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Cover Photo

Looking out from the eighth floor of the Banff Springs Hotel



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Message from the editor

The Banff 2022 edition of the Canadian Hog Journal is here!

This year's Banff Pork Seminar was truly like none other, employing an in-person and virtual hybrid model. With the rise of the COVID-19 Omicron variant, a sense of anxiety prompted the seminar's advisory committee to take a closer look at the logistics of returning to a completely virtual format, weighed against the risks associated with reneging on certain financial commitments.

Fortunately, the organizers were able to stick with their original plan, and the in-person portion was conducted with the health and safety of participants in mind, thanks to the seminar facilitators and Banff Springs staff who did a superb job of ensuring everything was conducted according to protocol.

Pig and pork market outlooks for the coming year are always popular presentations at Banff. This year, Alberta Pork's Bijon Brown provided his analysis of Brett Stuart's insights, which cover a broad base of topics like global finance, African Swine Fever (ASF) and climate concerns.

I took it upon myself to cover two less-than-comfortable subjects: public trust and vaccines. They are both massive and complicated in nature, and producers will definitely have competing opinions on the topics – all of which are valid, in my opinion. I respect that and encourage your feedback. Dialogue is the cornerstone of the Banff Pork Seminar, which celebrated its 50th anniversary this year, and I have included a historical look back at the event, the Canadian pork industry and Banff itself.

Vincent ter Beek, editor of Pig Progress, made the long trek from the Netherlands to attend the seminar and deliver the closing plenary session, covering his foray into agriculture. For me, it was an exciting opportunity to meet someone so accomplished and recognized within the industry. I even managed to have a quick chat with him and capture a selfie of us, which is shown on this page. Ter Beek's



presentation is also covered in the public trust piece that I penned.

Treena Hein, one of the Canadian Hog Journal's long-time dedicated freelance writers, dug into a presentation on Canada's ASF Executive Management Board (EMB) to ascertain producers' place within the bigger picture. She also covered a presentation on using alternative feed ingredients and strategies for keeping costs low.

On the side of herd health and management, our partners at Fast Genetics and PIC provided their advice on the best ways to incorporate breeding technologies into your operation and tips on how to use performance variation data to your advantage.

Stewart Skinner, a hog farmer and mental health advocate, provided his response to a presentation on farmer stress, from his own perspective as someone who struggles with depression and anxiety. Healthy coping strategies and looking out for each other remain the most important thing for producers to keep in mind, even beyond farming considerations. Everything else stems from there. The Canadian hog industry is better with you in it, and Skin-

ner proposes that more needs to be done to move past basic awareness of mental health in society toward a more concrete approach to offering – and funding – specific support mechanisms for farmers across the country.

Share your thoughts on this year's seminar and this edition of the magazine with me by email at andrew.heck@albertapork.com, and you could see your words appearing in our Spring 2022 edition, in May! Your comments, suggestions and ideas for topics to cover are always appreciated. ■





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Banff Pork Seminar hits half-century mark

Andrew Heck

Rocky starts lead to hardened legacies

Many roads (and rails) lead to Banff (and the Banff Pork Seminar), when it comes to transport corridors, frontier settlement and agriculture industry development.

As the Canadian Pacific Railway (CPR) reached the Bow Valley of the Rocky Mountains, in 1883, workers discovered natural hot springs on the side of Sulphur Mountain. The next year, CPR president George Stephen named the stop on the rail line 'Banff,' after his birthplace in Scotland. Rather quickly, CPR executives had a lightbulb mo-

ment and saw a bold vision for the entire area.

From the very beginning, the railway and Banff have been intimately connected. Not long after the station was built, CPR took the opportunity to commission the construction of the original Banff Springs Hotel, in 1888, and the site quickly grew into Canada's best-known mountain destination, bringing in guests from across the country and around the world.

There is no denying that Banff is an exceptional tourist destination, but Canadian transportation history is even more important for Canadian agri-

culture. Tourism across Canada today generates approximately \$40 billion in annual federal revenue, while agriculture comes in at a whopping \$140 billion, for comparison. This is thanks mainly to farmers from coast-to-coast who produce crop and livestock commodities, many of which eventually make their way to the Port of Vancouver to be shipped across the Pacific Ocean to Asian marketplaces.

But before they get there, these high-value goods must traverse a forbidding alpine landscape, whether by truck or train. The paths carved through the wilderness over the years cost many millions of dollars but also thousands of



The original Banff Springs Hotel looks majestic on this postcard, circa 1910. The building was destroyed by fire, in 1926, rebuilt, in 1928, and designated a National Historic Site of Canada, in 1988.

lives. It is a legacy of triumph and tragedy that we would do well to remember, for both the good and the bad.

The industry begins its ascent

Fast forward to 1972. The Banff Pork Seminar's roots were laid in Olds, Alberta, northwest of Calgary, where Olds College – a respected agricultural technical institute since 1913 – hosted the first version of the event, with the cooperation of Alberta Pork, the Government of Alberta and the University of Alberta. These long-time partners are still intimately involved today. This year, the Banff Pork Seminar officially reached its half-century milestone, inspiring the advisory committee to settle on the theme, '50 Years of Knowledge and Sharing.'

Normally, the seminar attracts upwards of 800 guests, but this year, only about 200 individuals were welcomed in-person and 400 virtually. Not bad, considering that the spread of the COVID-19 Omicron variant seriously jeopardized the event's status right up until two weeks before a final commitment was made to move forward with the in-person and virtual hybrid concept. It is the first major pork conference to take place this way in Canada since the start of the pandemic.

Research has always been the driving force behind the seminar. In 1988, a now-legendary man named George Foxcroft was sponsored by Alberta Pork to move to Canada from the U.K. as a research chair at the University of Alberta. He led the Swine Reproduction-Development Program there until his retirement, in 2012, when he became a professor emeritus.

"George was a global leader in the field of regulating ovarian function and early pregnancy loss, and he was the Canadian authority in understanding reproductive physiology of the pig," said Ruurd Zijlstra, a researcher at the

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'Olds' Pork Seminar? The very first installment of the Banff Pork Seminar was held in a different location, at a different time of the year, as noted in this announcement published in the April 1972 edition of the 'Alberta' Hog Journal, precursor to the 'Western' and 'Canadian' Hog Journal.



Since making the move to Banff, in 1973, the seminar has been held at different venues, but the Banff Springs Hotel, shown here in the Western Hog Journal Spring 1989 edition, has always been a preferred spot.



World-renowned swine researcher George Foxcroft was honoured at the 2022 Banff Pork Seminar. He passed away in December 2021.

University of Alberta who has long been involved with the seminar. “Throughout his research career, George focused on maintaining a two-way dialogue with the industry to understand their problems and success. His goal was always to “bring research to reality.”

Each year, Foxcroft’s legacy is honoured during the Banff Pork Seminar with the ‘George R. Foxcroft Lectureship in Swine Production.’ This year was the first time the lectureship was awarded by someone other than Foxcroft himself, after he unexpectedly passed away just over a month before the seminar. The lectureship was established in 2013 to recognize outstanding international pork industry representatives and cover their costs to attend and present at the event. Foxcroft will be truly missed, but his legacy as a leader in the Canadian pork industry will endure.

Canadian pig science and pork trade emerge

Now, flash way back to the early 17th century. According to Trevor Sears, President & CEO, Canada Pork, who presented during the first plenary session of the 2022 Banff Pork Seminar, pigs first arrived in New France (today’s province of Nova Scotia) with settlers

who brought the animals to be raised and consumed as a convenient source of sustenance. It took 200 more years, until the mid-19th century, when Canadian domestic pork trade finally took off.

Eastern Canada was already thoroughly inhabited by this time, and to satisfy a growing demand for meat not only in

Canada but also in Britain and the U.S., pork packing plants began popping up in the cities surrounding the Great Lakes and St. Lawrence River, earning Toronto the nickname ‘Hogtown.’ This period of time marks the beginning of Canadian international pork trade.

At the same time, settlement in western Canada was actively starting to take place, largely aided by railway expansion. The same infrastructure development that brought people westward would become responsible for enabling a large part of the export system that exists today, with 70 per cent of Canadian pigs and pork ending up in foreign countries. As with many other agricultural commodities in Canada, this globalized reality is the backbone of our commercial industry.

In 1947, the first-ever Canadian-developed hog, the Lacombe breed, was registered as a cross between Landrace, Berkshire and Chester White varieties, treasured for its suitability to the Canadian climate. The breed was created at Agriculture and Agri-Food Canada’s (AAFC) Lacombe Research and Development Centre in Alberta, southeast



The Lacombe breed was an important Canadian innovation, in 1947, championed by Howard Fredeen. By 2020, the breed had nearly vanished from Canadian farms. Halbern Farms near Lacombe, Alberta, shown here, is one of the few still raising the animals. Fredeen passed away in December 2021 not long after his 100th birthday.

of Edmonton. The breed's development was spearheaded by Howard Fredeen – another industry titan who sadly passed away in the week leading up to this year's Banff Pork Seminar. Like Foxcroft, Fredeen is lost but will not be forgotten.

Domestic and international markets continued to grow throughout the 1960s and 1970s, and by the 1980s, hog farming reached its peak across Canada. Starting in the 2000s, the number of hog farms started to decline dramatically, but production steadily increased. It is a common trend throughout the world of commercial livestock, and it defines our sector today.

Two Banffs but only one Banff Pork Seminar

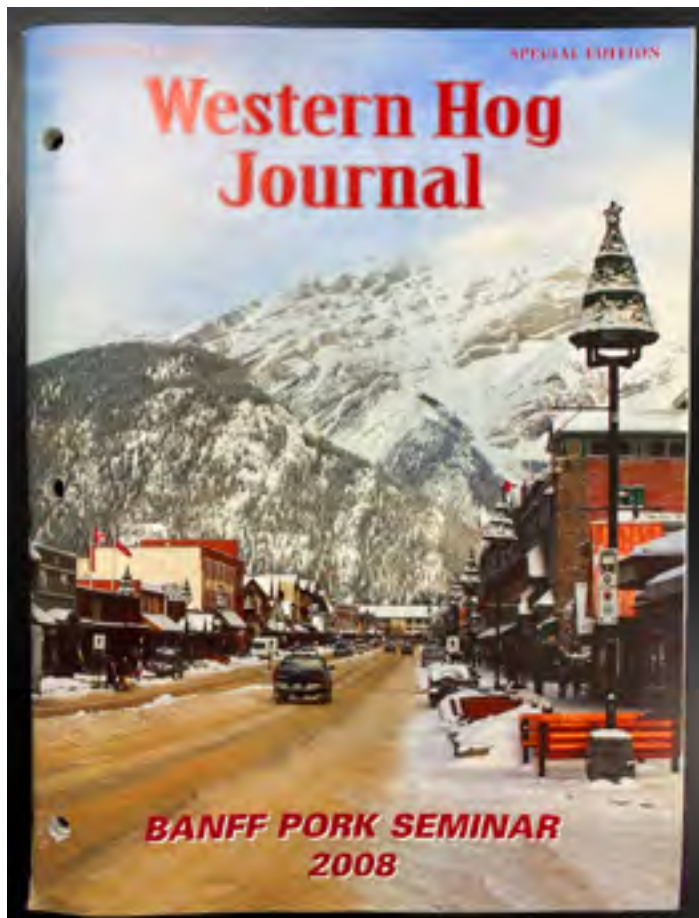
When CPR president George Stephen decided to name his new western Canadian train stop after his Scottish hometown, it is hard to say whether he knew

the settlement would one day eclipse its namesake in terms of recognition and importance to commerce.

Less than a century later, the Banff Pork Seminar would leverage that reputation and blossom into Canada's best-known pork conference, having carved-in-stone a significant chronological milestone of its own. History has an interesting way of playing out.

