, potato starch and barley seem more palatable than corn and wheat based diets.
- 2) Reduce the protein level to 17-18% to reduce scouring.
- 3) Consider restricting feed (3% of body weight) for the first 5 days after weaning.

3. Stocking Densities: Where possible, provide increased floor space with ample access to feeder spaces and water nipples, especially in the nursery.

4. Sanitation: Maintaining a low bacterial load in the barn is crucial to an ABF program, so review your sanitation program thoroughly.

5. Rodents: People often tell Peters that they only have one mouse. "That's never the case," she said. "Where did that one mouse come from?"

You should have a formal rodent control program that includes regularly replacing bait and changing products periodically to get the best control.

6. Sick Pigs & Program Removals: Sick pigs that have been tagged and treated should be removed from the general population and placed in sick pens to limit the

CONTINUED ON PAGE 30

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exposure of healthy pigs still on the program. As Peters explained, “for the sake of the animals, the industry’s reputation and the integrity of the ABF program, animal welfare must come first.”

Pivotal Points

Making a move to ABF has its merits, but there’s a lot to think about first. Peters concluded with some key points:

- You must plan everything out carefully to be successful.
- ABF is very unforgiving; respond to threats immediately.
- Commit to continuous learning and improvement. Always look for ways to be better at what you do.

After all that, if you decide to proceed with ABF, not only can it be very profitable, but it’s something that you, your family and your employees can be proud of.

What would Peters’ “professional” friends say to that?

Part two: Antibiotics as Growth Promoters vs. Therapeutic Agent in Modern Pig Production



Raising animals without antibiotics is one option, but’s it not the only option. Where LeeAnn Peters focused on the specifics of the antibiotic-free approach for producers, Dr. Leigh Rosengren (Rosengren Epidemiology Consulting Ltd.) took a big picture approach to the issue of antimicrobials and the view from the consumer’s chair.

When it comes to antibiotics in food, there’s no shortage of opinions amongst the public. There is, however, a lack of

knowledge. As an example, Dr. Rosengren pointed to an ad on an “independent educational website” with a cow and the message “just say no to antibiotics in our meat”. While she’s all for free speech, she had one suggestion: “Don’t use a dairy cow!”

With that in mind, she proceeded to offer some real education on the subject.

Threat Assessment

In the proper context, antibiotics are invaluable drugs. The controversy arises when things go wrong. Such is the case with antibiotic resistance, where a drug fails to kill or suppress bacteria at a normally active concentration. Fortunately, while resistant foodborne pathogens are the most direct hazard linking swine production and antibiotic resistance in people, it’s a long chain of events from antimicrobial exposure in a pig to a human illness exacerbated by resistance. Because one missing link will break the chain, we rarely see that outcome.

Pork Stewardship

In spite of the low food safety risk posed by resistant foodborne bacteria, the danger does exist. Pork producers must therefore assume antibiotic stewardship, which Dr. Rosengren defines as the “responsible use of a shared resource”. Sometimes, the proper use is for disease control and prevention, though the public may not see it that way. And if they have qualms about that, the use of antibiotics as growth promoters makes them downright nasty. It puts producers in a difficult spot, where there often are no easy answers.

Spare some Change?


Canada’s regulations around veterinary antibiotics are similar to the United States. Both are in the process of making changes. Currently in Canada, antibiotics can be included in feed without a prescription provided that specified label directions and indications are followed.

Veterinary medicine, including antibiotic use, is governed by provincial regulations. While regulations vary among provinces, they must be equivalent to, or stricter than, the federal regulations.

On the subject of over-the-counter access to antibiotics, inter-provincial talks are underway and several Canadian industries are developing position statements. Yet given that similar stakeholder discussions have been ongoing for over a decade now, holding your breath on this one could prove hazardous.

A Class System


Antibiotics are divided into classes based on how they work and the types of bacteria they combat. Each class is then assigned to one of four categories:



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I. Highly important antimicrobials (Category 1): These are used to treat serious disease and lack alternative treatments if resistance develops. The ones licensed for use in livestock require a veterinary prescription.

II. Growth promotion and medically important antimicrobials (Categories 2-4): Antibiotics are medically important if the class is used in humans, even if the veterinary formulation is not. In 2013, after four decades of resistance, the FDA moved to ban the use of medically important antibiotics in feed for the purpose of growth promotion or production. American veterinary pharmaceutical companies voluntarily removed these label claims, and while the word “voluntary” sounds all warm and fuzzy, this wasn’t like dishing out meals at the local soup kitchen. “They could see the writing on the wall,” said Rosengren.

In 2014, Canada’s pharmaceutical industry “voluntarily” initiated similar changes.

Social License – Will We Use it or Lose it?

Although public concern about antibiotic resistance has opened the door to a “raised without antibiotics” approach, communication is a challenge for the industry as a whole. Complex science, fuzzy links between on-farm use and human health, and few parallels to antibiotic use for human disease prevention are just three of the stumbling blocks. As it tends to do, media has jumped on these deficiencies, questioning agriculture’s social license to use antibiotics.

But media attention could have a silver lining if we use it to explain how antibiotics protect animal health and welfare, and how we employ vaccines, biosecurity and nutrition to prevent disease.

Looking ahead, Dr. Rosengren stresses the telling of good news stories and sound stewardship by producers in using the right antibiotics for the right reasons. “That will influence regulators and affect our ability to use antibiotics in the future.”

Considering that only 2% of Canadians live on farms and 98% have no idea where their food comes from, Dr. Rosengren proposes a few key messages

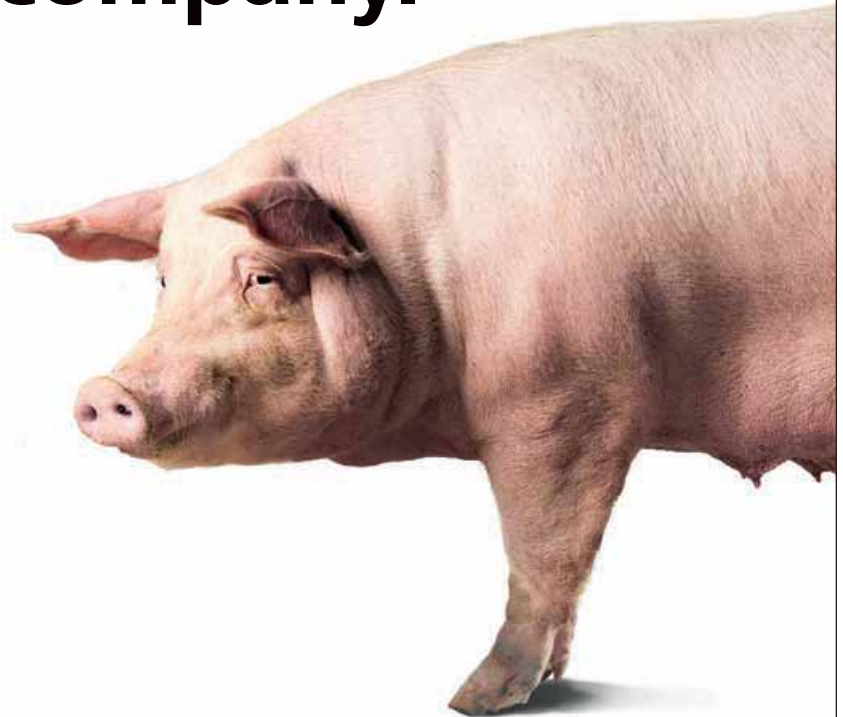
delivered in plain language:

1. Pigs get sick
2. Sick animals need medicine
3. Producers understand stewardship

It may seem like talking down to your audience, but then again, these are the same people who tried to get meat from a dairy cow.

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Honours and awards at the 2015 Banff Pork Seminar



Lyle and Maaika Campbell of Birnam Pork, Arkona, Ontario
Photo by Terry Hockaday

Aherne Prize winners announced at Banff Pork Seminar 2015

The F.X. Aherne Prize for Innovative Pork Production at the 2015 Banff Pork Seminar in Banff, Alta. will be shared this year, recognizing two impressive hog innovations.

Lyle and Maaika Campbell of Birnam Pork, Arkona, Ont. won for an innovative piglet weigh scale which boosted profitability in that operation. And Greg Feenstra and Dave Uttecht of Heartland Pork, LLC in Alpena, South Dakota,

U.S. won for their “EZ Tub” hog handling innovation which significantly reduces stress on animals and people.

“Innovation is always fascinating and this award is one of the most popular aspects of the annual Banff Pork Seminar,” says Dr. Michael Dyck of the University of Alberta, chair of the F.X. Aherne prize committee. “The prize recognizes those individuals who have developed either original solutions to pork production challenges or creative uses of known technology.”

The award 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 Campbells’ innovative solution to weighing young piglets was low cost and had a direct benefit on their bottom line. Birnam Pork produces weaned piglets that excel in the grower-finish phase of pork production. They needed some way to weigh those piglets so they could ensure they were meeting marketing objectives and getting paid for their efforts.

Their scale was built onto a lightweight base that is easily transportable and washable. A lightweight container on top is tall enough that 18 day old piglets won’t jump out, but low enough to be reachable. It features a tray to carry spray markers and a spot to collect sow cards. The scale design allows for numbers on the scale to be viewable from all sides. It is flexible enough to use with smaller piglets and can be used to calibrate feeders.

