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Cover Photo

Weaners in a genetics barn by Neerlandia, Alberta



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Message from the editor

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

It's no secret that the way our industry is viewed has changed over the years. Consumers today expect more, which seldom translates into a profitable situation for producers. Product claims don't always reflect quality, safety or taste, but they can speak to consumers' values. An outlier, in this case, is Quebec-based duBreton, which has been successfully producing and processing organic, certified-humane, antibiotic-free pork for years. While that won't work for everyone, I encourage you to learn more about what they do and why keeping an open mind might make sense.

The University of Calgary's Faculty of Veterinary Medicine (UCVM) Diagnostic Services Unit (DSU) lab is a real asset for the industry when



it comes to keeping livestock disease in-check. And for Alberta hog producers, reduced pricing for performing tests make it a responsible, affordable choice. Find out how you can work with your herd vet to take advantage of it.

Early this past summer, I received a seemingly random email from an Australian government official who was looking to learn about Canadian livestock traceability and biosecurity. We ended up meeting in-person two months later for a fruitful and interesting discussion – the outcomes of which I have shared in this edition.

Also on the trans-Pacific front, Canada Pork embarked on a trade mission to Asia recently, with several stops. These delegations are important relationship-builders that put our industry's hard work (ultimately, the pork) on display for the people who are eager to buy it.

On the research side, find out how feeding dietary lysine can help sows

produce more milk, and learn about a potentially intriguing discovery when it comes to combatting PRRS.

Just a few days after this edition was ready for publication, my wife and I welcomed our third child and first son. The childbirth experience remains exciting (and tiring, especially for the person giving birth) but deeply rewarding. I continue to be grateful for everything that I have, including my career and the ability to use my skills to serve this industry, which is built upon its exceptional people.

What's your opinion on the content in this edition and our social media? Find me in-person at an upcoming event or send me a message at andrew.heck@albertapork.com. Don't forget to follow the Canadian Hog Journal on Facebook and Twitter (@HogJournal) to get in on the conversation! ■

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In reply to “Hog Journal hits 50: a look back” (Spring 2022)

“Here I am watching the Oilers-Flames game and thumbing through the Hog Journal during the TV ads. I read the ‘Hog Journal hits 50’ article and got to the end where it mentions few producers are left who were in business then. I guess I must be getting old, because I’ve been reading the Hog Journal for all 50 years raising pigs the whole time! While the industry has seen many changes over that time, one thing has not changed: there are still very good and dedicated people involved in all areas.”

– Bryan Perkins, Wainwright, Alberta



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DECEMBER 6

3:00 pm	LE PORC SHOW OPENING EVENING AND VISIT OF THE BOOTHS
4:00 pm	PANEL SLAUGHTERING, PROCESSING AND MARKETING: ISSUES AND CHALLENGES OF CANADIAN BUSINESSES F Me Paul Beauchamp, 1st Vice-President, Olymel S.E.C./L.P. Arnold Drung, BBA, MBA, President, Conestoga Meats Stéphanie Poitras, MBA, Executive Director, Aliments Asta Inc.
5:30 pm	EXHIBITORS' OPENING COCKTAIL

DECEMBER 7

9:15 am	GLOBAL PORK INTO 2023: UNCERTAINTY, VOLATILITY AND THE FUTURE Brett Stuart, MBA, President, Global AgriTrends		
10:15 am	PORK'S FUTURE IN AN ENVIRONMENTAL FOOTPRINT REDUCTION CONTEXT: ISSUES, CHALLENGES AND OPPORTUNITIES F Mia Lafontaine, Consultant and speaker in sustainable development, agri-food sector		
11:05 am	HELPING NEIGHBOURS BUILD A KIND FARMING COMMUNITY F Myriam Lachance, Farmer wellbeing worker Capitale-Nationale-Côte-Nord, Au cœur des familles agricoles and Martine Fraser, Farmer wellbeing worker Mauricie, Au cœur des familles agricoles		
11:45 am	LUNCH AND VISIT OF THE BOOTHS		
WORKSHOP	ANIMAL WELFARE AND HEALTH	2:05 pm	THE JUDICIOUS USE OF ANTIBIOTICS: PROGRESS MADE AND REMAINING CHALLENGES! F Laurie Pfeleiderer, DVM, Services vétérinaires ambulatoires Triple-V Inc.
		2:50 pm	HEAT STRESS IN LACTATING SOWS: TECHNIQUES TO CONSIDER TO MINIMIZE THE IMPACTS! F Philippe Gréau, Eng., Consultant
	FARM MANAGEMENT	2:05 pm	PIGLETS SURVIVAL: EVERYTHING HAPPENS QUICKLY AND DETAILS ARE IMPORTANT! F Louis-Philippe Roy, Breeder, Ferme les cochons du Roy and Jean-Philippe Martineau, Agr., M. Sc., Pork Nutritionist, Groupe Cérés Inc./Nutrition Athéna Inc.
		2:50 pm	FEED MANAGEMENT: MISTAKES CAN BE COSTLY! F Aurélié Moulin, Agr., Pork Nutrition Consultant, Agri-Marché Inc.
	MARKETING	2:05 pm	IMPACT OF THE CORONAVIRUS ON THE ECONOMY F René Vézina, Speaker, Columnist, Journalist
		2:50 pm	UPCOMING INFORMATION F
4:00 pm	THE WOW EFFECT Jasmin Bergeron, Speaker F		
5:00 pm	EXHIBITORS' COCKTAIL		

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Sharing knowledge between Canada and Australia

Andrew Heck

When it comes to mitigating the risk of disease and responding to threats in the global livestock industry, the importance of biosecurity and traceability cannot be overstated. But while herd health and food safety rely on factors primarily related to the conditions of pigs and pork, challenges in these areas are mostly human-created, while solutions are exclusively human-oriented.

The Canadian pork industry prides itself on a high degree of quality assurance, which includes a traceability pillar and biosecurity recommendations. This is a hallmark of excellence respected by our global partners. In Australia, similar accountability exists in this regard,

with an even greater emphasis on biosecurity, for natural reasons.

Due to geographic isolation, Aussies have long been keen to protect their country's unique and complex flora and fauna, and this emphasis on ecology has also benefited agriculture, promoting a widespread appreciation for disease prevention measures. Traceability represents a functional component that supports biosecurity by documenting animal movements and making surveillance possible, which protects the industry and the environment alike.

When it comes to production, Canada counted more than 14 million pigs on-farm in 2021, while Australia counted

just over two million. On the flip side, Australia beats Canada by far when it comes to lamb and sheep. Both countries have a considerable beef cattle herd. Despite obvious differences in magnitude, when it comes to livestock species, Canada and Australia remain significantly export-dependent red meat producers, which demands comprehensive and reliable animal tracking.

Comparing and contrasting systems

Beth Green, Manager, Livestock Identification and Traceability, Department of Primary Industries and Regional Development, Government of Western Australia visited Canada recently as



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HOW DOES SWILL FEEDING CAUSE DISEASE IN PIGS?