Other jurisdictions all over the world raise pigs, process pork and perform important research and extension activities that benefit the global swine sector. Many of these jurisdictions are more populous, more productive by total volume and just as proud of their accomplishments as we are of ours. But the fact remains: there may be two Banffs, but there is only one Banff Pork Seminar.

Here is to the last 50 years of excellence and many more to come! ■



The Canadian Hog Journal has published a special Banff Pork Seminar edition annually since 2008. This year's edition will be our 15th.

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Vaccines show promise for pigs and producers

Andrew Heck



The 2022 Banff Pork Seminar welcomed only about one-quarter of the in-person attendance as in 2020 and in years prior. Full vaccination against COVID-19 was a requirement for those present.

To jab or not to jab: be it due to on-farm herd management practices or public health concerns, the world is looking for ways to prevent antimicrobial resistance and also overcome a global pandemic. For hog farmers, immunization of pigs and people is improving health and welfare one shot at a time.

During the 2022 Banff Pork Seminar, two presentations related to vaccines highlighted the important role they play in pig production: one by grad student Alison Jeffery on an encouraging development related to managing *Streptococcus suis* and one by veterinarian Cordell Young on how to maximize your farm's vaccine program.

While these presentations were video-recorded for virtual participants, those fully vaccinated against COVID-19 were able to attend in-person. This requirement underscores the significant – however heavily debated – role that vaccines will likely play in all industries going forward.

Strep suis vaccine development moves ahead

Streptococcus suis is found in most jurisdictions with well-established

pig industries. These bacteria include 29 serotypes or variants and are zoonotic, meaning they can be transferred to humans. For pigs, infection affects the upper respiratory tract, and controlling its spread is usually done with antibiotics. Both sick and healthy pigs can be carriers, and in piglets, there is a risk of arthritis, meningitis and sudden death.

To date, vaccines against *Strep suis* have been ineffective, but research from the University of Montreal, led by Alison Jeffery, has found that applying an autogenous sow vaccination program increases maternal antibody levels in piglets up to five-weeks-old, depending on the serotype.

Autogenous vaccines rely on isolating bacteria from an individual herd, rather than mass production for use on all herds. Whereas conventional vaccines are strictly used to help prevent community transmission or reduce the severity of infection, autogenous vaccines can also



Alison Jeffery presented on her award-winning *Strep suis* vaccine research, during a breakout session at the 2022 Banff Pork Seminar.

be use therapeutically, which is a major advantage for producers.

The process involves the recognition of *Strep suis* clinical signs in a herd, followed by collecting infected tissues for sending to a vaccine development lab. Development takes place rather quickly and is fairly cost-effective, relative to potential losses due to spreading illness.

“The vaccine induced a significant increase of antibody levels against all serotypes in gilts, compared to placebos,” said Jeffery. “Post-mortem sampling and bacteriology are very important to correctly identify the cause of death in field trials and herd health management.”

Post-weaning piglets are most at-risk of *Strep suis* infection, but previous research suggests that injecting piglets directly with two doses of autogenous vaccine did not have any effect on improving antibody levels, which hypothetically would have provided those individuals with a better chance at staving off infection. Previous studies relied on autogenous vaccines produced by a single company, so Jeffery decided to look elsewhere for her trial. The newly developed test vaccine was administered to one group of gilts, while another group remained unvaccinated. Then, piglets born to both groups were compared for immune response.

The study results are impressive but will require a deeper dive to fully characterize the clinical protective effect during the nursery period.

“The strains used for autogenous vaccines are isolated on the farm where the outbreak is occurring, so some strains could be more pathogenic than others, and that could have a big effect on the success of an autogenous vaccine from one farm to the next,” said Jeffery. “The herd history with *Strep suis* could also contribute.”

Using antibiotics to treat *Strep suis* may appear effective at dealing with clinical signs of illness, but in addition to con-

cerns over antimicrobial resistance, this approach makes it difficult to identify which serotype of *Strep suis* is in a herd or if the clinical signs belong to a *Strep suis* strain at all.

“It can be uncomfortable to ask farmers to move from antibiotics to a vaccine program, because they can see it right in front of them – you can see if the animal gets better,” said Jeffery. “But I think, over time, vaccination programs are going to save producers time and money, as antibiotics cost a lot each year, and now with different regulations worldwide, antibiotics may not be an option we can use easily in the coming years.”

Moving away from antibiotics presents challenges and opportunities, but thankfully, a separate presentation at Banff provided some helpful advice.

Optimizing your on-farm vaccine program

Cordell Young is a partner with Precision Livestock Veterinarians. Young recognizes that vaccine programs are not always cheap, but that their value goes well beyond the price tag.

“Vaccines cost money, unfortunately,” said Young. “They cost probably 40 to 50 per cent of the total veterinary costs for a pig producer in a year. If we’re spending that money, we need to make the most of it, and if we’re not, we’re probably making a bad investment.”

Vaccination offers a wide range of benefits over simple treatment, from total cost to duration of protection, versus the possibility of causing zoonotic disease outbreaks or contributing to antimicrobial resistance and further eroding public trust in the hog sector. That is a lot for any individual producer to consider, but it is vital for the industry to recognize.

And while the benefits are extensive, proper handling and administration of vaccines is important for producers to learn. Improper usage can lead to a host of problems related to animal and human health or could simply render vaccines

ineffective, which would equal wasted time, money and effort.

“First of all, start with the right needle. If you go with a half-inch needle into a sow, you’re likely going to inject that vaccine into fat, and it won’t absorb,” said Young. “Alternatively, if you go with an inch-and-a-half needle into a piglet, you are more at risk of breaking the needle and putting the entire industry at risk of political and food safety challenges.”

For vaccines that are ingested through feed or water, other considerations should be made as well.

“These are live vaccines which we cannot use with any other medication or water treatments in the path of those vaccines for 72 hours before or after,” said Young. “They’re great products, and it’s great to be able to put a vaccine through water, but we can kill these bugs. They’re pretty weak bugs in general. Watch the time.”

Freezing is another threat to vaccine stability. They should be stored between two and eight degrees-Celsius – ideally in a refrigerator exclusively dedicated to vaccines – and it is useful to periodically verify the temperature using an infrared laser thermometer. Prior to administer-

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Cordell Young presented on a range of issues related to the successful integration of a vaccine program for hog herds, during a breakout session at the 2022 Banff Pork Seminar.



A less-familiar sight in recent years: producer meetings in some regions are returning in-person, with COVID-19 protocols in place.

ing the vaccine, Young suggests letting the product come to ambient temperature overnight, but producers should be

careful not to overheat vaccines, as this could cause proteins to become denatured, rendering them ineffective.

Not only correct storage of vaccines, but also vaccine equipment, like syringes, matters. Equipment should be cleaned, dried and covered for optimal performance and to prevent the inadvertent injection of residual harmful bacteria into your herd, which is counterintuitive, but a lot more common than some might assume.

“Bacteria are in these syringes, and we’re seeing resistance,” said Young. “Clearly, just by the fact that they’re there, with syringes containing Class 1 antibiotics, and then we’re injecting that into potentially every pig in a group.”

Every farm is different, and every vaccine program should be tailored to your operation. By closely monitoring your own program, through observation and record-keeping, success should follow.

“Unfortunately, it is a reality that no vaccine will work 100 per cent, provid-



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ing 100 per cent immunity or protection, and for an unlimited duration of time,” said Young. “However, we want to do everything we can to optimize the response to vaccination to get the most out of our investment.”

COVID-19 vaccines are making meetings possible

As the industry becomes increasingly eager to move beyond COVID-19 restrictions, the call for re-introducing in-person producer meetings grows louder; however, this has proved challenging, given competing ideas about the situation at hand.

The Government of Alberta’s Restrictions Exemption Program (REP), which was first implemented in September 2021 and removed in February 2022, stipulated three conditions for large-size in-person gatherings: full vaccination status, a privately paid negative test result or a medical exemption. Further to this, some venues chose to uphold stricter measures, as was the case with the Banff Springs Hotel, where the Banff Pork Seminar was held. Only fully vaccinated attendees were permitted, regardless of test results or potential exemptions.

Alberta Pork’s semi-annual meetings, taking place in mid-March, mark the two-year anniversary of the initial introduction of restrictions in the province. This year’s meetings will once again take place in-person across the province, after last year’s semi-annual meetings and the two previous annual general meetings (AGMs) were entirely virtual.

While the COVID-19 *pandemic* is not over, arriving at an *endemic* situation – where the virus is still present, but stable in terms of case numbers, and more predictable – is a worthwhile and hopefully achievable goal made possible by eventual widespread immunity. Time will tell, but the longer we live with COVID-19, the greater the push will be to accept vaccination as industry-standard, as everyone



Vaccines are a key component of PigCARE – a pillar of the Canadian Pork Excellence (CPE) program. Thanks to quality assurance, global pork buyers trust that Canadian producers are ‘doing the right thing’ when it comes to animal welfare, biosecurity and food safety.

– vaccinated or not – loses patience with restrictions.

Vaccines are no miracle cure, but they help

Whether for pigs or people, vaccines have the ability to save lives. And for producers, money. But they are neither perfect nor magical, which is why biosecurity measures on-farm and safety measures like masking and physical distancing at meetings are still necessary, even if not everyone agrees on their application. Being safe, rather than sorry, is a reasonable approach when minor inconveniences can protect against potentially life-threatening outcomes.

Perhaps nothing else besides vaccines have created more controversy recently, whether that relates to preventing antimicrobial resistance or supporting public health. Regardless of how they are used, or what anyone believes on a personal level, vaccines are likely the future for the Canadian hog industry and the world. ■

Farmers' place within ASF preparedness

Treena Hein

As everyone in the industry is well aware, activities to prevent African Swine Fever's (ASF) entry into North America are currently heightened due to ASF detection in Haiti and its continuing spread in Thailand, Europe and elsewhere.

Should ASF be detected in North America, it is critical that Canadian hog farmers actively continue using the latest protocols to prevent the spread but also to prepare for what to do should ASF reach Canada, in terms of handling 'stop movement' orders and more.

Before we look at these protocols and what should be in every farmer's ASF preparation plan, let us quickly look at the big picture. Christa Arsenault delivered a presentation during the second plenary session of the 2022 Banff Pork Seminar. She is the national ASF project manager with Animal Health Canada (AHC), formerly the National Farmed Animal Health and Welfare (NFAHW) Council and the acting chair of Canada's ASF Executive Management Board (EMB).

"EMB came to be in 2019 as a pilot project, and it has received funding from industry and government on an ongoing basis," said Arsenault. "Its first task was to create the Pan-Canadian ASF Action Plan, which encompasses many working groups and initiatives, both national and provincial. Many lessons learned and honing of strategies has occurred through operation of the EMB, including the importance of improved coordination between all the pillars, working groups and sub-working groups."

Activities related to ASF prevention and preparedness on Canada's hog farms fall under all of the four pillars of the action plan. Pillar 1 is 'Enhanced Biosecurity and Prevention'; Pillar 2 is 'Preparedness and Planning'; Pillar 3 is 'Ensuring Business Continuity'; and Pillar 4 is 'Coordinated Risk Communication.'

Pillar 1 includes the 'Biosecurity Working Group,' which is develop-



Canada's African Swine Fever (ASF) Executive Management Board (EMB) is a large patchwork of national stakeholders aiming to defend the country from a disease incursion. For farmers, more localized, individual planning is necessary.