Greg Feenstra and Dave Uttecht of Heartland Pork designed the E Z Hog Tub hog handler. It helps reduce stress on pigs and people during loading, produced faster

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Animal handling and welfare are major concerns for the pork industry. Research shows pigs need time to flow through alleyways. The primary cause of stress when moving animals through an alleyway is that handlers have a tendency to move too aggressively, crowding pigs to encourage movement. That causes animals to bunch up and balk at transitions such as doorways.

The E Z Tub circular tub-style design works with pigs' natural response patterns to aid in the loading of market hogs. The pen and gate configuration lets the handler work where hogs can see them and uses the pigs' circling behavior to set up a flow onto the trailer. That reduces stress and produces fewer discounts for injured animals at the packing plant.



Greg Feenstra (left) and Dave Uttecht of Heartland Pork, LLC in Alpena, South Dakota
Photo by Terry Hockaday

CONTINUED ON PAGE 34

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Dr. George Foxcroft (left) and Dr. Egbert Knol, Topigs Norsvin Canada

2015 Foxcroft Honorary Lectureship: Dr. Egbert Knol

Each year one speaker at the Banff Pork Seminar is there as part of the legacy of Dr. George Foxcroft, 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,” says Seminar co-program chair, Dr. Michael Dyck of the University of Alberta.

“I am pleased to recognize Dr. Egbert Knol as the 2015 recipient of the Foxcroft Lectureship,” he says.

Knol comes from TOPIGS-Norsvin in the Netherlands where he’s a research director and has a unique type of cross assignment between the breeding company and academics.

“Dr. Knol has made many contributions to animal breed and breeding management having worked to understand and select for important production traits including piglet survivability, maternal traits and mothering ability including teat numbers and many aspects of reproductive performance.

“Based on the quality of his research, and the contributions he has made to the swine industry, he is being recognized with this award.”

Student science winners at BPS 2015

Two student scientists were announced as winners of the R. O. Ball Young Scientist award at the 2015 Banff Pork Seminar.

Dr. Ron Ball, whom the award is named after, is 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 Natalie May of the University of Alberta for her work on identification of seminal plasma proteins associated with boar fertility.

Second prize went to Janelle Fohuse of the University of Alberta for her paper on starch and fibre characteristics of barley, which influence energy digestion in grower pigs.

First place winner receives a \$500 cheque and plaque and second prize receives a \$250 cheque and plaque. ■

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Scenes from the Seminar

**Photo credits to Terry Hockaday and Sheri Monk*



The beautiful Rocky Mountains can be seen in the background of this photo. While the venue is changing next year, the view will remain spectacular.



The Kinnear Centre for Creativity and Innovation has long been a part of the Banff Pork Seminar, but next year, the seminar is moving to the Fairmont Banff Springs Hotel.



After a long day of info-packed breakout sessions, attendees appreciate the opportunity to share a cold one with friends.



The registration desk was busy, but not nearly as busy as the people who spend untold hours preparing to make the Banff Pork Seminar a smashing success. Thanks for your hard work!



Sponsors are an important part of the Banff Pork Seminar and help keep costs down for attendees. As usual, the booths were hotspots of activity during networking times.

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DAY TWO, MORNING PLENARY - Thursday, January 22, 2015

By Terry Hockaday

Part one: Markets promising for new-look Canadian pork industry

Glass half empty or half full? Prospects bearish or bullish?

While major factors on both sides of the equation are battling for influence, there are more reasons for optimism in Canada's pork sector - including both production and processing fronts - than there have been for some time, says leading market analyst Kevin Grier, speaking at the 2015 Banff Pork Seminar.

"The industry is really entering a new era," says Grier. "It's a much different industry than it was in the past. We've got some issues, but many are short-term. In the big picture, I do believe we are globally competitive. Just how competitive we are can and does fluctuate. But we have to remind ourselves that we enjoy many advantages that are the envy of pork producing regions around the world."

Driving forward on export wave

The Canadian pork industry has undergone tremendous transition and has now emerged with a new-look, streamlined profile.

"The industry has gone through an awful lot in a short period of time. It's a smaller industry. It's

an industry that is varied in terms of the packer capacity. Competition is varied and depends on the time. But market potential looks good domestically and is particularly promising both short and long-term for export."

Globally the trends are more people to feed - at a pace of 75 million annually - and rising incomes. "Those trends will continue. The result is that demand for meat is far out-pacing production. Canada remains by nature an export nation for pork and there are clear opportunities."

CONTINUED ON PAGE 38



Kevin Grier, Kevin Grier Market Analysis and Consulting Inc. Photo by Terry Hockaday

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Busting barriers

Still, there are important hurdles and issues to tackle, he cautions. Some are self-imposed. Some are hard to change but can be better managed. Others are simply critical to fully recognize and factor in appropriately as part of industry strategies.

Canada's processing sector faces different capacity utilization issues across the country results in highly variable competition. "One major concern is that our packer margins are consistently worse than in the U.S.," says Grier. For production, obstacles include core economic challenges such as currency value fluctuations and the ethanol factor, along with restrictions such as animal welfare codes driven by social pressures and the influence of outspoken fringe groups. Global trade disruptions are always a threat, with Mandatory Country-of-Origin Labeling (mCOOL) standing as a leading current example close to home.

Cautionary optimism in order

Despite the challenges, a standout factor in Canada's favor is the resiliency the industry has shown during tough times. "It's pretty astounding what we made it through with the margin situation from the back half of 2006 to 2012. Now

2014 was a good year and we are moving forward." Today the industry is in a much better position and the strength it has shown bodes well for making gains in a much better environment, he says.

"One thing we can't do though is let our guard down," cautions Grier. "It will take time to get balance sheets back in shape from that long tough stretch we endured. The industry is 25 percent the size it was in 2005 and we've seen tremendous consolidation. As it stands today, Canada is the world's sixth largest pork producer and 3rd largest exporter. We're maintaining our markets and as they grow we can grow too."

A full 40 percent of the sow herd in Canada is in five hands and 40 percent of slaughter capacity is vertically integrated, owned by packers. "Is this good or bad for competition? I would say competition is transitory and that's the nature of our industry today. It ebbs and flows."

A big factor standing strong, though sometimes taken for granted, is the unique and inherent advantages of pork production in Canada, he says. "We have an abundance of fresh water and arable land. We don't have the level of health issues that every other pork producing country in the world has to deal with. We don't have the animal density issues that the U.S. does."

Concerns have included the performance of packers and dependence on the U.S. market, but much of this is more myth than reality, says Grier. "Our packers know what they're doing and our pork goes to the highest priced market based on ongoing calculations that change day by day and sometimes hour by hour."

"As for the U.S., what's wrong with shipping to the richest market in the world?" he says. The numbers comparing all facets of pork production among leading global players indicate Canada is comfortably healthy and competitive both as a pork production region and a leading player in global markets.

Part two: Canada and U.S. share interests

Canada and the U.S. pork industries are on the same page on key issues and can help each other drive progress in the face of international pork trade challenges, says Howard Hill President, National Pork Producers Council.

This includes controversial, close-to-home challenges such as unpopular Mandatory Country-of-Origin Labeling (mCOOL) legislation. "Let me be clear – the U.S. pork industry is not in favor of mCOOL. It stands for cost, confusion. And there is an unapparent need"

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The two neighbours and leading pork exporters also share a mindset for continual improvement, he says. “U.S. and Canadian pork producers are continuously raising the bar to increase quality, lower cost and increase productivity. As a result, both countries have an abundant supply of high quality safe pork that can be exported to the nations in need of more meat protein.”

International trade issues and related frustrations can be overcome, he says. “As pork producers, we need to be diligent in fighting for fair legislation and regulations, including legitimate FTA’s that will continue to allow us to expand our industry and provide the world with an abundant supply of pork.”

Challenges in addition to mCOOL such as the sharp fall off of the Russian pork trade, trade disruption by China and Japan’s recent failure to comply with the Trans-Pacific



Howard Hill, National Pork Producers Council – Photo by Terry Hockaday

Partnership (TPP) are ultimately speedbumps on a positive pathway ahead, he says. “Regardless of the challenges international trade of pork faces, the rewards are worth the effort.” ■

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BREAKOUT SESSION #6: PED Update

PED – It Came, It Killed, But Did it Conquer?

Part one: Porcine Epidemic Diarrhea: A Year Later, What Did We Learn?



As anyone with in-laws will tell you, the only thing worse than a guest who overstays their welcome is one who was never welcome in the first place. In his role as Director of Health Assurance for a 220,000 sow production system in the U.S., Dr. Luc Dufresne has first-hand knowledge of PED and what it can do. With 18 months now

elapsed since PED came to North America, the timing is right to reflect on what we've learned and how we can use that knowledge to fight this devastating disease.

"PED didn't kick us in the stomach; it aimed a few inches lower."

When it comes to the reality of PED, Dr. Dufresne didn't pull any punches. Though Canada has thus far contained the spread, close to 70% of the U.S. herd is infected. So what exactly are they dealing with?