Strict biosecurity protocols and closely monitored traceability systems protect the pork industries of both Australia and Canada. This infographic, from the Government of New South Wales, discourages feeding food scraps to pigs – consistent with how the issue is viewed in Canada.

part of a four-country tour to exchange information about traceability and biosecurity system design. Her trip was made possible thanks to a fellowship through Australia's Winston Churchill Trust, which provides opportunities for Australians to travel overseas to conduct research in their chosen fields. She began in Scotland, then moved on to Canada, the U.S. and finally to Uruguay in an effort to bring home a better understanding to enhance Australia's livestock industry, while offering her findings to those she visited.

Green's position means she plays a key role in managing the National Livestock Identification System (NLIS) for her state in Australia's national traceability platform, which includes electronic or visual ear-tagging of all livestock, similar to the process in Canada. Tags

or, in some cases, tattoos, are tied to a 'Property Identification Code' (called a 'premise ID' in Canada) and recorded in a central database to track movements, known as PigPass. All movements from one property to another require the use of 'waybills' (called 'manifests' in Canada), providing information on movements, which is required to be directly inputted into the system on arrival at the destination. Waybills can be accessed electronically or provided manually, depending on how they are generated.

In Canada, pig receivers are obligated to submit handwritten or typed manifests by email or fax to their respective delegated authority by province, which is then manually added into PigTrace. The federal *Health of Animals Regulations*, under the *Health of Animals Act*,

CONTINUED ON PAGE 10



In late August, Alberta Pork met with pre-eminent traceability and biosecurity expert, Beth Green, who works for the Government of Western Australia and is researching global traceability systems to fit livestock production and handling in her country.

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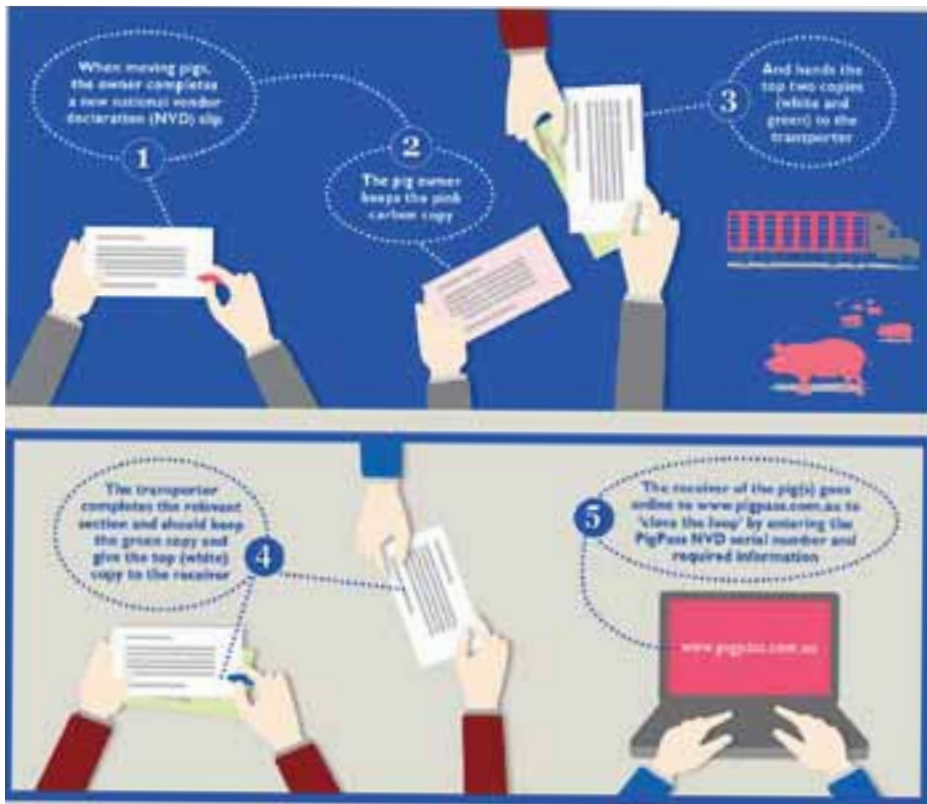
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A key difference between Australia's PigPass and Canada's PigTrace is the obligation of the receiver to directly input traceability data into the national database.

allow a seven-day window for traceability data to be reported. In Alberta, like Australia, the length of time to report a movement is 48 hours, as defined by the province's *Swine Traceability Regulation*, under the *Animal Health Act*. Alberta Pork is the delegated authority for managing the province's traceability, which is then fed into PigTrace – unique among provinces.

But what about when a receiver is reluctant to cooperate or perhaps does not view traceability as a priority? While the legal requirement is clear, bad actors can sometimes slip through the cracks, unless someone is watching.

"We have worked hard to drive up our compliance numbers," said Charlotte Shipp, Industry Programs Manager, Alberta Pork. "Many of the provincially inspected plants, representing just a fraction of all hogs, just needed a bit of encouragement and support to see why this is important."

While paper-based manifests are not always the most convenient option,

Alberta is taking steps to pilot an electronic manifest ('e-manifest'), which has recently been adopted by the Olymel plant in Red Deer and the Maple Leaf

Foods plant in Lethbridge. Together, these plants represent upwards of 90 per cent of pigs processed in the province.

In Australia, recognition of compliance could even lead to better business.

"As a regulator, the government makes available a report that identifies abattoir performance, in terms of traceability compliance," said Green. "Compliance could potentially be used by processors to promote their products within the retail market, which would ultimately benefit the producers from whom they purchase livestock. If you're a producer meeting your requirements, you might look at that kind of consumer marketing and think, 'That's where I'm going to sell next time.'"

Despite nuances between systems, both countries have worked hard to establish traceability best practices over the years, as their international customers have come to expect this level of detail. Effective traceability is the cornerstone of modern food production, and the Canadian and Australian pork sectors certainly meet that expectation.



For some Australians, a trip to Bali, Indonesia, is a party-going rite of passage; however, the island is known to have Foot and Mouth Disease (FMD). Should the disease enter Australia as the result of a careless vacationer, it would be devastating for the livestock industry. Screening for FMD upon re-entry into Australia has intensified, in light of this recent increased risk.

Travelers pose a significant risk

Both Canada and Australia have laws in place that are designed to deter bringing foreign food and animal products into the country. But for any casual observer of human nature (or anyone who has seen border control-style television shows), it should come as no surprise that some daring or unthinking travelers *still* take the risk of facing a fine and having their contraband products confiscated upon arriving at customs, especially via air travel.

African Swine Fever (ASF) and Foot and Mouth Disease (FMD) are very concerning for the Canadian and Australian livestock industries. Both countries are currently free of both diseases, thanks to the diligence of frontline human and canine workers who figuratively and literally sniff out offending luggage and parcels, including those sent through the postal system.

Earlier this year, the United Nations' Food and Agriculture Organization

(UNFAO) released its summary of findings from an investigation into the risk of ASF transmission to the Americas. The report concluded that the likeliest form of entry for the virus remains the movement of illicit pork products from ASF source countries. While no ASF-positive pork products have ever been found at Canadian ports of entry, in several instances, Australian authorities have detected and apprehended goods that contained unviable viral fragments of ASF and FMD. While these unviable viral fragments do not pose a direct risk, their detection demonstrates how easy it might be to bring livestock disease into the country.

With ASF present in the Dominican Republic and Haiti since last year, this has been a cause for much concern in North America. While the Dominican is not the top international travel destination for Canadians, direct flights from Toronto to Punta Cana take place on a weekly basis.