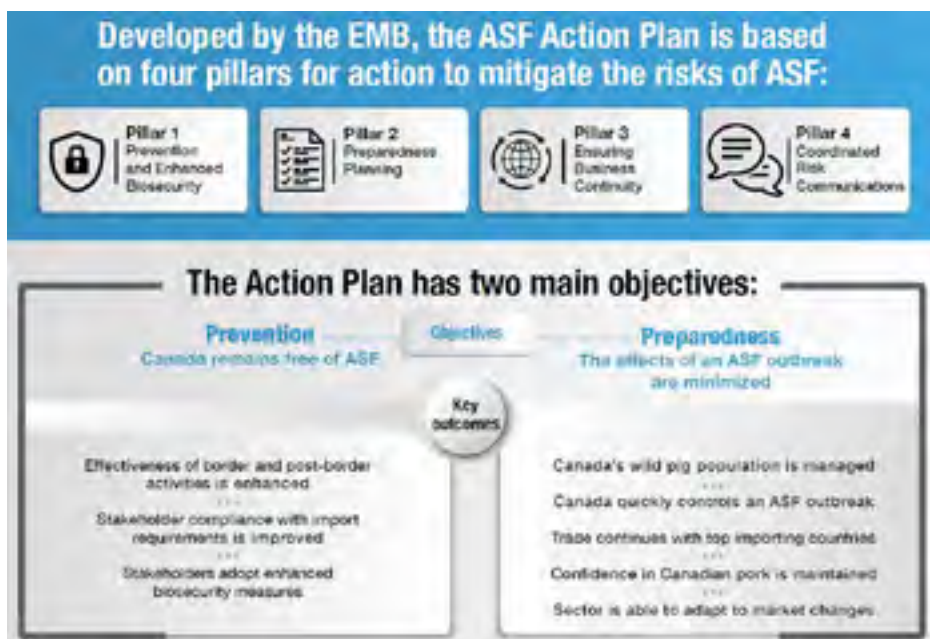
ing a voluntary biosecurity standard and benchmarking tool for farmers. It should be ready later this year and will be available through the Canadian Pork Council (CPC). The standard's co-creator, Egan Brockhoff, veterinary counselor for CPC, provided a preview of what producers can expect.

"There are four levels, and producers should examine each level to see which makes sense for their farms and surrounding circumstances," said Brockhoff. "For many farms, Level 1 or 2 of the tool will be sufficient. Farms in an area with a lot of PRRS [porcine reproductive and respiratory syndrome] should meet Level 3 standards, for example. Meeting Level 4 will allow you to protect against highly infectious, aerosolized, multi-species diseases with many contamina-

tion pathways. We are piloting the tool right now, and we are also updating the on-farm National Biosecurity Standard for swine."

The National Biosecurity Standard for swine was developed in 2010 with the authority of the Canadian Food Inspection Agency (CFIA), one of the ASF EMB's core partners. CFIA develops national biosecurity standards, protocols and strategies designed to protect farm animals, in collaboration with producer organizations, provincial governments and academia.

How do biosecurity standards currently factor into ASF planning at the farm level? Producer training and resources provide the answer.



The four pillars of the ASF EMB

Emergency preparedness on-farm

Among other resources available from AHC is the 'Animal Health Emergency Management Producer Handbook,' an easy-to-navigate document developed as part of a suite of disease-related resources. This tool helps producers prepare for disease outbreaks, including ASF, and provides customized support for various stages of an outbreak. Mikki Shatosky, project operations manager with the Animal Health Emergency Management (AHEM) project, explained further.

"The resources in the handbook have been designed to help producers understand, prepare and respond to a disease emergency," said Shatosky. "Our goal was to create a comprehensive support tool that would not only shed light on what can be expected during an outbreak but also guide producers as they develop and implement emergency management plans, policies and procedures."

Shatosky noted that every producer's situation is different and that many aspects of an incident response will vary from province to province and region to region. Circumstances also change over

time, so it is important for all producers to regularly review and update their emergency plans.

"Prior to the [COVID-19] pandemic, we were in a steady rhythm of hosting workshops across Alberta to help pork producers prepare for an emergency,



The Animal Health Emergency Management (AHEM) project hosts producer workshops, such as this one, during the 2020 Banff Pork Seminar. More recently, workshops have been held virtually.

and our goal was to roll this out in other provinces," said Shatosky. "Like so many others, we've now pivoted to offering virtual workshops that have been extremely well-received. In fact, since March 2020, we have held more than 25 online emergency preparedness webinars for various livestock commodity groups."

The workshops help familiarize participants with available resources, while covering important topics such as biosecurity measures and 'stop movement orders.' Producers also benefit from a practical component that tests readiness with realistic scenario-based exercises.

The AHEM project is eager to eventually return to the in-person workshop experience, but in the meantime, the team is continuing to offer engaging up-skilling alternatives.

Plan not required, but recommended

Hog farmers in Canada are not required at this time to have an emergency preparedness plan that addresses ASF or

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AFRICAN SWINE FEVER

African swine fever (ASF) is a viral disease that only impacts pigs. As it spreads around the globe, it poses a significant risk to the health of the Canadian swine herd, the pork industry and the Canadian economy.

VIRUS

There is currently no cure for African swine fever. [Learn more about the virus and its signs.](#)

FEED

African swine fever (ASF) and other foreign animal diseases (FAD) can be transmitted via feed or feed ingredients imported from countries where these diseases are present. [Find out how to minimize that risk!](#)

WORLDWIDE IMPACT

Humans cannot catch ASF from infected pigs-not can they contract the disease by eating meat from a pig infected with ASF. But humans can spread the disease and infect pigs in many ways. [Find out how the disease is spreading in other countries and the risk factor to Canada.](#)

African Swine Fever

- ASF Resources - Printables
- ASF News and Updates
- African swine fever virus and signs
- African swine fever in other countries
- Preventing ASF from infecting Canadian pigs
- How ASF can affect small scale producers and pet owners
- Transmission of virus through feed and feed ingredients
- ASF Townhall

The Canadian Pork Council (CPC) website includes ASF planning and preparedness resources for producers.

farm biosecurity in general. However, it is obviously strongly recommended.

“It would be great to have [a mandatory plan requirement], helpful for everyone, not just the farms, but today there is no program or legislative requirements,” said Gabriela Guigou, manager of the National Swine Health Initiative for CPC. “We are taking the lead to update the biosecurity standards and provide a benchmarking tool, and for the emergency preparedness plans, the provincial members are taking the lead.”

Producers are encouraged to contact their provincial pork boards for help creating emergency plans. You can get started by checking out the resources, including training videos, available on the CPC website and on the website of your respective provincial board.

As ASF emergency planning and preparedness continue to evolve, and as the threat of ASF grows stronger, producers must be proactive in taking care of their own operations, with support from their provincial and national boards, veterinarians and other experts. The time to protect your herd is now or never. ■

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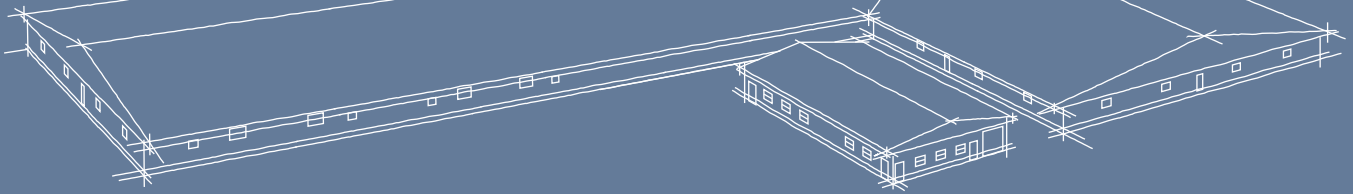
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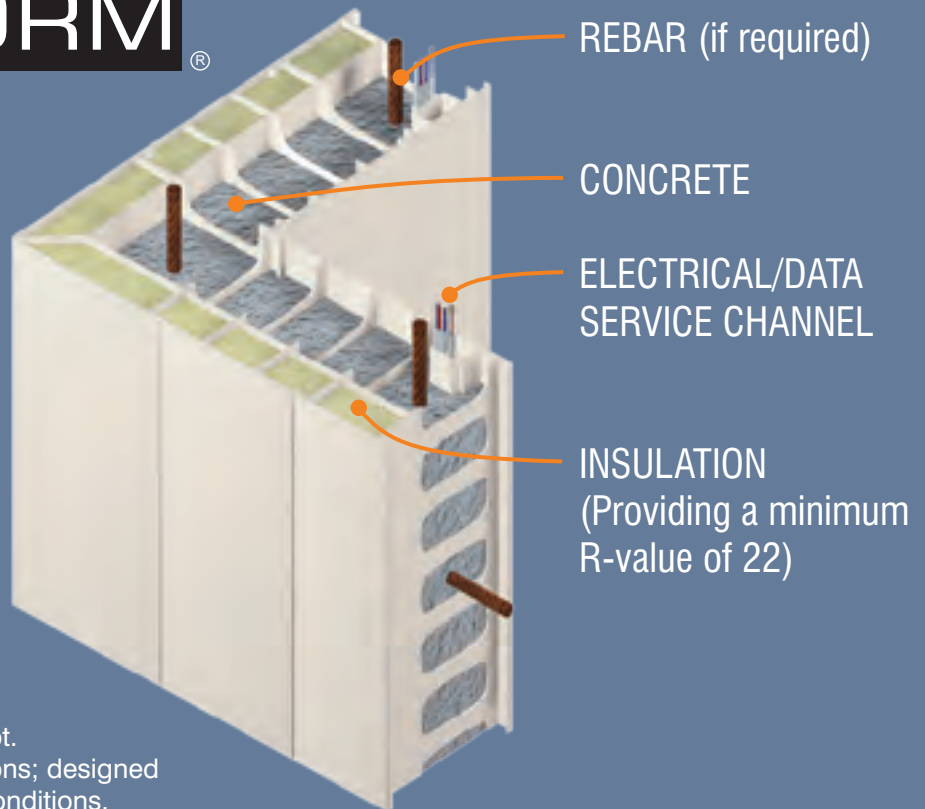
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Disease, inflation, climate issues could define 2022

Bijon Brown

Editor's note: Bijon Brown is the Production Economist for Alberta Pork. He can be contacted at bijon.brown@albertapork.com.

Human and animal disease, inflation and eco-consciousness all have a role to play when it comes to hog market trends in 2022. Brett Stuart, an analyst with Global AgriTrends, delivered a presentation during the first plenary session of the 2022 Banff Pork Seminar on the hog industry's economic outlook for this year, highlighting some key challenges and opportunities facing producers.

COVID-19 not going away just yet

COVID-19 continues to be a recurring nightmare. It has brought the global economy to its knees, impeding productivity and the movement of goods and services for more than two years. The latest variant, Omicron, seems to be less lethal but more highly transmissible relative to the other strains of the virus.

"This thing is going to last a lot longer than people think," said Stuart. "But I expect the severe effects will fade in 2022."

The lives lost and long-term health complications associated with COVID-19 could have a lingering impact on the domestic labour pool for years and decades to come. Unions have taken advantage of labour shortages to push for higher wages at a time when business revenues have been down. With fewer people showing up to work, the government response in Canada and the U.S. – where Stuart is based – has mostly involved throwing money at the problem.

"It's the world's largest macroeconomic experiment. The wildfire is COVID-19, and the fire bomber is the U.S. Congress," said Stuart. "And it isn't just the U.S.; economies around the world, and governments, have done the same thing... When does the party end? The party doesn't end until the money runs out. And there's a mountain of money."

The amount of money circulating in the economy grew significantly during the pandemic. In Canada, money supply grew by almost 30 per cent to roughly \$1.3 trillion. This accelerated stimulus

was necessary to keep the sputtering economy from stalling in mid-flight. The surge of money supply, combined with low interest rates, generated increased demand, especially in 2020.

What were considered everyday activities pre-pandemic – such as eating out, travelling and attending large-scale events – came to a halt as COVID-19 restrictions were put into place. With consumers looking for ways to keep spending, attention was diverted to home buying, home renovations and other isolated forms of activity. This placed pressure on product and service inventory levels, and with the supply chain on life support, significant bottlenecks were created. Ultimately, high demand and significantly constrained supply had to be resolved by higher prices, generating inflation.