Know Your Enemy

As a coronavirus with an oral-fecal mode of transmission, PED is somewhat similar in epidemiology to TGE (Transmissible Gastroenteritis). Yet Dr. Dufresne referred to PED as "TGE on steroids". Not only does it cause 100% pre-weaning mortality for four to six weeks, but it's highly

infectious. "There's as much virus in a gram of PED infected feces as a ton of TGE".

If the disease is first identified in the farrowing house, it spreads quickly and affects all nursing piglets, causing profuse, watery diarrhea and vomiting. Piglets rapidly dehydrate and become moribund.

Take Control

In the early stages of the disease, Dr. Dufresne and his team began a full load-close-homogenize program as follows:

- Weaned all piglets 10 days of age and older into an off-site facility.
- Began immediately exposing sows and gilts 2-5 weeks pre-farrow with scours wiped from the heat matt via toilet paper.
- Usually delayed whole herd feedback until they had enough piglet intestines to expose the entire sow herd. The goal of tissue feedback is to uniformly expose all animals as quickly as possible and develop homogenous immunity. Unfortunately, it is usually short-lived, often giving way to relapses 10-12 weeks after the initial feedback.

Take your Best Shot

While some infected farms in the U.S. have had promising results with vaccines, there is no evidence that they will protect a naïve herd from acquiring the disease.

Explore your Options

After witnessing the underwhelming results of the full load-close-homogenize, Dr. Dufresne's operation tried a different approach:

CONTINUED ON PAGE 42

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- Moved all piglets 7 days and older to an off-site nursery as soon as the disease was diagnosed.
- Exposed the herd to PED previously amplified in colostrum-deprived piglets.
- Systematically euthanized the remaining piglets on-farm and all piglets at birth for a 3 week period. It's not pretty, but then, neither is PED.
- Washed gestation crates after each movement of animals and washed and disinfected the farrowing room.
- White washed all farrowing rooms for a complete turn.

For Dufresne's team, the outcome was encouraging in their last 10 farms infected with PED. Piglets were PED negative immediately after standard operating procedures resumed and

none of the farms have experienced a clinical relapse.

Wipe it Out

It's a worthy goal, but eliminating the disease entirely is like sending those houseguests on their way: Easier said than done.

To do it, three things need to happen:

- Virus replication is halted by exposing all animals to the virus quickly.
- The virus is eliminated from the environment.
- The virus is prevented from re-infecting the herd.

While the first two steps are achievable, the third is difficult, especially if other infected herds are nearby.

Find a Tonic for Chronic

Bringing a chronic farm under control involves the same principles that are used to address an acute infection:

- Maximize immunity.
- Reduce the pressure of infection in the farrowing room.
- Segregate between clean and dirty.

However you approach it, PED is a game changer for the industry. Dr. Dufresne acknowledged that the disease is likely endemic in the United States, and called his own experience with it "the worst six weeks of my life".

He followed that up, however, by praising industry for their willingness to share information and work together. He advised those who may be at risk to learn all they can about the disease and how to control it. Above all, he urged them to not get complacent.

He struck a hopeful note, and for good reason. PED may have booted pork producers where it hurts, but 18 months later, they're still alive and kicking.

Part two: Ontario Sow Herd PEDv Infection Experience



When talking about the Canadian experience with PED, it's easy to get caught up in the big picture and forget that we have to drive it out the

same way we brought it in: One farm at a time. Producer Tom Graydon is living proof of that. Together with brother Brian, he runs a 6000 head sow farm near Tillsonburg, Ontario consisting of two barns, each containing 3000 sows. In managing both barns and overseeing the day to day operations, Tom received an unexpected crash course in PED when it broke at both barn locations in February of 2014.

After many years in the business, Tom probably thought he had seen it all. Yet like many other pork producers, he never saw PED coming. "It entered our barns through contaminated feed and hit us hard."

With so much focus on how PED impacts pigs and profit, we often overlook the effects on people.

"We're very fortunate to have excellent staff in each barn. We couldn't have gotten through this without them."

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See page 4

approached it with a singular focus: Getting PED off their farm as quickly as possible.

Pitching in to Drive it Out

Working closely with their veterinary team, they implemented a Control, Containment and Elimination strategy:

1. Sow Units:

- Pigs weaned down to 7 days of age, with subsequent 100% mortality in litters for approximately four weeks.
- Sows exposed for two to three weeks then stopped.
- Aggressive sanitation with lime, disinfectant and heat.
- Strict McRebel Protocol: This might sound like something you get at McDonald's until you remember

that it's part of a larger process involving feedback, where the intestines of euthanized, infected piglets are ground up, mixed with skim milk powder and fed to sows in what Tom called a "pig smoothie". But the results were impressive, with only one in ten sows dying who ingested the mixture. To borrow a line from Buckley's cough syrup, "it tastes awful and it works":

1. Cross foster only within first 24 hours of age.
2. Stop cross fostering between litters for sick pigs, fall-behinds and runts.
3. Only move pigs within farrowing rooms at birth.
4. Stop use of nurse sows for weak-born, fall-behinds and runts.
5. Minimize injections of suckling piglets.

CONTINUED ON PAGE 44

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6. Change needles and wash hands and equipment between litters.
7. Immediately destroy piglets that become sick and are unlikely to recover.
8. Stop all bio-feedback.
9. Stop all manure feedback.
10. Move nursery pigs strictly all in / all out.
11. Nurseries may be loaded all in by early weaning a few of the oldest, best performing litters from the next oldest farrowing room.

- Gilt development unit (GDU) exposed to virus.
- Protocol change saw no pigs held in the shipping room.
- Boot wash stations implemented.
- Changes to deadstock handling involving compost and biosecurity.
- Farrowing room procedures included the following:
 1. Wash, disinfect and dry.
 2. Heated to 40 degrees C or higher overnight.
 3. Rooms fogged with lime. Tom stressed this step as being very effective and essential to the process.
 4. Sows in crates foamed with 1% Virkon.
- In May, the iPED vaccine from Harris Vaccines was implemented at 7-10 days pre-farrow.

2. Gilt Developer Unit:

- Water and feed medication in nursery.
- Aggressive, systematic disinfection in nursery and finisher.

Talk it Out

Apart from the need for thorough sanitation at every step of the process, Tom emphasized the value of clear communication to ensure that everyone is on the same page. They found it challenging in the one barn staffed entirely by foreign workers, but even in the barn with Canadian workers it was difficult at times.

"I listened to two employees arguing intensely about something for 20 minutes before I stepped in and said 'guys, you're both making the same point!'"

The whole experience was stressful to say the least, with 5.5 weeks of piglets lost to the disease or 10% of what they would have shipped last year. By July 7, however, negative pigs were being weaned and all six nursery sites were PED-free. As well, 17 of 18 finisher sites have tested negative to date and finishers are starting to be filled from negative nurseries.

In spite of the losses, Tom prefers to focus on the positives.

"We learned a lot from this about the importance of strict biosecurity, managing employee morale and relying on historically successful methods like lime."

He's the first to admit that PED cost them dearly, but it also drove record high pork prices.

"We lost more this year with pigs than we ever have before, but we also made more than we've ever made."

In that and other respects, PED reads a bit like a Charles Dickens novel. The contrasting experiences in Canada and the U.S. evoked a tale of two cities, and from an economic standpoint, it was the best of times; it was the worst of times.



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Part three: PED Virus in Canada



In some respects, the saga of PED in North America has been a tale of two countries. South of the border, they seemed unprepared and overwhelmed, making it little wonder that the disease hit hard and spread rapidly. Fortunately, the story in Canada has been a much

different one. Dr. Doug MacDougald, a veterinarian with SouthWest Ontario Veterinary Services and a leading expert on PED, took a closer look at the Canadian experience with the virus and what it taught us.

By his own admission, Dr. MacDougald is much more relaxed now than at the same time last year when PED first appeared in Canada. But he wouldn't recommend that state to producers.

"PED only took a year to infect half of the U.S. herd, and all indications are that the biggest disease threat to our industry is still to come."

It's a chilling prospect, but as far as the Canadian experience with PED is concerned, there's a lot to warm up to.

No News is Good News

Following a flurry of PED activity in Ontario last year with 63 cases from January to July of 2014, there have only been six new cases in the past six months. Of course, stopping the spread of the disease is one thing, but what about those sites that were already infected?

"The success of the Area Regional Control and Elimination (ARC&E) program is a great news story," said Dr. MacDougald. "Almost all PED positive sites associated with the program are actively working

towards elimination, with 123 sites projecting PED elimination in 2014."

Those battling the disease have seen a lot of ups and downs along the way, but MacDougald said they've learned some valuable lessons in the process:

1. PED is extremely easy to spread, especially with shoes. Biosecurity measures like Danish entries and strict adherence to service vehicle protocols are critical to prevention.