In Australia, the tiny island nation of Timor-Leste, off the country's northern shore, is teeming with the disease, though not much traffic occurs between the countries. When it comes to travel frequency, however, the island of Bali, in Indonesia, represents a significant FMD threat to Australia.

"Bali is the Western Australian winter holiday playground," said Green. "Despite warnings, some returning travelers are still bringing food with meat from Bali into Australia, which is unfortunate."

Whether it is ASF, FMD or any other livestock disease, this liability appears to have been adequately addressed by both countries so far, but extreme vigilance must continue to ensure our industries are protected.

Feral species plague the bush

While humans are unrivalled in our ability to contaminate what we touch, wildlife, unlike domestic animals, are also capable of moving great distances

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Australia's natural biodiversity is vast but does not include camels. This one, spotted in the outback near Silverton, New South Wales, is invasive. Image © John O'Neill

of their own volition and may be considered the second-greatest threat for transmitting disease.

The wild boar issue in Canada has received a growing amount of attention in the past year, thanks to a combination of industry outreach, outspoken academics and government officials, and coverage in mainstream and agriculture news media. In Canada, wild boar are largely the result of an ultimately wrongheaded attempt at livestock diversification that took place much more recently, starting in the 1980s. They jeopardize livestock, crops and the environment, and there are growing efforts to track, trap and eradicate them across western provinces.

“Alberta is on the frontline of this complicated battle, but we are committed to the cause,” said Shipp. “We have seen the devastation experienced in other places in the world, and we’re working hard to avoid that here.”

A report commissioned in 2020 suggests feral pigs cost an estimated AUD \$100 million (CAD \$90 million) annually to the Australian economy, with the largest concentration in the northeastern state of Queensland.

But many Canadians, including those in the hog industry, are likely not ful-

ly aware of the situation in Australia, including the presence of non-native deer and buffalo species, and even camels.

Prior to possessing a widespread understanding of invasive species, deer and buffalo from Europe and Asia were imported to Australia in the 19th century as game, while camels were brought

from India around the same time for transportation reasons. Today, they are a major headache.

Regardless of which animal is causing havoc, it stands to reason that the scientific communities in Canada and Australia have become much more vocal in their efforts to educate the public on why pests are a problem,

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and it is incumbent upon industry partners and decision-makers to continue controlling invasive species to minimize their impact, wherever they are found.

Commonwealth connection spans continents

An obsessive focus on traceability and biosecurity can sometimes come off as overbearing or simply unnecessary, but by concentrating on enhancing knowledge of the system, improving its delivery and encouraging participation, even doubters can be converted to believers.

“Sharing information helps everyone,” said Green. “We all know that there are market considerations when it comes to these things, but it isn’t a contest when we’re talking about animal health and protecting agriculture. We all want the same thing in that space.”

For its part, Alberta Pork has taken away a better sense of how Australia handles traceability and biosecurity, and the organization hopes the information shared back with Australia will benefit that country, likewise.

“It was a great opportunity for us to showcase how Canada is progressing in this area,” said Shipp. “This was a unique chance to create a new connection that will hopefully help us, going forward.”

This spirit of cooperation bodes well for both Canada and Australia, and the recent meeting of minds between passion-

ate industry representatives has proven fruitful in terms of furthering discussion and understanding. ■

The graphic features the ExoFlare logo at the top, which consists of a hexagonal shape with the word 'ExoFlare' inside. Below the logo, the text 'Biosecurity risk assessment made easy' is prominently displayed. Underneath this, there are four circular icons arranged vertically, each paired with a text label: a clock icon for 'Real-time', a document icon for 'Paperless', a checkmark icon for 'Auditable', and a magnifying glass icon for 'Traceable'.

Earlier this year, Australian Pork launched an app that assesses the biosecurity risk of any farm visitor in less than 30 seconds. The app and the company that developed it are called ExoFlare, based in Australia.

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Local diagnostics lab supports healthy production

Andrew Heck



The University of Calgary's Faculty of Veterinary Medicine (UCVM) Diagnostic Services Unit (DSU) is undergoing a transition to serve not only students but the broader livestock industry.

Livestock disease outbreaks are never good but having the right resources to detect and defend against disease is critically important for the entire pork value chain.

The University of Calgary's Faculty of Veterinary Medicine (UCVM) Diagnostic Services Unit (DSU) opened in 2010 and offers fee-for-service testing. In 2020, through the Enhanced Livestock Diagnostics pilot project, the fees became Alberta-supported for livestock submissions, resulting in more affordable costs compared to shipping out-of-province.

Located in northwest Calgary, at the university's Spy Hill campus, samples are received during regular business hours with after-hours drop-off available around the clock, seven days a week, excluding the Christmas break. Most preliminary results are received within two days, depending on the type of diagnostic test. This shift toward industry diagnostics broadens the lab's previous focus, which was aimed more toward students and research.

"We can test any species that isn't human, including wildlife," said Lindsay Rogers, Program Outreach Coordinator, DSU. "Under the terms of our grant, several species of production animals are covered, including pigs, cattle, poultry, sheep, bison, elk, deer and other species."

With funding through the Canadian Agricultural Partnership (CAP) and Results Driven Agriculture Research (RDAR) until 2024, use of the DSU has seen a significant uptick since transitioning.

"The DSU acts as a hub for vets, so we don't have to look for different labs," said Rienske Mortier, Veterinarian, Prairie Livestock Veterinarians. "It's very convenient, and the lab staff have a great sense of communication with us."

For producers, having a direct diagnostics pipeline should be reassuring, as time is of the essence whenever clinical signs of disease are observed in a herd.

"What the DSU offers for producers is a close-to-home, timely outlet for confirming or negating the presence of a pathogen," said Javier Bahamon, Qual-

ity Assurance and Production Manager, Alberta Pork. "One of the most difficult parts of disease investigation is nervously waiting on results, but DSU cuts this time dramatically for detecting diseases."

Not only as a threat to animal health, livestock disease can have implications for food safety and international trade. As such, disease detection and surveillance are crucial for the industry.

Diseases differ, detection stays the same

Depending on the suspected disease, it may be reportable or notifiable at the provincial or federal level of government. 'Reportable' diseases are those that pose significant threats to animal health, public health or food safety, requiring a response to control or eradicate. 'Notifiable' diseases are those that are monitored for changes or unusual trends.

Federally reportable diseases affecting pigs include, but are not limited to, African Swine Fever (ASF), Foot and Mouth Disease (FMD) and Trichinellosis, while provincially reportable diseases in Alberta would be forms of swine coronavirus, including porcine epidemic diarrhea (PED), delta coronavirus and transmissible gastroenteritis (TGE). Alberta's 2019 outbreak of PED, pre-dating the transition of the DSU toward industry diagnostics, was confirmed three days following sampling. If in-house PCR testing is established at the DSU, improved turn-around times for cases such as these would be likely.

"We are obligated to pass information on to the provincial or federal government in the case of a reportable or notifiable disease, but the advantage for vets and producers is response time," said Rogers. "Moreover, anonymous data from investigations makes its way back into educating our students, who will become the next generation



The DSU lab includes an after-hours, secure, climate-controlled drop-off locker for samples delivered by vets.

of professionals in the industry, so it's a full-circle process."