By spring of last year, inflation awoke from its decade-long slumber and has been ballooning ever since. Canadian inflation soared to a 30-year high of 4.8 per cent in December 2021, some 1.8 to 2.3 per cent above the Bank of Canada's target rate. With inflation this high, many analysts were expecting our central bank to raise interest rates in January 2022.

Instead, rates were kept steady, mainly due to the economic concerns stemming from the spread of Omicron. The Bank of Canada did, however, hint that rates will be increasing in the future, which could be as early as March. For producers with variable interest rates on their debts, it may be a good time to consolidate that debt into a low, fixed rate, as five to seven rate hikes are expected this year alone in Canada and the U.S.

"Interest rate hikes put increased pressure on consumers," said Stuart. "That's a BB gun approach to a big problem."

An interest rate bump is only half of the response to inflation; the other half is

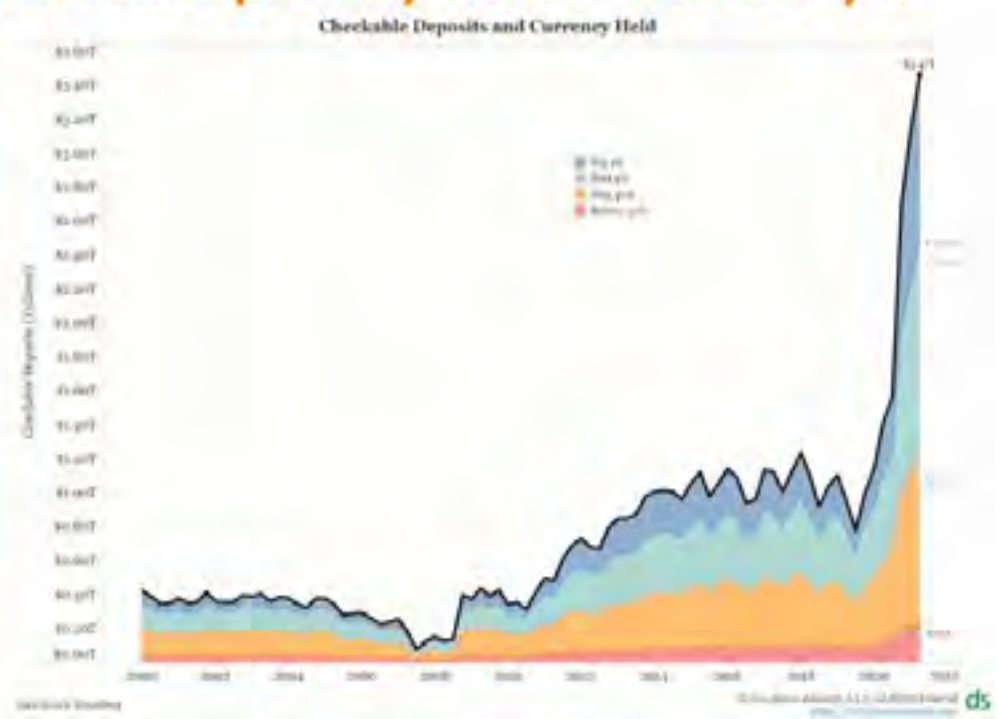


Brett Stuart's commodity market commentary was shared live, via video, for in-person and virtual guests at this year's Banff Pork Seminar.

Cash is everywhere...especially with the wealthy...

At \$3.5 trillion, checking account balances are still 4x higher than pre-COVID.

While all income groups have saved more, 65% of all the cash in checking accounts is held by the wealthiest 10%.



Getting low on cash? Print more! It sounds simple, but the COVID-19 financial response is pushing the economy toward inflation, which touches many aspects of the hog industry.

getting the economy's output to increase. This is largely outside of the central bank's control, but without getting goods moving and people working again, there is a real risk that interest rate increases could trigger another recession, which could result in lower interest rates again.

The general theme of inflation in 2021 held true even for the hog industry, al-

beit for slightly different reasons. Hog margins eroded toward the second half of the year, due to higher farm input costs. For the livestock sector, much of that is represented by feed costs.

From a global perspective, grain prices could remain somewhat elevated this year, as a drought in Brazil and tensions between Ukraine and Russia intensify.

Ukraine, being a significant exporter of corn and wheat, could have grain shipments heavily curtailed as a result of military conflict. This means tighter global supplies and higher grain prices. China's role in the phenomenon has also become elevated.

"Hog prices in China fell 70 per cent last year. Corn didn't," said Stuart. "Until

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that Chinese corn price breaks, be very careful believing you're going to get cheap corn this year."

China has also been stockpiling grain and fertilizer. The country is one of the largest producers of nitrogen and potassium fertilizer but chose to ban exports late last year through to at least June this year. For more than three years, African Swine Fever (ASF) has been stubbornly flaring up and dying down in China, which has caused pig and pork prices and supply to rise and fall out-of-control.

China remains a mystery

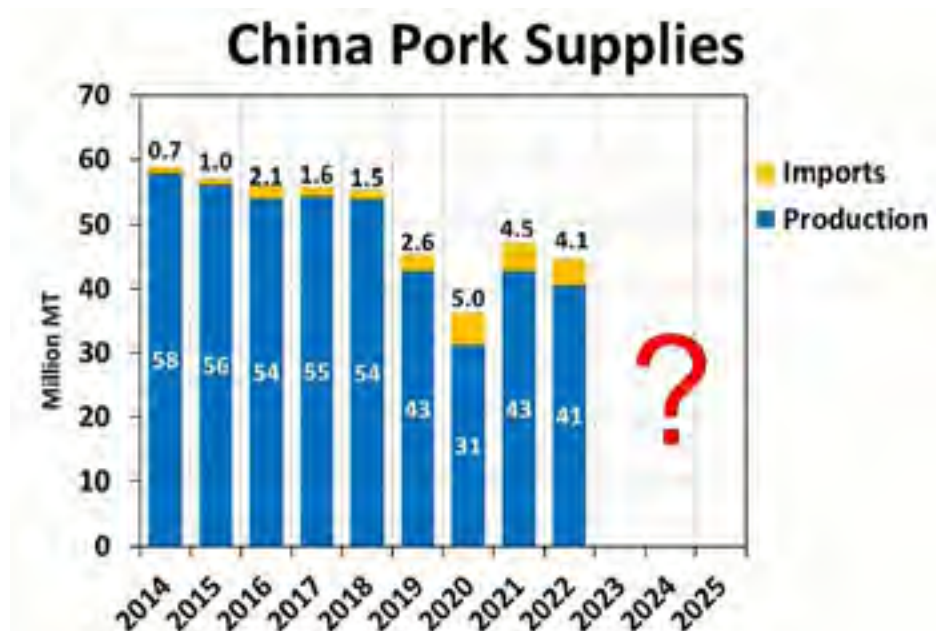
Internationally, the wild card in the pack is China. China is such a significant player in both the hog and grain markets that its actions can single-handedly change global prices. Over the past few years, China has used its ability to influence the market by manipulating supply, demand and prices in its favour.

"A Chinese shortage of 18 million tonnes of pork drove them to import a whopping only five million tonnes of pork," said Stuart. "They could've imported much more. In fact, if you watched our markets in 2020, it was like China bought just enough pork off the U.S. and Canadian markets that it did not affect the price. They're fine going without."

Throughout 2021, Chinese hog prices were at or below the cost of production, after having been the equivalent of \$300 per hog in 2020. Given that plummet in price, rapid liquidation of domestic hogs followed. To help create a bit of breathing room, the Chinese government cut pork import permits, restricting supply and providing some level of price support.

China's 'hog hotels' – ironically, constructed in response to ASF – could well be ideal disease breeding grounds.

"The ASF story in China is far from over," said Stuart. "I question whether the mega-farm concept really works. I think they're going to prove that may have been a bad idea. It isn't just ASF in China; it's a raft of every swine disease known."



With reduced supply but increased demand, curtailing imports does not seem like the logical move. But for China, unique political considerations are always at play.

As China struggles mightily with ASF, the disease continues its march west in Europe as well, infecting more barns in Germany and, most recently, Italy. These outbreaks have effectively taken Germany and Italy out of the export market. As the economic impact of this disease continues to escalate in Europe, Stuart believes government financial support may be required to get the European Union (E.U.) out of this crisis.

"I think the E.U. swine sector is headed for contraction in 2022," said Stuart. "I think there's going to be some talk and lobbying for a bailout – there's going to have to be some government money."

But when it comes to using cash as a bandage solution for ASF, it begs the question as to how much the industry and governments have learned from this approach to COVID-19. For at least two months prior to the pandemic, we in North America watched the COVID-19 devastation rip through Asia and Europe, but we did nothing proactively to stop it from coming to here. Will this happen with ASF, even if slower?

With ASF now on the doorstep of mainland North America – with cases popping up in the Caribbean – prevention efforts must be increased in an attempt

to keep ASF out of Canada and the U.S., specifically. Whether prevention succeeds or fails, the world needs a cure.

ASF preparedness is top priority

A great deal of work has been done on crisis response and the emergency protocols that must be in place if ASF is found in Canada. This includes establishing zoning agreements with trading partners, drafting biocontainment measures to isolate potentially affected farms and developing protocols for the destruction and disposal of pigs. These are all very important, but rather than waiting for the disease to arrive, novel solutions should be sought to address the virus itself.

Many countries around the world have been working on ASF vaccines, but to date, none have been proven effective or safe. In January 2022, the Vaccine and Infectious Disease Organization (VIDO-InterVac) at the University of Saskatchewan received \$140,000 in funding for preliminary work related to the development of an ASF vaccine. This is a good start, but it is clear that not enough resources have been dedicated toward staying off this impending crisis that would wipe out the Canadian hog industry.



VIDO-InterVac has been awarded funding to develop an ASF vaccine, which remains elusive worldwide. For all of the planning to mitigate and manage ASF, vaccine development could be the winning ticket.

In August 2021, the Government of Canada established a partnership with Moderna – a leading COVID-19 vaccine developer – to build a state-of-the-art vaccine production facility in Canada. Perhaps a when a suitable ASF vaccine is found, such a facility could be used to quickly ramp up production.

If ASF enters the U.S. wild boar population, it could cost around USD \$50 billion to rectify. Even though the Canadian industry is much smaller than the U.S., spending millions to prevent ASF would be way more practical than spending billions to in response to its arrival in our countries. As such, it may be worthwhile for the industry and governments

to invest more heavily in vaccine development and treatment option research, rather than risk being stuck with the cost of ASF clean-up.

Methane joins carbon as climate evils

At the beginning of January 2022, the Canadian price on carbon dioxide emissions increased to \$50 per tonne, placing further strain on cost of production, as hog barn heating fuels are not exempt from the levy.

A study by Alberta Pork and Sask Pork, conducted nearly a year ago, assessed the carbon tax impact for farmers to be between \$1.06 and \$1.32 per hog in 2021,

growing to between \$1.32 and \$1.65 per hog in 2022. That is no small amount, considering everything else hammering away at profitability.

The Governments of Alberta and Saskatchewan issued a constitutional challenge to the carbon tax before the Supreme Court of Canada in March 2021, which ultimately failed. In October, the Trudeau government doubled down and confirmed its support for the United Nations' (UN) 'Global Methane Pledge,' which is poised to have significant implications for global agriculture. The plan is to cut methane emissions by 30 per cent below 2020 levels by 2030. This means that producers may be motivated to rethink strategies related to manure management and barn heating, to remain viable.

“The new war on global warming is a war on methane,” said Stuart. “If you go after methane, look who you get to go after: livestock.”

Stuart pointed to the work of researcher and professor Frank Mitloehner of the University of California-Davis as an example of how the story of methane has been distorted or misrepresented when it comes to the impact of livestock on the environment. Mitloehner – a prolific presenter and social media influencer within animal agriculture – published a lengthy podcast in December 2021 covering the issue.

“Globally, there are 560 teragrams of methane produced and 550 teragrams of

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methane reduced. In other words, there is a significant atmospheric removal of it. What that means is that there's a process that kills methane. And why nobody reports about it, I don't know," said Mitloehner. "This whole climate discussion around livestock is more of an opportunity than a liability."