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<p>This little piggy went Wee, Wee, Wee all the way to market.</p>	<p>This little piggy stayed home (a little longer).</p>

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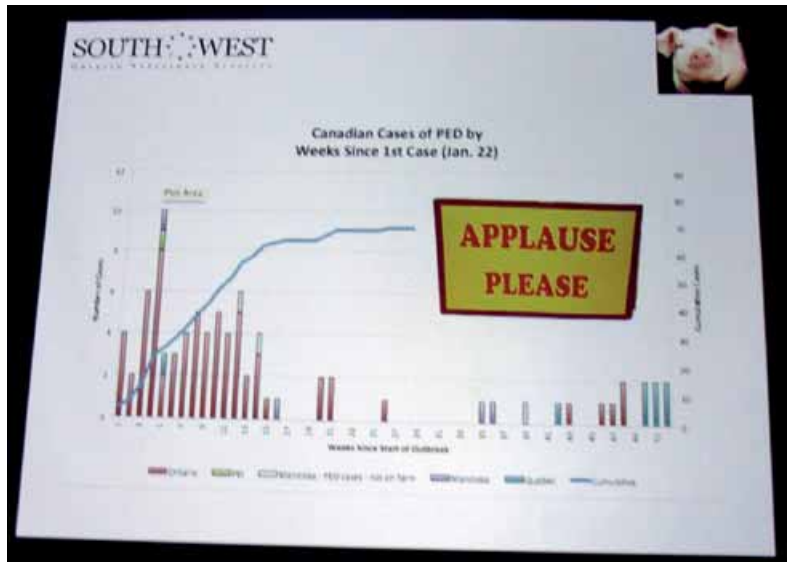
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2. Pig transports have played a huge role in PED transmission. MacDougald tipped his hat to the transport sector for being engaged and assuming a lot of the responsibility.
3. Industry has proven that with hard work they can eliminate PED from all types of pig sites, giving them a much higher confidence level going forward. That may explain MacDougald's new take on an old saying: "Good things come to those who DON'T wait and get their as*es in motion."
4. Western Canada has demonstrated the power of strong surveillance and prevention plans to stop disease in its tracks.
5. To battle this and other diseases, we need a national control and elimination plan and regional response teams; all provinces must work together. MacDougald underlined this point with a photo of the gold medal winning Canadian hockey teams as an illustration of what resolve and collaboration can accomplish. When he showed the same photo in the U.S., he was soundly booed. In light of the great disparity in the success with PED prevention north and south of the border, that reaction speaks volumes.



All of this is not to say that PED is behind us. As we enter the high risk transmission season, producers, truckers, feed companies and plants must be vigilant, review all aspects of

their biosecurity and contact their veterinarian at the first sign or suspicion of PED.

But consider the outlook one year ago and how far we've come, to the point that the Ontario Swine Health Advisory Board (OSHAB) is talking about eliminating PED from farms by November of 2015. So it was hard to blame MacDougald for showing a graph of Canada's progress to date and inserting a sign with two simple words for his audience: "Applause Please".

Given what that audience has witnessed from the industry and its efforts to contain and eliminate PED, it's the least they could do. ■

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BREAKOUT SESSION #7: Feed Cost and Net Income Feed Your Pigs, Feed Your Profits

Part one: Impact of Low Energy Diets on the Bottom Line



You might think that your teenager “eats like a pig”, and while the table manners may be similar, the volume is very different. At 65-75% of total costs, feed is by far the largest item on a producer’s budget. So it’s understandable that Dr. Eduardo Beltranena would make feed his focus. And who better to study the topic than a research scientist with ARD who’s also an adjunct professor in the Department of Agricultural, Food

& Nutritional Science at the University of Alberta? With credentials like that, it’s little wonder he had the audience (dare we say it?) eating out of his hand.

The costliest component of pig feed is dietary energy, so it follows that this element has the greatest impact on profitability. One area of research has looked at the feed energy requirements of pigs of different ages and physiological status (growing, pregnant, lactating). In two commercial-scale trials, Dr. Beltranena assessed how Prairie grain diets stacked to feed energy levels similar to a corn-SBM diet and lower, and how that affected profitability.

Chowing Down and Fueling Up

Like humans, different pigs have different dietary energy requirements. But to be helpful for producers, a bit more detail is required. Dietary energy intake is genotype and gender specific and is affected by stocking density, feeder space, housing and barn environment. Thus in order to optimize tissue growth and profitability, researchers first had to define the dietary energy level for each genotype and gender under typical housing, stocking and environmental conditions of a particular barn.

In their first experiment, Dr. Beltranena and his team evaluated feeding lower than conventional, constant NE levels through to market weight. The aim was to compare small grain-based dietary regimens where the high would provide similar performance to corn-SBM diets.

CONTINUED ON PAGE 48



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After much testing and crunching of numbers that only a researcher could understand, let alone enjoy, they found that decreasing NE by 0.1 Mcal/kg linearly decreased feed cost by \$17/tonne, feed cost per kg gained by \$0.03 and feed cost per hog by \$2.60. In the process, it increased income over feed cost by \$3.50.

The bottom line for producers: Feeding 2.1 vs. 2.4 Mcal/kg boosted profitability by more than \$10 per hog.

For Dr. Beltranena, the key finding was that pigs performed well feeding decreased net energy levels in the grower and finisher phases.

Is Fast or Slow the Way to Go?

In young pigs, appetite or digestive capacity restricts dietary energy intake, thereby limiting protein deposition. Like teenagers “going through a phase”, pigs eventually grow out of this limitation, but fat accretion then increases progressively faster. This suggested to researchers that it might be possible to mitigate feed costs by reducing dietary energy levels as pigs grow. However it also prompted something that researchers love even more than convoluted terms and long-winded titles: Unanswered questions.

1. At what dietary energy level should pigs start?
2. How long should they be fed at this level?
3. Should the level drop from its starting point?
4. If so, how aggressively should feed energy level be reduced as pigs grow to slaughter weight? While an early drop would limit lean deposition, a late drop could aggravate fat accretion and increase feed cost.

With all of this in mind, Dr. Beltranena’s second experiment evaluated the response of barrows and gilts to initially constant but varying NE levels in the grower phases. This was followed by varying curvilinear (curved line) decreases in dietary NE (aggressive or gradual) in the finisher phases as pigs grew to slaughter weight (120 kg).

More testing and number crunching followed, accompanied by a slew of acronyms like ADFI, SID and ADG (just FYI). In the final analysis, it was unclear whether abrupt drops in feed energy level had advantages over gradual decreases by phase. But this trial did reinforce that hogs can perform well feeding lower net energy diets than equivalent corn-SBM diets, resulting in greater profit margins for producers.

Apart from that conclusion, the research had other implication for producers:

1. They can feed lower cost diets without supplemental dietary fat. Carcass backfat, loin depth, lean yield, index and carcass lean gain was not affected by the NE regimen.
2. They can achieve lower feed energy by incorporating lower cost cereal grains like oats, and bio-industrial co-products like canola meal, DDGS or wheat millrun.
3. Feeding smaller cereal Prairie grains likely produces whiter and firmer pork fat than feeding corn grain and corn DDGS, giving producers a competitive advantage in export markets like Asia that prefer this composition.

Some of these feed findings may take time to digest, but with their potential impact on profitability, they’re worth the effort. As for your teen’s table manners, time will probably help with that too; Then again, in an age where some people make a living with competitive speed eating, maybe not.

Part two: Feed Management to Maximize Feed Efficiency and Net Revenue

Promoting feed efficiency is akin to being “pro oxygen”; you don’t meet a lot of resistance. Yet even the experts have differing opinions on how best to accomplish it. Given his position as professor in the Department of Animal Sciences at Iowa State University, Dr. John



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Patience has earned the “expert” tag. If there was any doubt, his new book “Feed Efficiency in Swine” should erase it. Fortunately, his grasp of the subject matter trumps his knack for catchy titles.

With feed being a producer’s greatest expense, it only makes sense to optimize feed efficiency while maximizing your net income. Along the way though, there’s a lot to consider.

When Less isn’t More

On the surface, it may sound right that using the cheapest ingredients will minimize your feeding program costs. But you knew it couldn’t be that simple.

For example, consider the cost of dietary energy supplied by different ingredients and the changing price relationships therein. In 2005, energy from fat cost about 60% more than from corn, compared to only 36% more in 2013. Energy costs from DDGS in relation to corn went from 41% to 16% more over the same time period. This is bound to influence the quantity of a given ingredient used in a feeding program, and it shows the importance of considering all aspects of pricing changes, including cost relationships within and among ingredients.

A Search for Meaning

It’s important to examine the how and why and when of feed efficiency. First though, it helps to define what feed efficiency is. As the woman who says “do I look fat in this dress?” can attest, it depends on who you ask:

- 1. Kg feed per kg liveweight gain:** This is the traditional approach, but it can be misleading as it ignores differences in dressing percentage.
- 2. Kg feed per kg carcass gain:** Increasingly common in the Midwest U.S. and in research when diets differ in fiber content.
- 3. Mcal energy per kg (liveweight or carcass) gain:** A crude measure of energy efficiency but one that puts more focus on that element.
- 4. Feed cost per tonne:** If it sounds like a horrible measure of efficiency with little meaning because it ignores animal performance, there’s a reason for that.
- 5. Feed cost per pig placed:** As it considers overall feed cost on a per pig basis, it can be a useful measure of efficiency when combined with some of the above measures.
- 6. Feed cost per pig sold:** Similar to #5 but factoring in the financial penalty of mortality.

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7. Return over feed cost per pig place: A broad stroke measure that acknowledges the impact of barn throughput.