Even when tests return negative results for a suspected pathogen, the information adds to the knowledge of animal health status across the province, which has value for disease prevention.

"We've performed thousands of tests at high-traffic pig sites for nearly eight years," said Bahamon. "The vast majority have come back negative, and with the added capacity of the DSU, testing is easier and more affordable than before."

Following the completion of a test, the DSU bills the herd vet, and the herd vet then bills the producer. Because the

DSU operates with grant funding, Alberta-based vets are offered services at a discounted rate, which may be passed on to their producer clients. The financial incentive alone ensures producers are not stuck with additional on-farm costs, and it lowers the price tag that is often inevitable with herd health monitoring.

"It's win-win for producers," said Bahamon. "Your vet helps you, the lab helps the vet, and quicker testing can result in potentially quicker disease response."

Less guessing, more checking

Symptoms of disease can be confusing, even for vets. Often, they are straightforward enough to be observed with the

naked eye or based on changes in productivity, but it is impossible to be sure of disease without testing.

"It's sometimes possible to accurately guess what's going on in a barn, but you never know until you test," said Mortier. "If I think something is viral, and I'm not sure what it is, I can still send it to the DSU and get a better idea. I don't have to discriminate, which is the nice thing."

In fact, Mortier has had positive disease cases confirmed by the DSU.

"Breaks of diarrhea in nursery barns with piglets are not totally uncommon, so I wasn't sure what was going on in one particular instance," said

CONTINUED ON PAGE 16



Clinical signs of one disease can often be indistinguishable from another, making testing an invaluable part of the process. This pig was seen coughing, then sampled and tested at the DSU. As it turned out, the barn had an influenza-related outbreak.

Mortier. “I sent a bunch of samples to the lab, and within the day, they were able to tell me the issue was *Salmonella*. I had to immediately inform the barn about the problem and create a plan of action. After that, follow-up testing was done for further analysis and to determine a path forward.”

In livestock, various types of *Salmonella* infection are provincially reportable in Alberta. When consumed by humans, *Salmonella* can present a major risk of foodborne illness. Between 2020 and 2022, the Government of Alberta reported nearly 70 cases of *Salmonella enteritidis* in livestock, but numbers can be deceiving. Is a high number a good thing or a bad thing? Ultimately, any number of disease cases discovered creates an opportunity for positive change.

“It’s better to know than not know,” said Mortier.

Plenty to celebrate, more to gain

Going forward, Alberta Pork hopes for continued support for the DSU, given its value to producers.

“We want to do everything we can to promote the services of the DSU for the benefit of our producers,” said Bahamon. “Producers and vets have a huge opportunity to leverage the potential of the DSU to improve their

own operations and protect the industry at large.”

Currently, nearly half of all cases referred to the DSU required polymerase chain reaction (PCR) testing as a secondary step to verifying samples; however, this capacity does not exist in-house.

“We do still have to send some samples out for validation,” said Rogers. “Additional capabilities within our lab and team would be required to streamline this process, but it would represent a desired improvement.”

For now, having a state-of-the-art livestock disease lab in Alberta, for Alberta producers, is a major plus when it comes to disease prevention and response. Pork industry partners and end-users, likewise, can have confidence that the value chain’s ability to manage pig health is strong and getting even better. ■



In-house PCR testing would be the next logical step for the DSU. Image © Rror

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Global pork competition remains fierce

Kevin Mosser

Editor's note: Kevin Mosser is the Senior Director, Global Marketing, Canada Pork. He can be contacted at mosser@canadapork.com.



Pork is a staple in many Asian cuisines. Braised Canadian pork belly and bok choy (a type of cabbage), shown here, is one example of Asian inspiration using Canadian ingredients.

The Canadian pork industry has enjoyed considerable growth over the last three to four decades, due in large part to a focus on developing export opportunities for Canadian pork products around the globe. For years, markets in Asia have been considered highly regarded outlets for quality-assured pork processed by Canada's federally inspected packers, from pigs raised by the many farmers found from coast-to-coast.

Today, Canada is the world's third-largest exporter of pork behind the European Union (E.U.) and the U.S. Currently, Canada exports 71 per cent of all pork produced, which is higher than any other international producer. Chile exports 42 per cent of its pork, followed by Brazil at 30 per cent, the United Kingdom (U.K.) at 27 per cent and the U.S. at 24 per cent.

Competition is fierce as countries look to expand their share of the export marketplace. Competitive market access for Canadian pork products remains one of the most important challenges facing the industry, for packers and producers alike.

Recently, a delegation of representatives from Canada Pork and Canada Beef visited several Asian countries to meet with protein industry players and showcase Canadian red meat. Canada Pork, formerly known as 'Canada Pork International,' is the market intelligence and promotional organization for the Canadian pork industry, established in 1991 by the Canadian Pork Council (CPC) and Canadian Meat Council (CMC).

International trade show attendance has long been a critical relationship-building exercise for Canada Pork. COVID-19 encouraged us to adapt to virtual options for reaching our audiences, but there is no doubt that face-to-face interactions are better at reinforcing Canada's respected reputation in the red meat sector.

In addition, trade shows provide an opportunity to conduct technical or marketing seminars to maximize our impact and share the Canadian pork story with current and prospective foreign partners. Given these realities, trade show participation continues to

be one of Canada Pork's highest-rated activities for member companies, according to annual stakeholder satisfaction surveys.

Canadian pork's a 'thrilla in Manila'

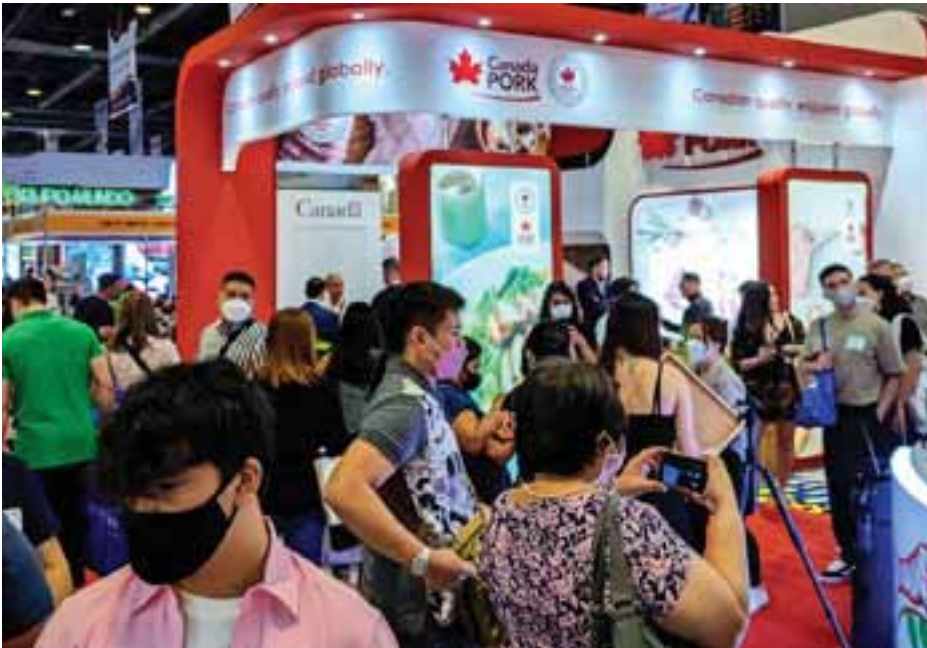
To kick off our latest mission to Asia, Canada Pork participated in the World Food Expo (WOFEX) held in Manila, the Philippines, in early August. WOFEX hosts more than 50,000 attendees annually and is the largest food and beverage show in the country. Canada Pork's Market Development team exhibited alongside 12 Canada Pork members from six Canadian pork export companies.