The opportunity, according to Mitloehner, is for animal agriculture in the developed world to curb methane output, which could have a significant effect on reducing global temperatures. As an example, in California, dairy farmers can increase their revenue by around 50 per cent by covering their manure lagoons and capturing the renewable biofuel produced, which can be used to power farm machinery and trucks. Here in Canada, it might make sense to encourage the adoption of similarly innovative strategies.

Unfortunately, despite attempts to clarify the narrative, we have seen limitations placed on hog barn expansions in Europe for this very reason. The UN's pledge is a clear signal that the hog in-

dustry needs to be proactive in measuring and reducing methane emissions to remain competitive.

Stuart estimates that, by 2040, the world will be short 23 million tonnes of pork. For producers who are able to withstand the war on methane, victory could mean higher hog prices and more profits spread across fewer global players. It may be an opportunity to get ahead of the pack and be an industry leader.

The horizon is hazy with signs of hope

Although Stuart sees a few short-run challenges to the hog industry, he also sees the light at the end of the tunnel. Business diversification and continued innovation are keys to a robust business model. The aim should be to develop new international markets while satisfying existing international customers and working to grow domestic pork consumption.

For the Canadian and U.S. hog industries, COVID-19, ASF and climate concerns reign supreme as threats this year,

but threats are only as powerful as they are allowed to be. By getting ahead of these issues as much as possible, producers and packers can still find signs of hope on the hazy horizon. ■

The Next Canadian Hog JOURNAL Canada's national hog magazine is May 2022

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Annual Carbon Tax per Marketed Animal*					
Year	Electricity	Gas	Propane**	Diesel***	Total
2020	\$0.19-\$0.48	\$0.38-\$0.47	\$0.10	\$0.04-\$0.12	\$0.79-\$0.99
2021	\$0.25-\$0.64	\$0.51-\$0.63	\$0.13	\$0.05-\$0.16	\$1.06-\$1.32
2022	\$0.32-\$0.80	\$0.63-\$0.78	\$0.17	\$0.06-\$0.21	\$1.32-\$1.65
2023	\$0.41-\$1.04	\$0.82-\$1.02	\$0.22	\$0.08-\$0.27	\$1.72-\$2.15
2024	\$0.51-\$1.29	\$1.01-\$1.25	\$0.27	\$0.10-\$0.33	\$2.12-\$2.64
2025	\$0.60-\$1.53	\$1.20-\$1.49	\$0.32	\$0.12-\$0.39	\$2.51-\$3.14
2026	\$0.70-\$1.77	\$1.39-\$1.73	\$0.37	\$0.14-\$0.45	\$2.91-\$3.64
2027	\$0.79-\$2.01	\$1.58-\$1.96	\$0.42	\$0.16-\$0.52	\$3.31-\$4.13
2028	\$0.89-\$2.25	\$1.77-\$2.20	\$0.47	\$0.18-\$0.58	\$3.70-\$4.63
2029	\$0.99-\$2.49	\$1.96-\$2.43	\$0.52	\$0.20-\$0.64	\$4.10-\$5.12
2030	\$1.08-\$2.73	\$2.15-\$2.67	\$0.57	\$0.22-\$0.70	\$4.50-\$5.62

* Marketed animal includes market hogs, iso-weans, weaned pigs, culls and breeding stock in Saskatchewan and Farrow-Finish Hog in Alberta.
 **There was no data submitted by Alberta Producers.
 *** Diesel use was for transportation of animals to market. For animals shipped to the United States, it is assumed that carbon tax is paid only on fuel used within Canada.

Methane is the latest climate change menace for agriculture, joining carbon dioxide. This year, Alberta and Saskatchewan hog farmers will be punished even more for it, with no other options.

Public perceptions wield increasing influence

Andrew Heck

Understanding the many perspectives that shape public trust in animal agriculture relies on a great deal of speculation, largely based on word-of-mouth, opinion polls, social media and purchasing trends exhibited by consumers. But connecting those perspectives back to the experience on-farm, for producers, can be less tangible.

The search for truth while finding common ground with the 'other side' can often end in a toxic stalemate when producers and consumers butt heads. Industry representatives make tireless efforts to 'educate' the masses, while many urbanites – largely disconnected from the intricacies of food supply chains – often

resort to unreliable sources to find answers to their burning questions. The list of questions, and the need for answers, grows constantly.

Three sessions at the 2022 Banff Pork Seminar either directly or indirectly addressed the challenge of reinforcing public trust, exploring themes related to hog sector issues that continue to cause consternation for producers and consumers alike.

Clapping back at critics

In animal agriculture, emissions of carbon dioxide and methane are often cited as drivers of climate change – a widely held assumption by some consumers,

even though certain academic thought leaders suggest the scenario is not as bad as it looks. Other figures, like Patrick Moore of Greenspirit Consulting, take that line of thinking a step further, which may or may not be entirely helpful for the hog sector.

Moore delivered a presentation during the second plenary session of the 2022 Banff Pork Seminar. A native of Winter Harbour, B.C., Moore grew up around the commercial logging industry, in a remote inlet at the far north end of Vancouver Island. He still lives on the island today. For a decade and a half, Moore was a founding and widely photographed member of Greenpeace Canada, until an ideological rift emerged between him and others in the group.

"We cared about people. That is the 'peace' in 'Greenpeace,'" said Moore. "As time went on, Greenpeace drifted into the idea that humans are the enemy of the Earth, as opposed to part of nature."

Moore's early work gained international renown starting in the early 1970s, when he and other avant-garde activists decided to protest certain activities in the Pacific Ocean, including the escalation of Cold War-era tensions.

"I became a born-again environmentalist and sailed on a boat with a group of activists to stop U.S. hydrogen bomb testing in Alaska," said Moore. "We sailed in the late

CONTINUED ON PAGE 24



California's Proposition 12 legislates changes to sow housing. The decision will impact most pork sold in the state, which comes from pigs raised in other parts of the U.S. While essentially damaging for both producers and consumers (who voted for it), it is a sign of the times.

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For Patrick Moore, climate change concerns are a lot more smoke than fire. Activist hostility drove him away from Greenpeace, which he helped found.

fall in the stormy seas to the Aleutian Islands and got on Walter Cronkite's Evening News and really changed the whole course of the nuclear arms race."

Starting in the late 1980s, Moore began to draw the ire of his former peers and modern-day eco-warriors for his involvement with the 'CO₂ Coalition' – a group dedicated to defending atmospheric carbon dioxide – and 'Allow Golden Rice Now!' – advocating for the production and consumption of a yellow-coloured, genetically modified strain of rice designed to biosynthesize beta-carotene, a precursor of Vitamin A. Given his history with Greenpeace, some accuse Moore of forfeiting his earlier beliefs to become a paid lobbyist. Moore, however, remains unfazed.

"The truth of the matter is that every single scare story today is either about things that are invisible – like CO₂, radiation and whatever's in GMOs that's supposed to be bad – or so remote – like coral reefs and polar bears – that no-one can observe for themselves whether the claims being made are true or not," he said.

It may be difficult for some people inside and outside of agriculture to reconcile

with Moore's views. Certainly, he possesses the relevant education and experience to articulate his positions in a way that resonates with receptive audiences. 'The facts' may be black-and-white, but individual interpretation always leaves a grey area. Our emotional brain, as humans – whether hog farmers or food consumers – thrives in those murky waters, where our feelings have the power to blind us to reality, reinforcing our convictions and clouding our better judgment.

For producers, it would be wise to exercise caution around dismissing certain topics like environmental impacts and other concerns, such as animal handling and housing practices, that may be perceived as less 'humane' than desired by consumers.

Balancing the conversation is key

Vincent ter Beek is an 'agricultural immigrant,' having come to the industry with a background in history and journalism, not farming. As an admitted outsider, Ter Beek today sits at the helm of Pig Progress, recognized as a true global authority on pigs and pork, but, unlike Moore, he seeks a sense of

balance as it relates to industry issues. Ter Beek delivered a presentation during the closing plenary session of the 2022 Banff Pork Seminar.

"My Twitter timeline is a curious amalgam of people living in cities and working in journalism – often left-wing and sometimes vocal vegans – and people working in agriculture – complaining that many people in cities have lost touch with reality," said Ter Beek. "I listen, will treat everyone with respect, but it's in my best interest not to choose sides."

For the hog industry, Ter Beek's insights may be cumbersome or even outright frustrating. In fact, Ter Beek is not a moral judge of the sector, but instead a conscientious ally, offering praise alongside constructive criticism. A noteworthy takeaway message from Ter Beek is that the temporary discomfort associated with adapting to public pressures may be one way to secure industry success, going forward.

"City people have lost touch with agriculture, I often hear. They've lived away from agricultural reality for too long. They don't realize that, for a pork chop, sausage or spare ribs to be created, a living creature has to be grown and slaughtered," said Ter Beek. "For opening up to the outside world and becoming more understood, it is also important to ask the question: does the swine business want to show everything that is happening in the farm?"

On the flip side, producers should not necessarily rush to make rash decisions, simply out of fear. Consumers hold a lot of power, collectively, but the loudest opponents of animal agriculture are an extreme, small minority of critics, and while their sway should not be ignored, sensible interaction between the industry and animal welfare groups often excludes these voices for a reason.

Many animal activists have few boundaries when it comes to attacking the hog sector, often very unfairly, but Ter Beek uses an analogy, 'the Insta-

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According to Vincent ter Beek, the rural-urban divide is real, and growing, but it is up to the industry to bridge this gap by demonstrating socially acceptable forms of change.

gram test,' to demonstrate how words and images matter. A lack of transparency around certain hog production practices can generate suspicion, and that suspicion is exactly what activists use to strengthen their arguments.

"We all know that, by 2050, there will be more than nine billion mouths to feed," said Ter Beek. "They may not all be eating meat, but if everyone at least has some money to spend, the demand for meat will only grow. And where will these extra people of the future live? Most likely, the vast majority will live in cities."

Tail docking and castrating piglets, and the use of gestation crates for sows, are arguably the most contentious pig handling practices still used today in North America. In Europe, the top-down parliamentary approach of enacting legislation has forced hog farmers to change the way they work, or to go out of business. Like it or not, it was inevitable there, and the writing may be on the wall here as well.

Ter Beek's pointed reflections on the hog sector are not only timely but critical for the industry to address, sooner than later.

Animal welfare cannot be taken lightly

Ter Beek's views as an overseas magazine editor seemed to hit the mark even with some Canadian producers who are ahead of the curve when it comes to animal care, such as the panelists who took

part in the 'Welfare' breakout session at the 2022 Banff Pork Seminar.

Last year, the National Farm Animal Care Council (NFACC) made the decision to delay the implementation of an earlier amendment to the group's *Code of Practice for the Care and Handling of Pigs*, requiring all compliant hog barns to be converted to group sow housing. The initial deadline was 2024, which has since been pushed to 2029. All new barns constructed since 2014 have had this requirement, but whether building a new barn or converting an existing one, large capital costs can discourage producers from taking the next step, even with a looming moratorium inching closer.

When Daryl Possberg of Polar Pork set out to make the transition, in 2016, he began by retrofitting one-third of his sow space. After a successful pilot to evaluate how the new system might work, he took a phased approach by safely moving animals to an off-site farm while construction was underway, over a series of weeks. All things considered, he estimates the cost to be around \$100 per sow.



Converting to group sow housing is costly, but it has become a societal expectation. Fortunately, open systems have production benefits on top of improving the hog sector's image.

“This is money well-spent,” said Possberg. “There’s value in getting this done in a tight timeline.”

A lack of profitability in the past half-decade is usually mentioned as a reason that conversion is not feasible, at present. Fears of compromising biosecurity, losing productivity or needing additional space are other hurdles. These are valid concerns, but as the clock continues to tick, it is incumbent upon producers and packers to find solutions.