8. Net income: Another broad measure, one that keeps the focus where it belongs: Show me the money!

Made to Measure

Measuring feed efficiency is usually easy, but interpreting the results is much harder. You must ensure that comparison of fills within a farm or system is done correctly, and that can be a challenge given the various factors that may impact feed efficiency, including mortality, diet composition, entry/exit weights, particle size and mash vs. pellets.

Gene Models

While genetic selection often improves feed efficiency, it may produce animals with poor feed intake and thus slower growth. Modern selection programs, through marker-assisted selection and the use of BLUP (Best linear unbiased prediction), can ensure that feed efficiency is enhanced without a loss in growth rate.

Health Breeds Wealth

Few would argue that health status greatly affects feed efficiency. It's less clear whether the negative impact

of disease outbreak persists throughout a pig's life. The preponderance of data suggests that, all else being equal, the impact is temporary and pigs can perform well once the illness passes.

The Diet Dilemma

Research indicates that the correlation between diet energy content and feed efficiency is surprisingly low. Still, there is much to learn about the interaction among dietary constituents and digestibility, and what makes a particular ingredient, such as corn, higher or lower in quality.

Blame it on Management

Poorly designed feeders that are also badly managed can cause excessive feed wastage and lower feed efficiency. As well, inadequate feeder space may also result in poorer feed conversion.

Achieving the best and most economical feed efficiency isn't easy. It requires great attention to detail in all aspects of pork production, including genetic selection, diet formulation, management of barn environments and controlling disease.

Is it more trouble than it's worth? Like the question about whether she looks fat in that dress, the correct answer is "no".

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Part three: Impact of Particle Size Reduction on Feed Cost and Feed Efficiency

At one time in our lives, we've all pondered those burning questions: Who am I? Why am I here? What is the impact of particle size reduction on feed cost and efficiency? For Hans Stein, professor of animal nutrition at the University of Illinois, it's the third question that really intrigues him. In an industry where knowledge is power and every dollar counts, he has plenty of company.

The Daily Grind

One method for reducing particle size is grinding of feed ingredients, which may increase nutrient digestibility and increase growth performance. There is evidence that pigs fed corn which is ground to a fine particle - usually with roller mills or hammer mills - had a greater energy, DM, and N digestibility. While ingredients like DDGS and soybean meal are often ground during the production process, cereal grains and pulse crops are not, and must be ground after entering the feed mill.

In order to shed more light on particle size reduction, Stein summarized the results of 5 key experiments:

Experiment #1: Ileal Digestibility of CP, AA, Starch and GE

Purpose: Determine the SID of CP and AA and the AID of starch and GE in the four batches of corn ground to different particle sizes.

Process: Ten growing barrows were equipped with a T-cannula in the distal ileum. Pigs were allocated to a replicated 5 x 5 Latin square design with five diets and five periods in each square.

Results:

- The AID of starch and GE increased as the particle size decreased.
- The SID of CP and all indispensable and dispensable AA was not affected by the particle size of corn.
- The average SID of AA was not different among diets.

Discussion: Starch is the main form of energy storage in grains and is mainly digested in the small intestine, while the undigested portion will be fermented in the large intestine. The increase in the AID of GE and starch in corn as particle size decreased likely resulted from increased access to the starch granules for α -amylase, which increases starch digestibility.

Finally, the reduced surface area of grain ground to the greater particle size may have contributed to the reduced access for enzymes.

Experiment #2. Total Tract Digestibility of GE and P

Purpose: Determine the concentration of ME, the ATTD of GE and the STTD of P in the 4 batches of corn used in the first experiment.

Process: 40 barrows were allotted to a randomized complete block design with four diets and ten replicate pigs per diet. The barrows were placed in metabolism cages, which allowed for the total, but separate, collection of urine and fecal materials from each pig.

Results: The ME concentration, calculated on an as-fed or DM basis, increased from 3,311 to 3,432 kcal/kg, and from 3,826 to 3,964 kcal/kg, respectively, when corn particle size decreased from 865 to 339 μ m (micrometers).

Likewise, the STTD of P did not change as the particle size of corn changed.

Discussion: The ATTD of GE in DDGS and the concentration of ME also increased when pigs were fed DDGS ground to

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308 µm compared with pigs fed DDGS ground to 818 µm. In contrast, if the particle size of lupins is decreased from 1304 to 567 µm, the ATTD of energy is not affected. Who knew?

This difference among feed ingredients is hard to explain. The fact that there's no difference in GE excreted in the urine amount treatments indicates that the entire improvement in ME of corn as particle size was reduced is due to the increase in energy digestibility.

It appears that reduction in particle size or increases in surface area are not effective in improving P digestibility in pigs.

Experiment #3: Maintaining Ingredient Composition among Diets

Purpose: To test the hypothesis that the G:F improves if diets fed to weanling pigs contain corn ground to a smaller rather than a greater particle size. Stein is clearly a man who doesn't shy away from controversy.

Process: 128 weaned pigs with an average initial BW of 9.41 ± 1.54 kg were randomly allotted to four experimental treatment diets for three weeks. Diets were formulated in one of two ways:

1. Using corn that was ground to the four different particle sizes.
2. Using values for ME, standardized total tract digestibility of P and standardized ileal digestibility of CP and AA for each particle size calculated in experiments 1 and 2.

The four diets were based on corn, SBM, soybean oil and fish meal. All diets met or exceeded current nutritional requirements.

Results: There was no difference in the initial or final BW among dietary treatments, and no difference in ADG. Conversely, ADFI increased and values for G:F were reduced as corn particle size increased.

Discussion: The increased ADFI in pigs fed diets containing corn ground to a greater particle size is an attempt by the pigs to compensate for the reduction in ME in diets containing the corn with greater particle size. The increase in G:F as the particle size of corn was reduced was expected because corn ground to a smaller particle size contains more ME than corn ground to a greater particle size.

If that doesn't end the controversy, nothing will.

Experiment #4: Effects of Reducing Fat Addition in Diets Containing Corn Ground to a Finer Particle Size

Purpose: To test the hypothesis that dietary concentrations of soybean oil may be reduced if corn is ground to a finer particle size without reducing pig performance.

Process: 128 pigs weaned for 14 days with an average initial BW of 9.95 ± 1.95 kg were allotted to 4 treatment diets in a randomized complete block design. Experimental diets were provided on an ad libitum basis for 3 weeks, formulated using the values of energy and nutrient digestibility explained in experiment #3. Diet ME values were adjusted by reducing the amount of soybean oil in the diets as the particle size of the corn was reduced. The assumed ME value for soybean oil was 8400 kcal/kg, and by adjusting the inclusion of soybean oil, all diets contained 3413 kcal ME/kg.

Results:

- No difference between the initial and final BW among dietary treatments.
- No difference among treatments for ADG and ADFI, but G:F was reduced as corn particle size increased.

Discussion: The increased addition of soybean oil to diets containing corn ground to a greater particle size did not fully compensate for the reduction in ME of the corn ground to the coarser particle size. This may be the result of weanling pigs being limited in their fat utilization. Weanlings may have reduced digestibility of fat compared



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with older pigs because of reduced secretion of lipase or because older pigs have a greater lipid deposition than younger pigs.

If that's the case, researchers may have overestimated the ME of fat in this experiment, explaining their inability to maintain a constant G:F among pigs fed the 4 experimental diets.

So the next time your spouse asks why you're always in the barn and never spend enough time with them, you can honestly say "because it's all about ME!"

Experiment #5: Growth Performance of Growing Finishing Pigs

Process: 36 gilts and 36 barrows with an average initial BW of 32.00 ± 1.58 kg were housed individually for a 3-phase growing-finishing experiment, with feed and water provided on an ad libitum basis throughout the experiment. Diets were formulated as explained for experiment #4 and within each phase, a constant ME was maintained by reducing the inclusion of soybean oil as the particle size was reduced.

Results:

- Starting weight and final weight did not differ among dietary treatments.
- No differences among treatments for overall ADG and ADFI.
- An increase in corn particle size increased the G:F for gilts but not for barrows.
- No differences in live BW, HCW or back fat among dietary requirements, although the dressing percentage dropped as corn particle size increased.
- As corn particle size increased, the pH in the cecal and colon contents decreased, as did the concentration of acetate, propionate and butyrate in cecal contents. The

pH reduction indicates that more VFA were produced as corn particle size increased, suggesting that less fermentation took place in the hindgut of pigs fed the diets containing corn ground to smaller particle sizes.

While this all makes for great bedtime reading, it may prompt an important follow-up question for readers: "So what?"