The Philippines was the fifth-largest market destination for Canadian pork in 2021 by both volume and value, representing 125,000 tonnes and \$300 million.

While in Manila, Canada Pork collaborated with the Trade Commissioner Service in the Philippines – the Government of Canada's overseas business development bureau – to organize a series of meetings between Canadian pork exporters and local meat importers. More than 75 Filipino in-market buyers were matched with Canadian companies during the three-day event.

Trevor Sears, President & CEO, Canada Pork delivered a presentation on the importance of the Philippines market to the industry.

"Premium-quality Canadian pork is the result of the hard work of our many producers and processors," said Sears. "At home in Canada, and here in the Philippines, consumers are afforded the same trustworthy, delicious, nutritious protein that is incredibly versatile and reliable."



World Food Expo attendees in the Philippines flocked to the Canada Pork booth to learn about the quality and taste of Canadian pork.

'Sling'ing Canadian pork in Singapore

In September, Canada Pork took part in two international events in southeast Asia. First was the Food and Hotel Asia (FHA) trade show in Singapore. FHA took place early in the month at the Singapore Expo, featuring more than 2,000 exhibitors and 50 international group pavilions, hosting more than 57,000 visitors from around the world. Six Canada Pork member exporter companies participated in the Canada Pork booth at FHA.

The event also included a joint Canadian Meat Seminar, presented by Canada Pork and Canada Beef for 45 meat buyers from all over the region to learn more about Canada's commitment to offering premium quality meat that global consumers know and love. Presentations were delivered by Sears and Albert Eringfeld, Executive Director, Export Market Development, Canada Beef.

On the pork side, the seminar provided a look at global market conditions, an overview of the Canadian pork industry and available supporting resources, along with an exploration of the Verified

Canadian Pork brand. The Verified Canadian Pork logo appears on packaged pork products sold at the retail level in Canada and overseas, informing consumers that these products are backed by top industry standards in food safety, animal care and traceability.



Trevor Sears was interviewed by a local food blogger at Food and Hotel Asia about Canada Pork's experience at the event.

The Verified Canadian Pork value proposition is built upon the connection between Canada's on-farm and in-plant quality assurance systems. For producers, those are represented by the PigSAFE and PigCARE components of the Canadian Quality Assurance (CQA) and Canadian Pork Excellence (CPE) programs.

Don't 'Pho'-get Vietnam

Following FHA, in late September, Canada Pork traveled to Ho Chi Minh City and Hanoi, Vietnam to host meetings between Canada Pork member delegates and local importers.

Vietnam was the seventh-largest market for Canadian pork by volume and eighth-largest by value in 2021, representing almost 25,000 tonnes and more than \$50 million.

The visit to Ho Chi Minh City also provided the opportunity for the Canadian delegation to visit with several large importers to conduct high-level meetings at their corporate offices, followed by tours of local grocery stores around the city.

CONTINUED ON PAGE 20



Information session participants are provided various resources to keep Canadian pork on their minds.

Between Singapore and Vietnam, the two-week trip provided the occasion to meet new customers, create market development opportunities, and build profile and awareness for



Up next, Canada Pork will meet the world in France for SIAL Paris.

Canada Pork in southeast Asia – a fast-growing market for Canadian pork.


Canadian quality, enjoyed globally

Following the successful visit to Asia, in mid-October, Canada Pork will accompany Canadian pork exporters at SIAL Paris, held every two years. The *Salon International de l'Alimentation* (SIAL) network was founded in 1964 and today includes 14 leading food and beverage shows across the world.


Whether in Asia, Europe or elsewhere, international trade shows and market development activities, including seminars and business-to-business sessions, are important components of an overall strategy to improve market access and establish a global preference for Canadian pork.

Market access and global preference, in turn, benefits not only our trusted international buyers but also the tens of thousands of individuals whose livelihoods are based in Canadian pork production, processing and related parts of the value chain. Canada Pork is proud to represent these members and works tirelessly to promote their good work and products. ■


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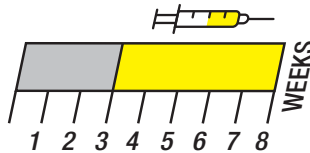
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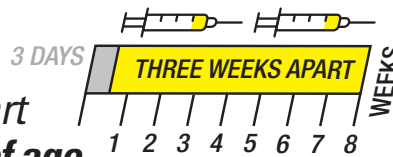
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Legislative changes prompt industry response

Andrew Heck



Sébastien Angers is one of duBreton's independent producer-suppliers. He is an agronomist by training and, since 2007, has operated an outdoor, organic farm near Ste.-Monique de Nicolet, about halfway between Montreal and Quebec City.

One of the few prospects more daunting than change itself, is forced change. In livestock production, the use of legislation to satisfy lofty social pressures has often placed farmers and consumers at loggerheads, to the detriment of both.

In 2016 and 2018, respectively, governments in the U.S. states of Massachusetts and California brought forth proposals to update spacing standards for livestock. Voters in both states approved. Massachusetts' Question 3 was set to go into effect this year, but an industry-led court challenge has stayed its implementation, for now. Likewise, California's Proposition 12 has faced implementation hurdles but is currently poised to come online early next year. Meanwhile in Canada, updates to the National Farm Animal Care Council's (NFACC) *Code of Practice for the Care and Handling of Pigs* will mandate group housing for all sows by 2029, after an extension from the earlier 2024 deadline.

In business, setting yourself apart from your competition is one path to success. For duBreton, that path is well-travelled.

The Quebec-based, integrated producer-processor raises hogs on its own farms, fed by its own feed mills, and also purchases from independent producers in Quebec, Ontario and the Maritimes. The hogs are slaughtered at the company's own facility and further processed at its two other Quebec plants and one in New Hampshire, with a focus on cured products like bacon and sausage. With niche markets primarily in Japan, the U.S. and soon-to-be Europe, the business has grown steadily with 'the times.'

The difference between duBreton and other major players on the Canadian scene is that, since the late 1990s, duBreton has actively pursued specialized designations for its products, including 'organic' and 'certified humane.' For many producers, and some consumers, it is easy to scoff at these descriptions. Products bearing such distinctions cost more to create, and they are more expensive at retail. As many consumers are already very price-sensitive, it may not make sense to dedicate so much energy to generating products that come with a higher price tag than comparable

goods.

Opinions on the heavy-handed legislative approach to governing animal welfare varies widely within and outside of the industry. However, the proactive leadership historically shown by producers and processors – when it comes to taking small steps toward improvement – may not be enough for long, for some critical observers. As time goes on, the call for new requirements – whether scientifically based or not – grows stronger, and not just from animal activists but also among increasingly informed consumers. For at least some of those consumers, the inflated dollar amount is worth the money, and for the suppliers who are prepared to meet those expectations, like duBreton, the window of opportunity is wide open.

duBreton does it differently

In 1944, Napoléon Breton and his wife, Adrienne, purchased a general store in Saint-Bernard, Quebec, about 50 kilometres southeast of Quebec City. The Bretons were looking at expand the business interests of their farming operation, which was established in 1928. In the 1960s, Lucien Breton took over from his father, and in 2019, Vincent Breton remains as President & CEO of the storied company.