Indeed, Maple Leaf Agri-Farms – supporting production for Canada’s highest-capacity hog slaughter facility in Brandon, Manitoba – has already fully converted to group sow housing. The transition was completed only a few months ago, and it would be hard for anyone to argue it is a bad look for the company. Rather, the opposite.

“There’s very little metal in the system. There’s great view lines – great to observe the sows and wonderful for visitors, who really enjoy seeing that sort of thing,” said Neil Booth, Production Manager, Maple Leaf Agri-Farms. “It’s great for those sows to come say ‘hi’ every day. You feel as though they appreciate you and want you to be around.”

Maple Leaf began planning its group housing conversion more than a decade ago, well before NFACC amended the pig code. While NFACC’s codes are voluntary, not legally binding – a popular talking point among animal activists – the code is a stipulation of commercial hog production under the Canadian Quality Assurance (CQA) and Animal Care Assessment (ACA) programs, and the incoming Canadian Pork Excellence (CPE) program.

Without certification and validation under quality assurance programs, producers are unable to market hogs through meat packers who are overseen by the Canadian Food Inspection Agency (CFIA). The federally inspected system represents practically all commercially raised pork in Canada, most of which is exported. By removing a farmer’s ability

to participate in the federal value chain, his or her operation would be effectively ended overnight – not a particularly attractive outcome for producers, who are heavily invested in their businesses. Critics, however, almost never have a financial stake in the matter – just an opinion about it. Despite the industry’s and government’s due diligence, backlash still abounds, in some cases.

Yolande Seddon, a researcher with the University of Saskatchewan, is a recognized expert in sow welfare, and, like Ter Beek, brings a thoughtful perspective that is unclouded by personal gain.

“In other areas of the world where hard deadlines have been set, there is evidence to suggest that has only resulted in a contraction of the industry,” said Seddon. “It seems a lot more mediated if

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Does a contraction of the industry matter to those outside the industry? That depends on the level of comfort consumers have with relying on imports to fill potential voids. Canadian retailers have no obligation to source Canadian pork, but for as long as pork demand exists, meat coolers will continue to be filled with product that may or may not be Canadian. Cost-competitiveness helps ensure Canadian pork ends up with Canadian retailers, rather than meat coming from the U.S., Mexico, Brazil or other suppliers who are always looking for greater global market share.

“It is worth noting that supporting an industry to continue making progress on conversion will lead to improved animal welfare in the long run,” said Seddon. “If we encourage a contraction of the industry, that production is always absorbed elsewhere in the world, typically where cost of production and animal welfare standards are lower.”



If the hog sector remains stubborn on certain issues, rather than flexible, the industry's reputation and business altogether could worsen with time. At present, time may not favour the industry.

While it is helpful when consumers understand this dilemma, it is no guarantee of sympathy for producers who are struggling to make the conversion. Moreover, convincing an increasingly skeptical public that the industry is committed to positive change has become a significant obstacle.

The Canadian Pork Council (CPC) predicts that half of all commercial barns in Canada will be converted to group sow housing by year's end, but approaching a very high degree of compliance remains a lofty target. If the target is not met within the next six years, producers will undoubtedly be forced out of the industry, which will result in pork's loss and other proteins' gain, whether animal- or plant-based. The slippery slope is likely not worth testing out, even for the sure-footed.

Self-preservation requires self-sacrifice

‘The customer is always right.’ Well, not always, especially when it comes to the nitty gritty, technical aspects of a business, including pig and pork production. But even if the customer is not ‘right,’ he or she stands between the farmer, packer, retailer and his or her hard-earned dollar. It is the same dollar that we all cherish, regardless of our beliefs.

Every farmer raises animals with the best of intentions in mind, and despite the noise made by activists, an extensive and complex network of people, policies and other practices act as effective checks and balances. Raising animals for food, this is a condition the industry has grown to live with.

At the end of the day, financial pressures on producers are inhibiting change, but for most consumers, only the pork price tag matters. Whether the Canadian pork industry sinks or swims does not specifically affect most people, much as we would like them to identify with our plight. For long-term sector sustainability to be realized, the industry would do well to shift its perspective, in some cases, to align with ever-changing consumer perceptions more closely. Foolish pride cannot be the weight that holds us back beyond profits.

Is that easy? No. Does it always make sense? No. Is it affordable? Not yet. Is it helpful? Probably. Should the industry be confident that it is entirely possible? That is hard to say. But one thing that is clear, is that the answer might be looking back at us in the mirror. ■

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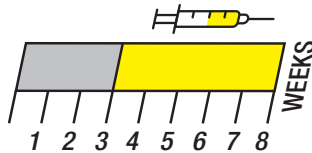
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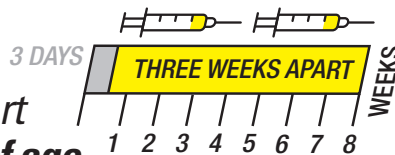
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Mental health awareness must shift to action for farmers

Stewart Skinner

Editor's note: Stewart Skinner is a hog farmer near Listowel, Ontario – about 150 kilometres west of Toronto. His article is a response to Lesley Kelly's presentation during the 'Human Resources' breakout session at the 2022 Banff Pork Seminar. Skinner and Kelly are partners with the 'Do More Agriculture Foundation': champions for the mental well-being of all Canadian producers.

With every sunset starting a little later and lasting a little longer, we Canadians can start to anticipate the conclusion of another winter. While much of the art in our vocation has been altered by technology, there is still the rhythm of the seasons that every farmer must dance to, and spring is the favourite time of year for most.

We emerge from our barns and sheds for the promise of another year and the hope of a bountiful crop ahead. Sadly, every year there are a few of our brethren that do not join us again – friends that succumb to a disease continuing to stalk farmers across Canada. Mental illness is no stranger to farmers, and, tragically, it continues to collect a heavy toll.

I first shared publicly about my struggles with depression and anxiety in 2013. Today, we are in an entirely different world; long-held stigmas that led to widespread repression of

healthy outcomes for those who deal with mental illness are now in the rear-view mirror. Awareness among the general population is as high as it has ever been, following a watershed change in how the disease itself is viewed over the past decade. No longer do people 'kill themselves' – they die of suicide after battling a deadly disease. This positive environment means more people feel safe to get out of their own shells and seek help, whether it be traditional therapy, medication or alternative treatments like music or art therapy.

Awareness has never been higher, but why are we not making progress on the farmer suicide front?

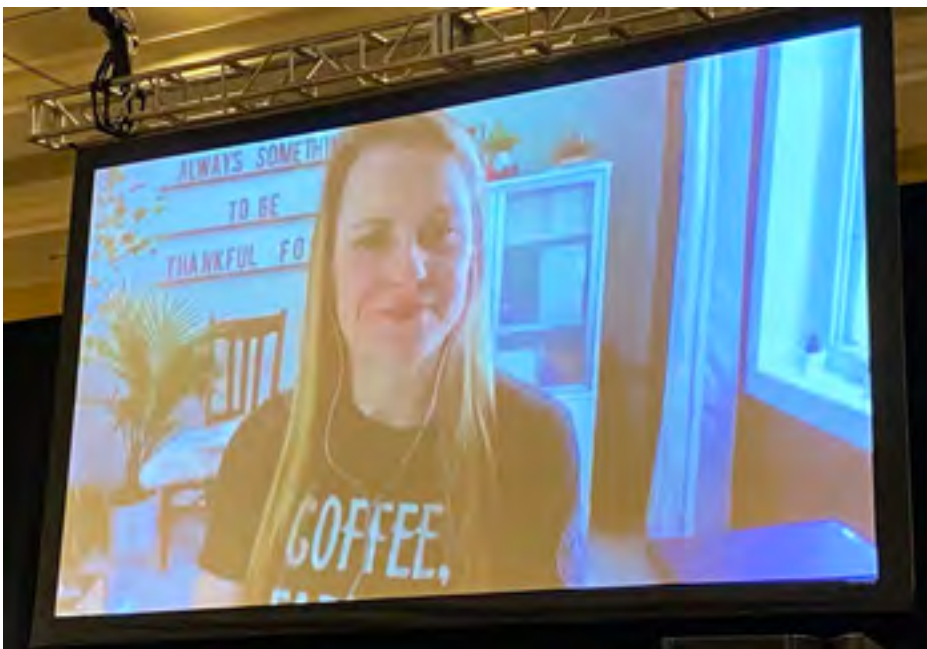
As a person who has lived with this for some time, there is very much an ebb and flow to how healthy my mind can be. Mental health is not a light switch – *on* and we are fine, *off* and all is dark and sad. It is dynamic and

ever-changing. Think of standing at the shore of the ocean; there are times of calm and times of uncertainty, the impact of which can depend on the tide itself. Picture the oncoming storm on the horizon; if the tide is out, those crashing waves can do less harm. Such is the case with our mental resilience. The impact of an unexpected calamity is dependent on the underlying health going into the crisis. A person who has a high degree of resilience has a better chance of living through the storm than someone who is already mentally exhausted prior to impact.

Over the past two years, I have watched the model I constructed to keep my resilience up be torn apart, ironically in the name of keeping me safe.

Due to poor first experiences with the field of psychiatry, I have always been skeptical of how most doctors approached mental health, given the heavy reliance on medication versus the basket of different therapies that have been developed. My resilience was buffered through communities – friends and colleagues that I could share with, recreational sports and my church. There were also unhealthy coping mechanisms present – alcohol and cannabis – yet on the whole, there was stability that came largely through community support.

Since the start of COVID-19, each of those healthy pillars has been taken away for at least some part of it, and in the case of sports, I have not bricked a three-point shot since our last basketball game, in January 2020. Conversely, while my church was closed and I could not meet a fellow hog farmer for breakfast at the greasy spoon in town, the lights never turned off at the beer store, and my body has now become fully addicted. It takes serious concen-



Lesley Kelly joined the Banff Pork Seminar virtually from her home near Watrous, Saskatchewan – about 100 kilometres southeast of Saskatoon – offering tips for managing on-farm stress.



Stewart & Jessica Skinner first met while they were volunteering with Ontario Pork at the The Royal Agricultural Winter Fair: an annual exhibition in Toronto, since 1922. Today, they have two children.

tration to make it through a day without cracking a beer out of habit.

My partner, Jessica, and I founded Imani Farms, in 2015, when we purchased a sow herd from my parents. Over the years, we have experienced success and have been able to grow that into a business that focuses on niche markets like 'Certified Organic' and 'Certified Humane' for customers in Canada and the U.S. We entered into those markets to seek out value chains that removed the volatility of the traditional pig market. That said, we both grew up in pig farming families and understood the realities of the pig business.

2021 was a good reminder that, no matter the market you are in, pigs need to move on time, and you need to keep animals healthy. 2021 saw shipments come to a grinding halt mid-year, as COVID-19 wreaked havoc on Canadian meatpacking plants. Health has suffered, as we had a number of disease issues throughout the year – no small thing in a production system for which any antibiotics must be administered on an individual level. Add in soaring feed costs for good measure, and we had quite the tempest brewing. Now remember the previous analogy – that tempest hit when the tidewaters were already lapping at the pier. As wave after wave hit, my condition eroded further and further. There were two specific 48-hour periods last year when suicide was as close for me as ever, with a mind desperate to escape the pain and only a mental image of a loving partner and two beautiful children to shine through an inky darkness.

2021 has likely made me a better farmer; however, it has made me much more cynical about the progress we have seen on the mental health front. One cannot deny the importance of awareness – these words do not get printed on

these pages in decades past. Yet, how much of that awareness was generated from a genuine place and not just a shrewd method to improve a corporate or personal image?