Since feed is by far the greatest expense for producers, small adjustments can make a big difference in the balance sheet. Based on the experiment results, Stein had the following observations:

1. Reduction of particle size of corn from 865 to 339 µm linearly increased the AID of starch and GE and the concentration of ME in corn, yet had no effect on the STTD of P or the SID of indispensable AA and CP.
2. Therefore, the G:F of weanling pigs improves if diets contain corn ground to a particle size of 339 µm, indicating that the ME of finely ground corn is greater than that of corn that's more coarsely ground.
3. Consequently, the inclusion of dietary fat may be reduced if corn is ground to a finer particle size, but the amount of fat that may be removed from the diets without reducing pig growth performance is unknown.
4. For growing-finishing pigs, the increased concentration of ME in finely ground corn allows reduction of added lipids in diets containing this corn, resulting in **reduced diet costs and improved profits and dressing percentage.**

Apart from being valuable information for producers, this data can be useful at your next party. When faced with that annoying guy who prattles on about nothing and won't leave you alone, ask for his take on the impact of particle size reduction on feed cost and efficiency. Problem solved. ■

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BREAKOUT SESSION #8: Implementing the Canadian Code of Practice Cracking the Code

Part one: Housing Sows in Groups: The Situation in Quebec



If there was a “People’s Choice Awards for Pork Industry Issues”, animal welfare would be the “hooves down” winner of Best Conversation Starter. Informed or not, everyone has an opinion, which made last year’s update of the Canadian Code of Practice for the Care & Handling of Pigs timely to say the least. One of the most scrutinized sections pertains to group housing. It’s

uncharted territory for a lot of producers, so Christian Blais - Agronomist and CEO of Isoporc and Gene-Alliance Inc. - tried to help them navigate the rough terrain.

Plenty has been written about the advisability of moving from gestation stalls to group housing for pregnant sows. Is it logical? Is it feasible? Is it based on scientific fact or the pressure from a vocal minority? But come July 1, 2024, only one fact will really matter: It’s mandatory.

Under the revised code of practice, sow group housing will be required of all pork producers in Canada. Given that reality, producers are weighing their options for construction, expansion or renovation projects, and there’s a lot to consider.

The Letter of the Law

Before any alterations can occur, producers must factor in constraints of environmental and municipal legislation that could restrict herd and building expansion. For example, Quebec requires a costly environmental impact study for herds of more than 2400 sows. It’s imperative to do your research and see what laws or regulations apply in your area.

Feeding Frenzy

Since no barn can survive without them, feeding systems are a good place to start the renovation process. Options include floor feeding, self-locking stalls (trough), free access shoulder stalls (drop), electronic sow feeding (ESF) and full-length feeding station with self-locking trough. Each has its pros and cons, so producers need to take a closer look and decide on the best fit for their operation.

Devilish Details

With so many factors to consider and details to address, making the move to group housing can be overwhelming. To ease the stress, Blais and his company visited farms in the U.S. and Europe to identify some key elements of the new approach:

- The updated code allows for housing of sows in individual stalls for up to 28 days after breeding and an additional seven days to manage grouping.
- In a group housing systems, proper management is crucial and much more challenging than with the stall approach. There are three options here:
 1. Static: Sows in the same group remain together throughout the gestation period.
 2. Dynamic: Sows are mixed and sorted at different stages of gestation.
 3. Combination: This could involve, for example, having a static group with multi-parity sows and a dynamic group with gilts and first parity sows.

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- Remember that the code recommendations for minimum floor space allowances are 19-24 sq. ft. for sows and 15-18 sq. ft. for gilts.
- Quality flooring is critical. Install wide slats to reduce the risk of injury or a solid section for the resting area. Avoid slats with rough edges as they can increase the chances of injury.
- Spread out the watering areas on each gutter to ensure sufficient liquid for manure evacuation.
- Provide alleys to enter pens and move easily from one pen to another.
- Since properly preparing gilts is vital for success with group housing, designate separate pens for gilts and first parity or small sows.
- As soon as possible upon entering the herd, train gilts on the automated feeding system.
- You can't stop sows from fighting, but you can minimize their aggression by erecting partitions in the resting area, feeding the animals as soon as they arrive in the pen and closely monitoring the dominant versus subordinate sow dynamic.
- Provide proper ventilation to maintain cleanliness of the comfort zone.
- Demand 24/7 customer support from your feeding equipment company. If you don't think this is important, you will the first time your feeder malfunctions.

Points to Ponder

Now that conversion to group housing has gone from an "if" to a "when" for Canadian producers, Blais told his audience to ask themselves specific questions in weighing their options:

1. What sort of projects will I be carrying out?
2. What environmental or municipal permits will be required, and can I get them?

3. Is it cost effective to renovate my existing buildings or does it make more sense to build new ones?
4. What management systems, equipment or concepts am I most comfortable with?
5. Is my staff able to manage these changes or do we need a training program to help them with the transition?
6. What can I afford? This should include a certain amount in reserve for unexpected expenses.

Questions 4 and 5 address one of the biggest adjustments producers face with the revised code: The challenge of managing animals in a group setting compared to individual stalls.

So once you've answered these questions, what group housing alternatives are available?

1. Enlarge the maternity unit by keeping current stalls and adding about 60% more spaces to the number of sows to maintain the ratio of penned sows to sows in stalls.
2. Convert a farrow-to-finish operation to a specialized sow unit and use the finishing spaces to manage the loose housed sows.
3. Transform a finishing unit to a sow herd by converting the finishing section to a group-housed gestation section and adding a new farrowing and breeding block.

These are by no means the only options, but they're a way to get producers thinking about the future and figuring out what will work best for their business.

The updated code of practice carries with it a number of philosophical and systemic issues, from who should decide what's best for the industry to who's going to pay for the changes. Ultimately though, producers need to accept that change is coming and adapt as best they can to ensure their survival. Taking the "head in the sand" approach is like ignoring a forecast of heavy rain in hopes of avoiding it. If you don't dress appropriately and break out the umbrella, prepare to be soaked.

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Part two: Pain Management: Implementation of the New Code Regarding Euthanasia and Castration



Nobody likes pain, at least not openly. Pigs are no different, which makes pain management a vital part of pork production. Apart from placating animal activists and protecting meat quality, minimizing a pig's pain is simply the right thing to do. As a result, pain management figures prominently in the updated Code of Practice for the Care & Handling of Pigs. To make sense of it all,

Dr. Egan Brockhoff looked at the new requirements for addressing pain in five key areas. As a swine veterinarian with Prairie Swine Health Services and a consultant on swine health and animal welfare, he could speak with authority on what the revised code will ask of producers and how best to comply.

Everything that's done on a pork farm has a reason behind it, but that doesn't mean it's always pleasant for the animals. In particular, there are five Elective Husbandry Procedures addressed by the code as fundamental to on-farm pain management. Each one can lead to stress and discomfort for pigs, so it's imperative to have the right protocols, personnel and equipment in place to carry them out as humanely as possible.

1. Castration: If you're a man, the very word induces a cold sweat and involuntary crossing of the legs, so imagine how the pig feels. For the pork industry, it's the primary method of reducing boar taint, aggression and handling challenges with intact males. But it also causes pain and creates an open wound susceptible to bacterial infection.

The updated code includes requirements and recommendations for castration:

Requirements:

- i. Castration performed after 10 days of age must be done with anesthetic and analgesic to help control pain.
- ii. As of July 1, 2016, castration performed at any age must be done with analgesics to help control post-procedure pain.

Recommended Practices:

- i. Use an anesthetic and analgesic to control pain during castration and after the procedure for all pigs.
- ii. Use a licensed veterinarian to castrate pigs weighing more than 23 kg.
- iii. Consider using non-surgical methods to control boar taint once available and accepted in Canadian markets.
- iv. Consider marketing intact males in markets where lighter market weights are accepted.

The most practical anesthetic (freezing nerves) protocol will be a local block of the nervous tissue associated with the skin, scrotum and testicles, and associated connective tissues of the male reproductive tract. To help manage the pain, products such as lidocaine hydrochloride can be administered with an analgesic.

2. Tail Docking: While it can help avoid the pain of tail biting, it's also a painful procedure in itself. Under the revised code, "tail docking of pigs over 7 days of age must be done with pain control", and "as of July 1, 2016, tail-docking performed at any age must be done with analgesics to help control post-procedure pain."

3. Teeth Clipping: It's performed less frequently these days, but the removal of needle teeth is still practiced by some producers to minimize the effects of aggression. As it can cause damage to the tooth root and the gum line, "the need to clip piglets' teeth must be evaluated, and the procedure performed only when deemed necessary".

4. Tusk Trimming: According to Canadian Food Inspection Agency (CFIA) regulations, boars must have their tusks trimmed prior to transport if they won't be separated in their own compartment.

The code requires that "the pulp cavity must be avoided during tusk trimming". Dr. Brockhoff suggested that producers trim the tusk 2-3 cm above the gum line, use proper sedation and have a veterinarian either perform the procedure or train stockpersons to do it.

5. Euthanasia: Central to a strong animal welfare program is humane euthanasia, so training and understanding of the process are critical. The updated code sets out specific requirements for euthanasia including an on-farm euthanasia

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plan, decision making tree, selection of appropriate methods and training to ensure confirmation of death.

Perhaps most importantly, “an acceptable method of euthanizing pigs must be used...in a manner that is quick and causes the least possible pain and distress.”

Overall, Dr Brockhoff observed that the revised code reflects a greater understanding of pain mitigation and animal welfare. It's a lot for producers to process, but the importance of pain management is well worth the effort. After all, if it was the *Code of Practice for the Care & Handling of Humans*, what would be YOUR top priority?

Part three: Pen Gestation Conversion Using Electronic Sow Feeders

Now that the updated code has made mandatory the group housing of sows, the question becomes “which type of housing is right for us?” While the answer will vary depending on your goals, resources and current operation, Kees van Ittersum of New West Standard Equipment Inc. feels Electronic Sow Feeding (ESF) is the best option in the majority of cases. He supported that position by examining the various alternatives and explaining why ESF is his system of choice.