"We want to do agriculture differently," said Breton. "Being competitive in this area can be difficult, but we stand behind our values, and we strive for excellence, teamwork and sustainability."

Constant evolution has been the name of the game for duBreton and the speciality pork market. In Japan, the company sells into Costco – one of the country's most popular retailers – and in the U.S., Whole Foods, which has struggled to gain a foothold in the Canadian market.

"When we first started talking to Whole Foods, they were highly decentralized and did not have a lot of clear guide-



Vincent Breton is proud to carry on his grandparents' and parents' legacy of producing high-quality food. Today, duBreton products are found in Canada, the U.S., Japan and Europe.

lines,” said Breton. “They used to visit our farms one at a time to determine whether they were acceptable.”

Over time, the company has earned certifications such as the Canada Organic Trade Association’s ‘Certified Organic,’ the U.S. Department of Agriculture’s (USDA) ‘Certified Organic,’ the Global Animal Partnership’s ‘Animal Welfare Certified’ and Humane Farm Animal Care’s ‘Certified Humane,’ all of which have contributed to demonstrating duBreton’s value proposition. As voluntary programs, they have given the company

a boost over competitors that are now left wondering how quickly, cheaply and easily it may be to convert to a system that aligns with incoming legislative changes.

“It’s a huge commitment,” said Breton. “It’s not just a business aspect; it’s a cultural standpoint. People have to believe in it, and some people have not been able to embrace that change.”

Speaking about the expectations and understanding of producers, Breton believes a shift in mindset may be in order: “Some producers believe they are

the experts and the only ones who know about animal welfare. But at the end of the day, what does the customer like or dislike about what you’re doing?”

One of the most contentious issues between producers and packers surrounds profitability and value-sharing. The same legislative approach that has arbitrated hog and pork prices in Quebec has also handcuffed duBreton to an extent, when it comes to transitioning, since contract lengths are capped at three years.

“Integration has been the only way around this,” said Breton. “The regulations don’t work for us, currently, since it takes longer than three years to retrofit a farm and start producing pigs that meet our standards, so it’s a barrier for those who want to start working with us but also need to get paid.”

In addition to the problem of contract lengths, Breton rejects the concept of arbitrated pricing. Instead, he believes equity should come from the within the company, rather than external impositions.

“We pay based on cost of production,” said Breton. “One of the advantages of being integrated is that we control a lot of what we do, but we still rely on independent farms. We pay them like we pay ourselves, not based entirely on market fluctuations for the price of the animal.”

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The Whole Foods grocery chain's growth in the U.S. is a testament to shifting consumer attitudes toward product claims that associate ethics with quality.

Despite obstacles that have taken years to overcome, duBreton has always prioritized its end-users over mass production and unchecked expansion.

"If we want farmers to survive and thrive, how do we do that?" Breton asked. "I don't think it's about trying to be the biggest company. I think it's about raising the animal in the way that the consumer wants. If they want a red barn with windows and animals going outside, why not?"

Passion in pursuit of excellence

Marco Dubois is a human resources advisor with duBreton. He also moonlights as a professional football player. Hailing from La Salle, Quebec – a Montreal suburb – Dubois trades in his office attire for pads and cleats each spring. Currently, he is a receiver with the Ottawa Redblacks of the Canadian Football League (CFL).

"I was playing football at Laval University with Vincent's nephew, who is also the son of our Vice President of Human Resources," said Dubois. "At the time, I was looking for a job in my field of study, and duBreton was looking to hire someone in HR, so it worked out nicely."

During the CFL season, Dubois and duBreton have a mutual understanding

that football comes first, though Dubois remains as a permanent employee year-round. He works remotely as needed, but during the off-season and during bye weeks in the football season, he splits his time between duBreton's corporate and processing offices in Saint-Bernard.

"I train every day, so work-life balance is very important," said Dubois. "In my first year with the company, I even set up my own gym in a barn, but now, the company has gyms at its offices."

Not only does duBreton offer employees on-site fitness opportunities, but the company also funds employees' children's enrolment in sports programs, and they recently began offering on-site daycare services.

"The company culture helps us stand out just as much as our product," said Dubois. "The company values align with my own, including leadership."

While he is fully committed to his football career, Dubois knows his playing days will not last forever. Post-playing, he would like to settle into a coaching role, while also staying in the pork industry, continuing to exercise his easily transferrable skills as people-person who works toward team success, lifting others up and helping them reach their potential.

Family connections run deep in the Dubois family as in the Breton family. Earlier this year, Marco's grandfather, Jean-Guy, passed away. Jean-Guy lived with Marco's immediate family for the better part of Marco's childhood. He remembers Jean-Guy fondly, as his biggest supporter in sports, growing up.

"I learned a lot from my grandfather," said Dubois. "He was very proud of me



Whether in the office or on the gridiron, duBreton staff members believe strongly in the company's values, and the commitment to upholding those values shows.

and happy I was able to get this job from such an awesome second family [duBreton]. They're passionate people. They work hard and play hard."

Change can and should come from within

duBreton's attempts to distinguish its products through forward-thinking production and processing have helped the company score significant touchdowns over the years. The company's caring approach to pigs and pork translates into care for employees, cultivat-

ing an atmosphere in which winning comes naturally, though not without putting in effort.

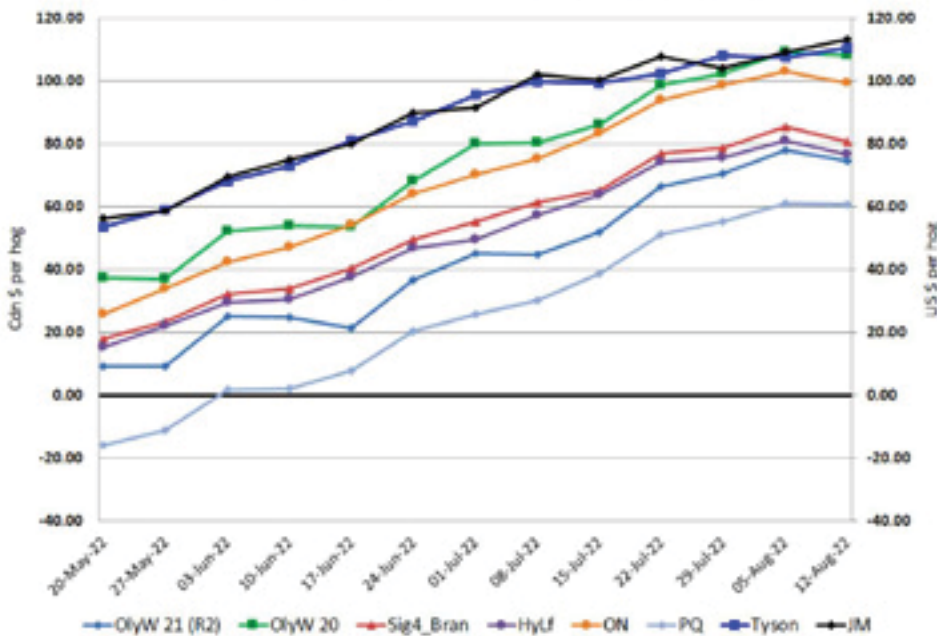
Not every producer is willing or capable of taking their business back to the drawing board, as duBreton has done. And for the sake of diversity in the sector and consumer choice, that is fine. Hog prices in 2022 have been at a five-year high for most producers outside of Quebec, and packers processing conventional pork have experienced no shortage

of revenue either. High on-farm costs continue to dampen profits, but the situation has certainly improved over recent years of sheer losses for many.