I say that I have become cynical, because I have learned over the past 12 months that if my personal story challenges the worldview of another, that person is more apt to dismiss my experience than actually listen and learn. Perhaps, they get uncomfortable. At the root of my newfound cynicism is that farmers are still dying from mental health issues, and the people with the power to change it are only interested in ensuring that they do the bare minimum to justify a couple hashtag-laden tweets on certain days of the year. 2021 was the year it became apparent to me that our politicians view farmer suicide no different than national expenditures on fertilizer – just another line item on the income statement.

Friends, things are not fine. I have hog farming friends who, by the time this hits your mailbox, will no longer have a hook for their pigs. We are about to enter a farming season during which we can no longer assume that the part we need to finish the job before the rain hits will be at the dealership. We have federal regulations that are quickly becoming out-of-step with our global competitors. We have uncertain times, with the price of farmland skyrocketing once again and high interest rates lurking just around the corner. All of the factors that make farming one of the most stressful occupations are inflamed. Things are not fine.

Is all lost? Should we throw up our hands and be happy that at least we have created a society in which we celebrate those who seek help versus belittle?

CONTINUED ON PAGE 32



A study conducted in 2020 found that more than three-quarters of Canadian farmers are experiencing mid- or high stress. Several studies in Canada and the U.S. have suggested that farmers die from suicide at rates considerably higher than the general population.



Skinner is a regular supporter of Ontario Pork's 'Friends of the Food Bank' program, which raises \$40,000 per year, with matching industry donations. Funds are used to purchase ground pork for food banks across the province.

Personally, I would like to move from being a line item and instead be classified as an intangible asset. We can start by tearing down the silos that dominate the traditional health-

care field, and as a country, we can decide saving farmers' lives today is more important than haggling over jurisdiction or who is paying for what.

There is an urgent need for a national, bilingual, 24/7 crisis line that is available to every farmer from Comox to Codroy, staffed with professionals that have been trained specifically to deal with farmers – the type of people who know it is a bad idea to tell a farmer to 'just take a break' at the height of the busy season. Beyond that, the need is no different for the more than seven million other Canadians who deal with mental illness – a national pharmacare system so that financial standing does not get in the way of finding the right medication and improved accessibility to therapy.

The farmer is the lynch pin of Canada's largest industry, which employs more Canadians than any other already, while having the potential to continue growing. There are less than half a million of us left in Canada, and the institutional knowledge in our collective hive mind is what will ensure each year there are dancers ready to hit the field when mother nature starts playing her springtime tune. One could argue we are a resource worth protecting. ■



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Meet the 2022 Banff Pork Seminar award winners

Editor's note: The F.X. Aherne Prize recognizes individuals who have developed either original solutions to pork production challenges or creative uses of known technology. The prize is named for the late Frank Aherne, a professor at the University of Alberta, who was a major force for science-based progress in the Canadian pork industry.

The R.O. Ball Young Scientist Award recognizes graduate students who provide a best overall combination of good and relevant science, a well written abstract and an excellent presentation. The award is named for Ron Ball, a long-time researcher and former Banff Pork Seminar director.

Backspacer device improves safety, reduces stress

The 2022 F.X. Aherne Prize was awarded to a team at Maple Leaf Agri-Farms for its invention of a 'backspacer' device for restraining gilts and sows while collecting blood samples.

"At Maple Leaf, we always seek ways to enhance animal care for our pigs and safety for our people. Our conversion to open sow housing reflects this commitment," said Jewel White, the team's herd veterinarian. "But when it comes to animal care, we are always looking for our next best thing. We saw an opportunity for a win-win to improve both animal care and people safety at the same time."

White routinely collects blood samples as part of her work. The most common method uses a snout snare to restrain the gilt or sow in a temporary stall, as the pig is pulled forward and the sample collector leans into the stall. This process can be risky if the snare comes loose.

"I thought that there must be a device to make blood collection safer and less stressful, so I analyzed the process," said White. "I realized that if we could move the pig closer to the end of the stall during the process so it couldn't back up, the team member could have better access to draw blood. This would create less stress for the pig and greater people safety. We needed our solution to be portable, comfortable for the pig and easy to wash and disinfect."

White discussed her idea with the team's veterinary assistant, Ronald Nayre, and its maintenance technician, Jim Kehler. Together, they developed the device, which met all of their criteria for success.

They conceptualized a smooth spacer that could be inserted behind a pig – almost like moving a car seat forward so the driver is well positioned and secure. They created a light, aluminum device that could be inserted into the stall during the process and moved to the next

stall when the process is complete. The team is happy to share this concept with the broader industry to promote improved animal welfare and worker safety.

Student science winners announced

The first prize of the 2022 R.O. Ball Young Scientist Award was given to Alison Jeffery of the University of Montreal for her paper, "Immunological evaluation of an autogenous vaccine used in sows to protect piglets against *Streptococcus suis* infections."

Jeffery's research shows how a sow vaccination program with an autogenous vaccine for *Strep suis* increases maternal antibody levels in piglets three- to five-weeks-old. The next step will be to fully characterize the clinical protective effects of the vaccine during the complete nursery period. Further coverage of this research is found in this edition of the Canadian Hog Journal.



Maple Leaf Agri-Farms' 'backspacer' device



Student researchers Carley Camire (left) and Alison Jeffery (right) with the University of Alberta's Ben Willing (centre), who presented the awards.

Jeffery received a \$500 cheque and a plaque, recognizing her work.

The second prize of the 2022 R.O. Ball Young Scientist Award was given to

Carley Camire of the University of Saskatchewan for her paper, "The effect of limiting dietary non-essential amino acids on lysine requirement for protein deposition in growing pigs."

Camire's research shows how low-protein diets with reduced levels of nitrogen, fed to growing pigs, may not contain enough non-essential amino acids, causing ineffective protein deposition of essential amino acids. The study suggests that non-essential amino acids need to be supplemented when essential amino acids and nitrogen are lacking.

Camire received a \$250 cheque and a plaque, recognizing her work. ■

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Leaner diets can save money, preserve growth

Treena Hein



Eduardo Beltranena presented on feed research, during a breakout session at the 2022 Banff Pork Seminar.

Feed cost is very high now for many Canadian hog producers, in large part due to the 2021 drought across the prairie provinces. This was explained by Eduardo Beltranena of the University of Alberta during the ‘Feeding’ breakout session at the 2022 Banff Pork Seminar. Beltranena conducts research on reducing feed costs for hogs with colleagues Malachy Young and José Landero at Gowans Feed Consulting and Miranda Smit, formerly with Alberta Agriculture, Forestry and Rural Economic Development.

“Feed is 65 to 75 per cent of total production cost and hogs consume 85 per cent of it,” said Beltranena. “Among the most important things you can do are reduce feed energy, include soy or canola expellers instead of liquid oil, immuno-castration, reducing vitamins and trace mineral supplementation, and feed alternative ingredients such as hybrid rye, fava bean and canola coproducts. Savings from implementing these strategies can add up to \$22 per pig.”

There are other strategies that reduce feed cost, but they have less of an

impact, he suggested. They include feeding phytase instead of mono- or di-calcium phosphate, shipping gilts heavier than barrows, reducing feed particle size, making feeder adjustments to reduce feed wastage and timely removal of suboptimal pigs not to overcrowd hogs prior to first pull, as they near market weight. Together, these actions can typically provide additional savings of \$8 per pig.

Increasing feed intake by reducing feed energy

With colleagues, Beltranena has conducted several commercial trials reducing the energy density of western Canadian pig diets – diets that are cheaper. They found that by reducing net energy level from 2.4 to 2.1 million calories per kilogram, pigs consumed more feed to maintain caloric intake but weight gain was similar. So, while feed efficiency was lower as a result of feeding reduced net energy diets, overall profit was \$10 higher per hog eating cheaper diets.

In terms of feed components, starch propels hogs to grow, and in western Canadian diets, starch comes mostly from cereals. Beltranena explained

that with the very high prices right now for barley, wheat and oats, growers have turned to corn from eastern Canada.

“Luckily, there was a bumper corn crop in Quebec and Ontario,” he said. “This has really saved the western Canadian pig industry.”

However, he urged pig producers to consider feeding alternative, locally grown feedstuffs and industrial coproducts. New European rye hybrids yield about 30 per cent more than conventional rye and 20 to 40 per cent higher than Western spring wheat. Fusarium and ergot disease are lower in these fall-planted hybrids, because they produce vast amounts of pollen and flower earlier. They are, therefore, not challenged by lack of summer rainfall, making it more difficult for fungal spores to enter the stigma and affect grain formation when crops are stressed.

Beltranena and his colleagues have done a trial with hog diets, replacing one-third, two-thirds or all the wheat with hybrid rye grain. There was no effect on feed cost per hog or feed cost per kilogram gain, nor was there a

Reduced feed energy level on profitability

Mcal NE /kg	2.4	2.3	2.2	2.1
Diet cost, \$/1000kg	249.51 a	233.13 b	216.22 c	198.81 d
Feed cost per kg gained, \$	0.67 a	0.63 b	0.60 c	0.57 d
Feed cost per hog, \$	62.50 a	59.58 b	56.72 c	54.66 d
Income per hog after subtracting feed cost, \$	61.02 d	63.50 c	65.93 b	71.43 a

6 barrow + 6 gilt pens/NE level

Smit and Beltranena, 2015

By subtracting feed cost from income per hog, Beltranena’s team found that feed cost per hog is less when feeding a diet representing 2.1 versus 2.4 million calories per kilogram.

reduction in dressing percentage, because rye has fermentable soluble fibre instead of woody-type, insoluble hull fibre.

“Rye can completely replace wheat in hog diets, but we recommend including an enzyme mix if rye replaces more than 50 per cent of wheat in diets,” he said. “In our trials, we added an enzyme cocktail to all diets and canola oil to increase the energy level of the rye diets. That increased diet cost, but even so, profit per hog was higher at the high rye inclusion level with the enzyme cocktail.”

Regarding sources of feed protein, Beltranena noted that canola and soybean meal costs are high, but pulses – particularly yellow peas and fava bean – remain important alternative protein sources for western Canadian hog producers. Pulses contribute about twice as much starch as protein, so they price into diets effectively. He added that dried distillers’ grains with solubles (DDGS) from both wheat and corn also provide more available phosphorus

than intact grain. Also, camelina and hemp cake may represent economical protein and fat sources in the future.

Beltranena also indicated that, while the cost of the immuno-castration vaccine Improvevax is equal – providing a feed saving of around 15 kilograms per male pig – there are additional benefits to producers. These are four to eight per cent faster gain to market weight, no cryptorchids, greater pig livability, lower dressing percentage because of the testes remaining intact, but greater carcass weight. Shoulder, loin and ham weight increase, reducing backfat and belly fat. He pointed out that the treatment of gilts with Improvevax is new, allowing them to grow more like barrows after the second injection, eating more but getting to market weight sooner.

Other actions to reduce costs

Among other more minor feed cost reduction strategies, Beltranena indicated producers could regularly check if feeders need adjustment.

“Feed wastage of two per cent equals 15 tonnes of feed falling through slats into slurry pits for 1,000-head barns per year,” he said. “Reducing particle size by 100 microns improves feed conversion by more than one per cent. That’s \$1 feed saving per hog. Try a screen hole that’s down a size to what you’re currently using. Watch for feed bridging as it may occur in bins and feeders, or flex augers may have difficulty handling slightly more powdery mash.” ■



Beltranena was recognized during the second plenary session of the Banff Pork Seminar as this year's recipient of the George R. Foxcroft Lectureship in Swine Production. Foxcroft passed away in December 2021. During his own presentation, Beltranena honoured Foxcroft, his long-time mentor and friend.

Technology supports breeding efficiency

Kilby Willenburg

Editor's note: Kilby Willenburg is a research scientist with Fast Genetics. He presented during the 'Sow Productivity' breakout session at the 2022 Banff Pork Seminar. For more information, contact Sarah Heppner at sheppner@fastgenetics.com.