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Exactly how many types of group housing set-ups there are will depend on who you ask. For his part, Ittersum identified five based on the feeding method employed:

1. Floor feeding: This involves dropping food on the floor that is accessible to all.

Pros: Low investment costs.

Con: No individual feeding so there is competition for feed, with the weaker pigs being the losers.

2. Cafeteria style feeding: Sows are housed in a separate pen and brought once a day to a group of stalls to be fed.

Pros: No competition for feed; low investment costs.

Con: Very labor intensive.

3. Trickle feeding with shoulder stalls: Sows are fed with shoulder stalls, usually in small groups where the slowest eating sow determines the rate that feed is dispensed.

Pros: Average investment costs; usually easy to convert from stalls.

Con: Some competition for food.

4. Self-locking stalls or free access stalls: Sows have free access to the stalls, where they are locked in during feeding.

Pros: No competition for feed.

Cons: High space requirement; high investment costs.

5. Electronic Sow Feeding: Sows are fed by a feed station which recognizes each one individually using RFID (radio frequency identification) tags.

Pros: No competition for feed; average investment costs.

According to Ittersum, ESF has the best potential to boost productivity. Apart from maintaining body condition, thereby improving piglet production, it can optimize sow management by accommodating automatic, sorting, spray marking or heat detection.

From his experience, the farms that are most successful with ESF (highest piglet production) are those with large (100+ sows) dynamic groups with a continuous flow system where sows are added and removed at least once a week. These farms also use pre-implantation in which sows are introduced to the group immediately after standing heat.

Success by Design

Ittersum stressed that pen design is the most important factor in driving success with ESF. He favors an animal behavior-driven design with specific areas designed for specific activities:

Resting/Sleeping area

If it's of paramount importance to humans who only spend eight hours there, then it's doubly important for sows

that spend most of their time resting and sleeping. Not surprisingly, sows prefer solid floors over slats and often seek shelter from climate or unknown sows. For the latter, Ittersum recommended small, out of the way laying nests that accommodate a small group of 5-10 sows.

Eating area

This is determined by the location of the feed stations. The area should feature entrance and exit locations spread as far apart as possible to avoid aggression and prevent sows from “double dipping” right after their first feeding session. Ittersum estimated the limits per feed station at 55 for sows and 45 for gilts.

Drinking area

Like the eating area, this will be defined by the drinker locations. As sows drink right after eating, drinkers should be placed at the feeder exits and one additional spot at the other end of the pen. Install at least one drinker per 20 sows but not more than two in total to prevent sows interfering with sleeping/resting areas. The drinking area should be slatted.

Socializing/Walking area

Here you need enough room for sows to easily pass each

other or get out of the way. The area should be slatted with a maximum opening of 3/4" to avoid hoof injuries.

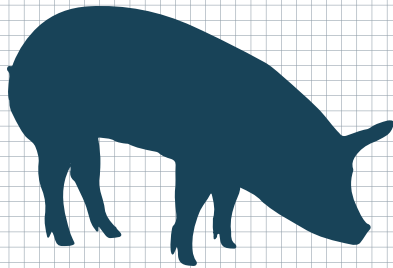
Defecation area

Sows, given the choice, will not defecate in their sleeping/resting area, and who can blame them? Instead, they'll choose less comfortable spots like high traffic areas around the drinkers or the feed station exit, so ensure that there is easy access to these areas from the resting places. Just don't cover too much area with solid laying nests or sows will use some of it as a manure spot, resulting in dirty floors.

Conversion Conundrum

While most existing sow barns can be effectively retrofitted to ESF, it's a bit more challenging than designing a new barn for group housing. There may be insufficient square footage or improper position and percentage of slatted flooring. Be sure to plan ahead for housing the sow herd during renovation to minimize production loss.

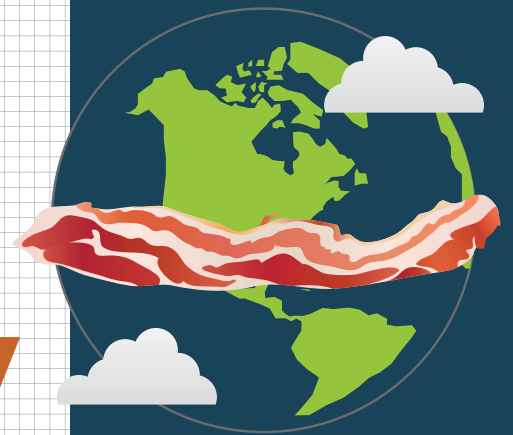
If some producers are concerned that finding the right housing and feeding systems for their animals will be time-consuming, they should consider it time well spent. Pork production has a lot of great things to offer, but dealing with a 400 lb. sleep-deprived sow isn't one of them. ■



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BREAKOUT SESSION #9: Problem Solving in Production

Got a Problem With That?

Part one: Global Perspective on Achieving Consistent Production Numbers



If you're one of those people who can't pass up a good problem, the world of pork production is rife with opportunity. Whether you prefer day-to-day dilemmas or big picture issues, the industry has a size and style to fit your taste. Solutions, on the other hand, are sometimes in short supply. In an effort to balance the scales, Mike Brumm of Brumm Swine Consultancy is a

man on a mission: To help producers identify and solve production problems. How does he do it and what are some of the most common problems on farm? He's glad you asked.

After years in the business, Brumm has detected a pattern: *"I seldom get calls to visit well maintained sites".*

Producers contact him for a wide range of issues. Upon arrival at their farm, Brumm has a standard approach to ensure that he's covering all the bases:

1. Walk around the exterior: This gives him an overview of the operation and points out any glaring concerns that could help frame his analysis. It may be as simple as a barn overrun with weeds out front or the one with a mangled curtain covering one side and a producer asserting that "I can get one more year out of that".

2. Observe pigs in pens: He recommends that all barns have windows overlooking the pens, as he can learn a lot by observing the animals' behavior before he walks in and disrupts them. If the pigs are sleeping, where and how are they laying? Are they avoiding one particular area?

In one barn, the temperature was a sweltering 94°F. But instead of panting and lying down as you would expect, the pigs were squealing and fighting. Brumm soon detected the cause: The cooling system was positioned such that it only blew on one row, so all the pigs were clamoring to be in that area.

3. Check the status of the ventilation system: It's a critical part of any operation, and sometimes a basic adjustment can make all the difference. Yet people often resist change, like the guy who ignored Brumm's advice for 10 years rather than spending \$10 to correct the problem. In this case, Brumm's assessment was fairly to the point: "You can't fix stupid."

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4. Check feeder sizing and adjustment: Against the backdrop of a photo showing feed scattered on the floor of a barn, Brumm gently suggested that “not everyone gets feeder adjustment yet.”

5. Check drinker sizing and adjustment: Oftentimes, two issues that seem unrelated are closely intertwined. “If the pen never gets watered, that’s why the pigs are tail biting. They’re pissed!”

While the problems differ from farm to farm, there are some common concerns that Brumm encounters with wean-finish production.

Pigs are wet and dirty for 2-3 weeks after placement

The standard response to this is increasing the minimum ventilation to improve air mixing and drying of pen surfaces. Unfortunately this leads to higher heating energy costs for much of the year.

Instead, the situation can often be resolved by aggressively closing ceiling inlets to attain an inlet velocity of 800-1000 fpm (feet per minute).

Feed conversion in grow-finish is above 3:1

In light of perpetually high ingredient costs, proper feed conversion is essential. Problems in this area have a few common causes:

1. Feeder Adjustment: Generally speaking, dry feeders return the best combination of daily gain and feed

conversion when the feeder adjustment allows 40-50% of the pan to be covered with feed. When there’s a disconnect between feeder adjustment theory and the workers, team up with them to take a photo of a correctly adjusted feeder and post a laminated copy in the barn. They now have a defined standard that they helped set by assisting with the photo taking.


2. Feeder Type: Many of today’s facilities were built with tube feeders based on cost and ease of cleaning rather than return on investment. By switching to dry feeders, producers can boost their “feed to gain” ratio, which will dramatically reduce feed expense.

3. Feeder Sizing: As a result of steadily increasing carcass weights over the years, feeders that were adequately sized 10-20 years ago when facilities were built are no longer sized correctly.

Today, feeders in grow-finish must have feed holes measuring at least 14” wide (15” preferred) with a minimum depth from the front lip to the feed release point of at least 10” (12” preferred). Otherwise, pigs must assume abnormal postures to access feed. This leads to more feed waste as feeders must be adjusted to allow more pan coverage. It also reduces the effective stocking density at the feeder with fewer pigs per feeder hole.

Other issues that Brumm encounters on a regular basis include energy usage, biosecurity, site management and facility maintenance.

Whether you work with a consultant or “do it yourself”, it’s important to monitor all aspects of your operation on a regular basis and tend to issues immediately. As Brumm puts it, “even if you’re on the right track, you’ll get run over if you just sit there”. And if the image of a 10,000 ton train bearing down doesn’t get you moving, nothing will.