Values aside, the free market has a way of reflecting what consumers will tolerate. In most parts of Canada, average-income shoppers are likely not yet ready or willing to buy pork on product claims alone, especially at a premium price. But, globally, the appetite is there, and bellies are rumbling. duBreton's game plan of creating niche products with a compelling story has driven the company's success, and in the case of addressing societal conditions, the business case has proven itself.

It can be hard during good times to actively remember tougher moments in the industry, but it would be unwise for anyone to ignore the elephant in the room, which is legislative change and cultural evolution. With the clock winding down on incoming sow spacing requirements in Canada and the U.S., now may be as good a time as any to seriously consider making the investment in new practices, before it becomes a 'hail Mary' situation. ■

Canadian & US Margins Last 13 weeks



Cost of production has jumped dramatically in the past two years, but so have hog prices. Is now the least difficult time to react to incoming sow spacing changes? Chart © Commodity Professionals Inc.

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Feds invest in ASF preparedness

Marie-Claude Bibeau, Minister, Agriculture and Agri-Food Canada and Rick Bergmann, Chair, Canadian Pork Council (CPC) gathered in late August to announce an investment of up to \$45.3 million to enhance efforts to prevent African Swine Fever (ASF) from entering Canada and prepare for a potential outbreak. The funding will be critical to reducing the risk of introduction and spread of ASF in Canada.

“This announcement is significant and purposeful for Canadian pork producers,” said Bergmann. “We welcome the government’s investment towards keeping ASF out of our country and off our farms. We have seen the negative impact of ASF in other parts of the world, which demonstrates the need for this collaboration between government and our sector.”

\$23.4 million will go toward the pork industry’s prevention and mitigation efforts, including biosecurity assessments, coordination for wild boar eradication, retrofitting meatpacking plants and ASF-related research projects.

\$19.8 million will go toward the Canadian Food Inspection Agency (CFIA), including enhancing laboratory capacity, establishing zoning agreements with additional trading partners and developing a vaccine that meets the needs of Canadian farms.

\$2.1 million will go toward the Canada Border Services Agency (CBSA), including preventing the entry of high-risk pork products by enhancing public awareness, improving commercial targeting and developing training for border services officers.

Ontario producers eye expanded processing capacity

A group of hog producers from Perth County, Ontario, dubbed the ‘NextGen Pork Partners,’ formed earlier this year to explore interest for expanding pork processing capacity in that province.

In mid-September, the group issued a questionnaire through Ontario Pork to collect data from the province’s producer base. Gathering hog supply numbers and information around medium-term hog marketing will be used to meet with prospective processing partners, potentially leading to the development of a business plan to pitch to industry investors.

According to the Ontario Pork communication: “For this initiative to succeed, a committed hog supply is key. If you, as a producer, see value in supporting an increase in Ontario’s processing infrastructure that supports your business and future production, then submit your hog numbers as soon as possible. To gain engagement from potential processing partners, our target is 20,000 hogs per week.”

The communication explained further: “We understand that this comes at a time when producers are bearing high costs and are needing a more local alternative, young producers looking for stability when starting up or taking over a farm business, producers that are uneasy with their current marketing arrangement, and producers looking to grow their businesses. These are just a few reasons for considering this initiative.”

The committee has an initial target of \$250,000 of seed money or “\$1,000 plus \$5 for every expected hog you would ship in a week, or annual shipments divided by 52, five years from now... For example, if you ship 500 hogs per week or 26,000 per year, you will contribute \$3,500.”

The deadline for submitting the questionnaire is mid-October, with a follow-up meeting scheduled for the early part of next year.

Swine Innovation Porc enters new era

Daniel Ramage joined Swine Innovation Porc (SIP) in mid-August as the organization’s new general manager, following the departure of Abida Ouyed, who held the position for the past six years. Arno Schober was elected as board chair late last year, following the departure of Stewart Cressman, who held the position for the past 12 years.

“We are excited about SIP’s future and look forward to the continued development of this organization and its impact in the advancement of the pork value chain,” said Schober. “Through this appointment, the board is focused on maintaining and expanding SIP’s leadership within the Canadian agriculture industry and research ecosystem.”



The funding was announced live at the Centre de développement du porc du Québec (CDPO) in Quebec City.



Daniel Ramage

Over the past 15 years, Ramage has provided leadership to the agri-food industry in Canada and globally through diverse roles, including at Cereals Canada, the Saskatchewan Ministry of Agriculture and Genome Prairie. He is an advocate for innovation and the sustainable growth of Canadian agriculture, and is deeply knowledgeable about market development, policy and program development. He is bilingual in English and French and lives in Winnipeg.

“I look forward to working collaboratively with the SIP team together with provincial pork organizations and partners across the national value chain,” said Ramage. “Building on SIP’s success through cooperation across Canada’s pork sector is pivotal to mobilize new solutions and advance growth opportunities for the industry.”

Since 2010, with funding from provincial pork organizations across the country,

SIP has been responsible for providing leadership in research, development and knowledge transfer to enhance the growth and competitiveness of the Canadian pork sector.

Animal Health Canada continues to evolve

Over the course of the past year, Animal Health Canada has completed major work to realize its new vision and mission, with an organizational re-branding, new projects and appointing new leadership.

Formerly the National Farmed Animal Health and Welfare (NFAHW) Council, in mid-September, Colleen McElwain was named Interim Executive Director for the renamed agency. She previously served as Operations and Animal Health Director for the organization and has a long history of progressive leadership experience within agriculture.

In early August, Agriculture and Agri-Food Canada (AAFC) announced an investment of nearly \$3 million into Animal Health Canada to update national codes of practice for the livestock sector, including the Code of Practice for the *Care and Handling of Farm Animals: Transportation*.

“We’re pleased to continue working collaboratively with industry, government, veterinary and animal welfare professionals to continue in developing the codes of practice through the National Farm Animal Care Council [NFAACC],” said Melanie Barham, outgoing Executive Director, Animal Health Canada. “Evidence-based co-development is a cornerstone of how the codes are created and updated,

and we are excited to lead this project into its final year of funding.”

In late August, Animal Health Canada confirmed funding for a third year of African Swine Fever (ASF) planning and preparedness, as part of the Pan-Canadian Action Plan for ASF. In addition to government funding, support also comes from the Canadian Pork Council (CPC), Canadian Meat Council (CMC), Canadian Food Inspection Agency (CFIA) and AAFC through the AgriAssurance Program for the Animal Health Emergency Management (AHEM) Project.

“We are grateful to all of our funding partners for their support in this initiative,” said Barham. “It certainly mirrors the collaborative spirit and the collective desire from all stakeholders to mitigate the risk of ASF.”