The last few years have been a whirlwind for the swine industry. Market fluctuations throughout 2021 drove hog prices to levels comparable with the demand created by porcine epidemic diarrhea (PED) in 2014. Prices at the meat counter are squeezing consumers, too, which is perplexing, given the record number of pigs slaughtered. Producers are expected to be profitable in 2022 despite an increase in production costs, general inflation and cost of living.

COVID-19 has undoubtedly created labour shortages in agriculture and processing, which is one reason for higher consumer costs. Fear of the virus, unemployment benefits and government assistance have all contributed to the labour crisis, forcing farms and meat-packing plants to compete with local restaurants and retailers for workers.

As the pandemic continues, production systems will need to be creative, implementing new technologies and leveraging employees to fill this void

while maintaining current production levels. In addition, there is a need for significant increases in production, as the global population is expected to rise to more than nine billion by 2050. The world will require more food, and farmers will face pressure to keep up to the demand with minimal increases to existing infrastructure, which will have to be addressed at all levels of production with technology.

Artificial insemination meets artificial intelligence

The swine industry has a reputation for being a slow adopter of technology, with one example being artificial insemination (AI). Arguably, AI is one of the greatest successes in reproductive technology that has reduced labour, increased genetic improvement, enhanced biosecurity and helped to control disease outbreaks.

However, this technology was available for 30 years before it was truly

put into practice, which is no different in other industries, as it takes about 25 years for a technology to be fully embraced – just look up the inception of electricity, the automobile and the computer.

Automation is boundless and not restricted by the size of the operation, as robotics can automate the slow, monotonous chores, enabling producers to focus on more essential, time-sensitive tasks. The 'BoarBot' by Swine Robotics and 'CONTACT-O-Max' by Ro-Main are technologies that optimize heat detection by reducing labour normally required for handling boars, while maximizing boar contact with females.

Another product offered by Swine Robotics is a robotic power washer, which, according to the company's website, reduces wash time by 85 to 90 per cent and limits worker exposure to disinfectant chemicals. Lastly, a feed-dispensing, classical-music-playing robot has become quite popular in Brazil, where they are also experiencing a labour shortage. RoboAgro, the manufacturer, has stated that a farm can save \$8,000 per year for every 1,000 animals by dispensing the exact amount of feed required per animal while reducing employee labour.

Collectively, automated products like these give hog farmers the tools to mitigate fluctuations in daily routines from employee turnover or health, so focus can be directed towards pertinent farm responsibilities, such as mating, gilt development and post-natal care in farrowing.

The other AI, artificial intelligence, has successfully entered the swine industry with products such as the camera-based technology by Ro-Main called 'PigWatch' that monitors sow activity post-weaning and notifies the farm at the optimal time for insemina-

CONTINUED ON PAGE 40



Worldwide, more people means more demand for food, and more demand for food, including pork, means more pigs. Reproductive technologies are helping meet this global need.

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Precisely timed pregnancy is the new reality with the two AIs – artificial insemination and intelligence.

tion. Data has shown that, when used in conjunction with heat detection, PigWatch can identify the optimal breeding time and lower the average number of inseminations per sow. A similar behavior monitoring technology for group housing, designed by Nedap Livestock Management, records the frequency of female visits to the boar area and notifies the farm when the threshold for estrus has been reached.

Another sensor-based technology, the 'E Doctor,' loosely referred to as a Fitbit for pigs, is being developed by SmartAHC. This wireless ear tag collects real-time data on body temperature, physical activities and estrus. Although in their infancy, wearable smart devices have the potential to revolutionize the industry, reduce human error and improve farm efficiencies. This is a relatively new area, but according to IDTechEX, a market research firm, the global demand for wearable technologies for animals, including livestock, is estimated to be \$2.6 billion by 2025.

Sex-sorted sperm generates economic value

Another technology that has become a staple in other livestock industries, particularly dairy, is sex-sorted sperm (SSS). Inguran Sexing Technologies, Inc. has been the driver in SSS and has produced more than 110 million straws of SSS via its 26 sorting labs worldwide, which are responsible for more than 50 million replacement heifers. In the swine industry, SSS is not available for commercial use, yet. However, within Fast Genetics, the application of SSS has created economic value at nucleus and multiplier farms with a faster rate of genetic improvement by increasing the selection intensity, whereas at the multiplier level, doubling the output of the preferred sex without impacting infrastructure cost. Commercially, the value of SSS has been estimated at \$5 to 7 per market hog but will vary depending on the production system and desired outcomes.

Looking at the U.S., a five per cent drop in pre-weaning mortality would improve litters per sow per year and pigs per litter – together known as ‘PSY’ – and enable the industry to drop sow inventory by almost seven per cent. Furthermore, lowering the number of sperm per insemination from the standard three billion cells to one billion cells could trim boar inventory by 67 per cent. Even at three billion cells per dose, with a single fixed-time insemination, there would be 50 per cent fewer boars required. A similar situation would exist in Canada.

As an industry, efficiencies must improve at all levels of production, which requires supporting technologies that can make barn life easier by doing away with mundane occupations so that greater attention can be paid to sensitive tasks.

Historically, the swine industry has been slow in this regard, partly because there has not been a driver that offsets the potential loss in fertility, or because the cost of implementation was not justified. But as labour shortages remain imminent and global population grows, companies will have to integrate technologies to improve efficiency and remain competitive during times with high input costs and irregular markets. ■

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Using sex-sorted sperm increases selection intensity and output, from the nucleus farm, to the multiplier, to the wider commercial industry.

Performance variation points to potential improvements

Greg Bilbrey

Editor's note: Greg Bilbrey is an account manager with Pig Improvement Company (PIC). He presented during the 'Management & Production' breakout session at the 2022 Banff Pork Seminar. For more information, contact Ann Marie Ames at aames@filamentag.com.



By using data to make informed decisions, producers could reveal performance efficiencies that lead to cost savings.

Do you feel like you lack the time or resources for collecting and analyzing sow or pig performance data? You might have more resources than you realize.

When done correctly, comparing production data to benchmarks can pay for itself and improve your farm's profitability. Using data, you can identify declines in pig performance and work back to identify the cause. Only then can you take steps to find a possible solution, whether it be changes in nutrition, management or genetics.

Even if you do not want to compare your herd's data to other operations, you

could find excellent opportunities for improvement by comparing your own current performance data to metrics from months or years prior. Doing so can help identify ways to generate better results in areas where your pigs are underperforming, which benefits profitability overall.

Analyzing data efficiently

One way to focus your efforts when comparing sets of performance data is to divide the set of closeout data into groups based on performance. Looking at narrower metrics can be more efficient than looking at averages. 'Opportunity cost,'

in this case, refers to the financial difference between using narrower metrics versus averages.

For example, in a sample group of PIC wean-to-finish pigs, performance metrics led to an average USD \$8.78 (CAD \$11.17) opportunity cost per head in closeout data from approximately 122,000 pigs (*Table 1.1*). However, when the pigs were ranked in groups identified by the previous year's performance data (*Table 1.2*), the opportunity cost is even more compelling.

Thirty percent of 2021 closeouts performed equal to the *upper half* of the

Data from one sample grow-finish operation using PIC genetics. Data collected by PIC.

	Sample farm	Top 25%	Top 50%	Bottom 50%
Closeouts	39	5	12	27
Percentage of pigs in performance category	N/A	12.8%	30.8%	69.2%
Number of pigs sold	121,691	19,750	41,274	80,417
Average Daily Gain (kg/d)	0.748	0.826	0.798	0.721
Feed conversion ratio (FCR)	2.37	2.30	2.32	2.40
Percent mortality	9.0%	4.6%	5.1%	11.0%
Opportunity cost \$/head	\$8.78	-\$0.72	\$1.39	\$12.58

Table 1.1: Closeout data from a sample grow-to-finish operation, ranked by percentage using the previous year's closeout data. Separating groups of pigs by performance allows for more clear identification of performance challenges and opportunity costs than using averages.

previous year's closeouts. The 2021 group had 1.76 pounds (lbs.) (0.798 kilograms (kg)) of average daily gain, a 2.32 feed conversion rate and 5.1 per cent mortality. Using standardized economics, PIC calculated a USD \$1.39 (CAD \$1.77) opportunity cost per head.

Seventy percent of 2021 closeouts performed equal to the *lower half* of the previous year's closeouts. The 2021 group had 1.59 lbs. (0.721 kg) of average daily gain, a 2.40 feed conversion rate and 11 per cent mortality, resulting in a USD \$12.58 (CAD \$16.00) opportunity cost per head.

If the producer could move a quarter of the group from the *lower half* to the *upper half*, this could result in a positive shift of USD \$225,000 (CAD \$285,000) for that sample herd.

Investigating the causes of under-performance

The data shown in Table 2 (on the next page) was collected from PIC customers, representing about one million sows in 46 systems, between April and June 2021. The first column is data collected by PIC. The four additional columns are data collected by other national benchmarking systems. One commonality between systems is that producers who achieve more than 30 weaned pigs per sow per year kept their pre-wean mortality below 10 per cent. By focusing on pre-weaning survivability, producers could efficiently improve their litters per sow per year and pigs per litter – together known as 'PSY.'

To pinpoint specific areas where potential improvements can be made in your operation, treat the process like an investiga-

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Data from multiple grow-finish systems using PIC genetics.

Data collected by commercial livestock benchmarking companies and platforms.

	All other systems	Top 1%	Top 10%	Top 25%	Top 50%	Bottom 50%
Closeouts	353	4	40	97	191	162
Percentage of pigs in performance category, %	-	1.13	11.33	27.48	54.11	45.89
Number of pigs sold	649,145	4,904	47,908	126,863	290,447	258,698
Average Daily Gain (kg/d)	0.780	0.853	0.848	0.835	0.821	0.748
Feed conversion ratio (FCR)	2.5	2.18	2.26	2.3	2.36	2.61
Percent mortality	5.5%	2.8%	3.0%	3.4%	3.9%	6.8%
Opportunity cost \$/head	\$7.90	-\$7.56	-\$4.54	-\$2.24	\$0.72	\$13.72

Table 1.2: Closeout data ranked by percentage using the previous year's closeout data. Using the previous year's data as a benchmark, you can rectify performance issues.

PIC Quarterly Production Summary – Q2 2021

	PIC Top 25%	System A	System B	System C	System D
Pigs weaned per mated sow per year	32.7	33.1	27.0	29.7	27.7
Farrowing rate	91.9	91.9	88.1	86.7	88.8
Total born per litter	15.8	16.0	15.7	16.1	14.6
Pre-wean mortality, %	9.7	9.4	15.2	13.2	14.6

Table 2

tion or forensic analysis, working back from the performance data to find out what the numbers represent.

What factors are limiting performance? From one year to the next, changes in the market, health challenges and labor availability can impact pig performance. Physical factors such as feeder space, diet, water availability or space allowance can also drag down performance metrics. Consider which factor you think you can change and start there.

If you are convinced it is time to start or enhance benchmarking sow or pig performance, you can choose from a variety of commercial benchmarking systems. When evaluating them, consider the methods each uses to collect and analyze metrics. Variation between systems is common, and it is important to ensure you are comparing apples to apples.

When collecting data, begin with some historical information, if possible. If you can compile data from the previous three months or one year, you can quickly populate graphs and see trends. However, if you don't have historical data, you can start at any point you choose.

Taking advantage of opportunities

Hog industry benchmarking programs continue to show wide variation in sow and grow-to-finish production. The variation indicates significant opportunities for increasing profitability. Benchmarking production can be an effective way to identify where or how you could keep costs down and improve the efficiency and profitability of your operation. ■

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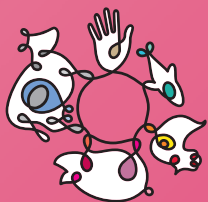
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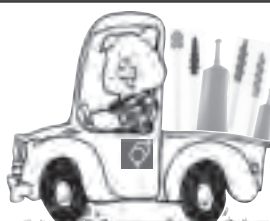


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