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Part two: Achieving Consistent Production Numbers in Single System Production



Back in our caveman days, motivation was fairly straightforward: Perform or perish. Today it's a bit more complicated, and Ryan Martin can relate. As manager of production for RFW Farms Ltd., he oversees activity on 40 farms. His daily interactions involve a plethora of personalities and temperaments, so staff motivation is an ongoing challenge. It's taught him a lot about what encourages and

what discourages, lessons that producers would be wise to incorporate in their own operations.

Few would argue that motivation is a key driver of consistent production numbers. There's less agreement on what types of motivation are most effective. And in the words of a favourite Martin quote, "you don't need to be an expert to have a strong opinion". Fortunately, there's a lot of expertise behind his suggestions for inspiring your team.


Accentuate the Positive



Historical On-Farm Performance

They say that if you're not moving forward, you're falling behind. Some may argue the point, but hopefully none of them are working for you. For everyone else, there's a real sense of accomplishment in knowing that you're doing better one day than you did the day before.




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Performance Incentives

If money talks and no one is there to hear it, does it make a sound? Financial bonuses linked to relevant criteria for producers such as reductions in pre-wean mortality in a farrowing room or maximizing growth in a finishing barn can be effective. Just don't make the mistake of tying incentives to inputs that are too complicated or out of a worker's control. If you do, they're far more likely to tune out than buy in.

Internal Comparison Reports

As evidenced by the annual Baby Crying Contest in Japan, not all competition is healthy. Still, Martin has found that stirring those competitive juices among workers can be good for business. His company distributes reports on a regular basis to all their farms showing the performance of each farm, the company average and the individual farm results. Ostensibly, the point is to keep everyone informed and up to date; but if it stimulates some healthy competition in the process, all the better.

Industry-Wide Standards

Beyond your own operation, it helps to stay current with industry news and advancements. Subscribing to reputable

hog magazines (hint hint) and attending workshops can enhance worker knowledge and, in the process, their productivity.

Eliminate the Negative

The Status Quo

Just as competition can take your business to new heights, complacency kills. Encourage your people not to settle for "good enough". This is especially true following a disease outbreak, when workers are liable to mistake a return to normal performance levels as real progress.

Economic Crisis

It's easy to get discouraged when times are tough, so it's up to managers to set a good example of confidence and resolve. Besides, what doesn't kill you makes you stronger, and given a choice, most would opt for the latter.

The People Puzzle

If you often think that life would be easier if it wasn't for all the people, the hog business may not be for you. People and relationships are the lifeblood of a pork farm. To get the most



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from both, it helps to keep a few points in mind.

Ownership

The buck may stop with you, but instilling a sense of ownership in your staff can be a boon to the bottom line. Martin finds that the best workers are those who feel personal responsibility for business outcomes and have “skin in the game”.

Consideration of Ideas

Encourage staff input through meetings and one-on-one interviews and be respectful of all suggestions, even if you don’t act on them. You never know where the next great idea will come from to impact your operation.

Visionary vs. Practical

To build the most effective team, you need a blend of personalities. While the visionary thinks ahead and seeks out new opportunities, the practical worker ploughs through those daily tasks that have to be done. Together, they are a powerful combination.

Ensuring Production Consistency

Commonality in Health Status

In a multi-site sow production piglet flow, ensuring uniformity in health status can be a challenge. RFW Farms Ltd does so by focusing on high health status, minimal age variation and identical vaccination schedules and dates in each sow herd.

Thinking Outside the Box

At first glance, ensuring consistency by thinking differently seems counter-intuitive. But as Martin pointed out, the best way to maintain a healthy herd is to instinctively look for signs of problems rather than waiting for a pig to get sick and then treating it.

Early indicators include:


- Exhibiting pain
- Fever
- Erratic behavior – Group or individual

- Abnormal environments
- Reduced feed intake
- Reduced water intake

By addressing a problem in the early stages, you can often avoid expensive antibiotics in favour of cheaper generic, single-dose drugs.

It may seem like a simple concept, but assessing your employees and finding the right motivation for each is no small feat. If all else fails, draw on that inspirational line the caveman used to keep himself focused on the task at hand: “Me want food.”

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Part three: Production Audit: How Different Production Systems Compare

Management often gets a bad rap from workers, as in “it’s management’s fault” or “sorry we’re under new management”. But without someone to manage the business, there is no business. In her role as Improvevst specialist and production manager for SouthWest Ontario Veterinary Services, Marsha Van Dinther has seen the best and worst that management has to offer. Her specialty is helping solve various production issues on farm, and she sought to help her audience do the same by examining some common management problems and solutions.

In Van Dinther’s experience, “management is the key to cost effective pork production”. Even the best managers encounter production issues however, and when they do, she is there to lend a hand, starting with a production audit.

Problems can stem from a number of factors including staffing concerns, seasonal effects, breeding techniques, conception issues or a combination of these. As part of her diagnosis, Van Dinther conducts an initial production audit, reviewing production performance (including record analysis) and shadowing staff onsite to identify areas of potential concern. She then creates an overview of the entire production system to help pinpoint the root cause of the problem.

Cases in Point

Sometimes, two different farms can have the same problem but require very different solutions. As an example, Van Dinther looked at a case involving Farm A and Farm B (not their real names):



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Farm A

- 1500 sow barn, one site
- Farrow to finish
- Conception failure
- 4-6 week failure rate of 7%
- Moderate farrowing rate
- Staffing turnover

Farm B

- 350 Farrow to finish
- Conception rate began at 90% and dropped to 50%

Intervention Strategies

As with all of her farm visits, Van Dinther took a team approach in these cases, involving the herd veterinarian, feed representative and production personnel.

Farm A

After spending time in the system and observing the staff and animals, she determined that timing of mating and sow condition were not ideal, there was a lack of boars and an issue in how the boars were being moved. After analyzing the farm's records, she also found a parity issue that was causing some of the conception concerns.

Working together, they changed the way breeding was conducted, increased the number of boars and improved the way they were being used. As well, they took a closer look at sow condition and ran sow back fat testing, leading to increased feed consumption and a reduction in late stage fall outs. Over time, they began to see improvements in conception and farrowing rates as well as increased litter size.

Farm B

The issue was similar to Farm A, but in this case it was a husband and wife operation that had recently undergone a depopulation/repopulation of the herd. Van Dinther and the team discovered issues around dealing

with a young repopulated herd and adjusted the timing of recently bred animals, as well as fine tuning feed intakes, heat checking and time of mating.

While every farm is unique, dealing effectively with people and having a knack for troubleshooting are key components of good management and a successful operation. In many cases, improving outcomes in one area of production can end up bettering others. So don't be afraid to scrutinize your business and make adjustments when necessary.

If it helps, remember the quote Van Dinther closed with describing "insanity" as doing the same thing over and over and expecting different results. And workers, whatever you do, don't blame your problems on the guy who signs your paycheck. Now THAT'S insane. ■

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Boar Pit panelists Dr. Luc Dufresne, Dr. Egan Brockhoff and Kevin Grier

Boar Pit takes aim at hot topics

Popular free-for-all ensures the last session is well-attended

By Terry Hockaday

Bullish market prospects for Canada and the U.S. Increasing stability throughout North America with respect to PED. Pressures facing production in Asia. Exchange rate forecasts.

The rising critical importance of biosecurity and rapid communication. The Pig Code and what it means.

These topics and more were part of a lively discussion of hot developments and issues facing the pork industry, during the popular Boar Pit session that wrapped-up the 2015 Banff Pork Seminar.

The session featured an interactive format, anchored by a panel of industry leaders speaking out on the big issues of the day, with questions and dialogue from an audience of over 200 producers, company reps and other pork industry players.

The panel included market analyst Kevin Grier, Dr. Egan Brockhoff of Prairie Swine Health Services and U.S.-based Dr. Luc Dufresne of Seaboard Foods, along with moderator Shannon Meyers of Fast Genetics, which sponsored the session.

Among key messages from the session:

- The U.S. view is that 2015 should be a good year for profitability but not like 2014, reports Dufresne
- Canada has a lot of positives pointing toward a good year as well, observed Grier, but short-term barriers could mute somewhat (though not derail) the rising expansion potential
- There is increasing stability throughout North America with respect to PED, but the broader world situation is an open question, says Brockhoff

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Kevin Grier listens patiently as moderator Shannon Meyers teases him about his earlier presentation.

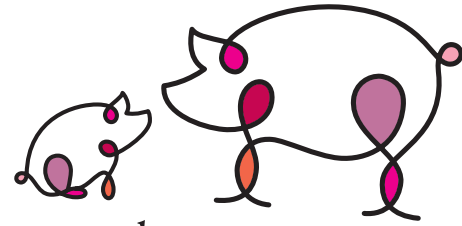
- Pig Code will require some practice changes and cultural changes, but it also comes with opportunities and that includes boosting the social license of the industry, says Brockhoff

A clear highlight to celebrate was the progress made on PED – which was announced to have first hit the Canadian industry exactly one year ago around the time of last year’s BPS Boar Pit session, where it understandably dominated the discussion.

How Canada has managed the threat has been outstanding, observed Brockhoff. “We have done a remarkable job on PED in Canada. We have come together, worked together, we’ve upheld our biosecurity. We should be extremely proud of what we have accomplished. If we maintain our focus, we have a very good chance of eradicating this virus from Canada, from coast to coast.” ■



Egan Brockhoff and Kevin Grier share a laugh during the boar pit.



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