The ASF project is a pilot as part of Animal Health Canada’s transition to a new model of increased collaboration with government partners and subject matter experts on the ASF Executive Management Board (ASF EMB).

In early September, Animal Health Canada released its Plant and Animal Health Strategy (PAHS) five-year progress report, detailing how, since 2017, this strategy has provided a national vision to address and prevent evolving risks to plant and animal health. PAHS is a collaboration between governments, industry, academia and other partners that includes several areas of focus: livestock disease surveillance, preparedness and response; biosecurity; quality assurance programs; animal welfare codes of practices; and antimicrobial use.

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Quebec research centre celebrates 30th anniversary

The *Centre de développement du porc du Québec* (CDPQ) celebrated its 30th anniversary during the organization's annual general meeting (AGM), held in late September. CDPQ was originally created in 1992 to support the *Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec* (MAPAQ), the province's Ministry of Agriculture, Fisheries and Food.

Today, CDPQ is one of several facilities across Canada that supports research directed by Swine Innovation Porc (SIP), focusing on the areas such as livestock management, animal nutrition, genetics, health, biosecurity and meat quality. Last year, the organization finished construction on a new research and maternity barn.

Following the AGM, a new promotional video was released detailing the features of the facility, located near Armagh, Quebec, about 80 kilometres west of Quebec City, "in a low-swine-density area, equipped with a filtered air ventilation system."

The video continues: "This farm offers optimal biosecurity conditions, to minimize the risk of unwanted pathogen intrusions.

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"The precision breeding system uses image analysis from cameras and an artificial intelligence algorithm to analyze the sows' behaviour, to determine the right time to perform insemination and optimize the number of semen doses used."

U.K. further restricts European pork

As African Swine Fever (ASF) continues to track westward in continental Europe, the Government of the United Kingdom (U.K.) placed further restrictions on the movement of pork products into Great Britain, starting in early September.

"An outbreak of African Swine Fever is one of the biggest threats our pig industry faces today," said Richard Benyon, U.K. Minister for Rural Affairs, Access to Nature and Biosecurity. "It is essential we maintain the highest levels of biosecurity, and all visitors to the U.K. will need to abide by these new regulations."

The new restrictions have been put in place following an update to the qualitative risk assessment for ASF's entry into Britain, which was originally completed in 2019. The update has concluded there is a 'medium' level of risk of ASF entering via "human-mediated routes." Prior to April 2022, the risk had been considered 'low.'

The new restrictions stipulate a two-kilogram limit for pork products without commercial inspection originating from the European Union's (E.U.) 27 member states or from Switzerland, Norway, Iceland and Liechtenstein, which are non-E.U. members of the European Free Trade Association (EFTA). Pigs and pork from parts of certain E.U. states – especially Bulgaria, Romania, Poland, Lithuania, Latvia and Estonia – are subject to harsher restrictions, with exemptions provided if specific conditions are met. The U.K. left the E.U. in 2020.

ASF vaccine faces setback in Vietnam

Vietnam's agriculture ministry halted the use of a vaccine against African Swine Fever (ASF) in early September, which had originally been deployed in July following a year-long development process, as reported in early June. Suspension of the vaccine was prompted following the deaths of dozens of inoculated pigs.

Approximately 600 pigs were administered the vaccine, which was developed by Navetco, a state-owned company. An estimated 600,000 doses have been produced but will now be shelved pending the results of further investigation into the deaths.

Vietnam has been ravaged by ASF since 2019, forcing the country to cull 20 per cent of its hog herd, in 2020. This year, nearly 40,000 pigs have been culled. ■



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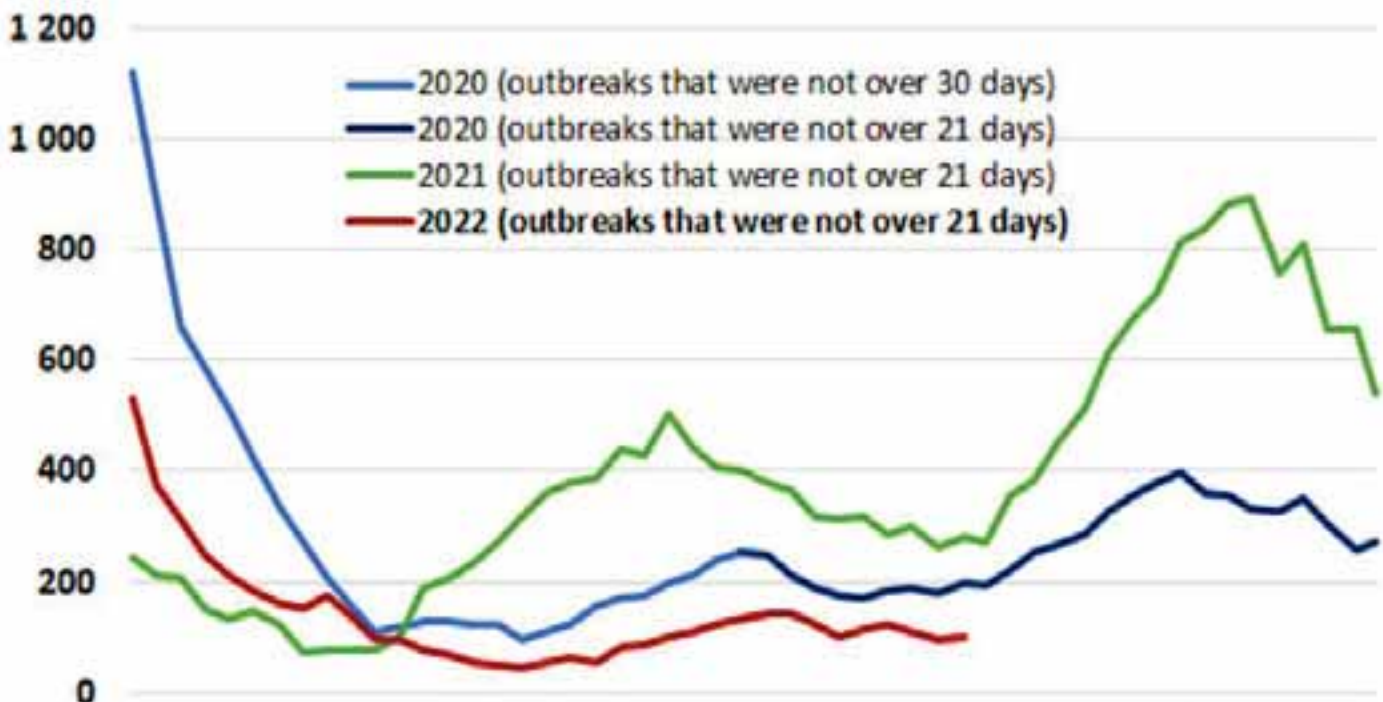
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Figure 1. Cumulative number of affected communes since January 2020 in Viet Nam



Vietnam has 63 provinces divided into 11,000 communes. Since 2019, all provinces have encountered ASF outbreaks. In early 2020, nearly one-tenth of all communes reported active outbreaks.

PRRS anti-viral treatment could be coming

Carl A. Gagnon

Editor's note: Carl A. Gagnon is a veterinary scientist at the University of Montreal's Swine and Poultry Infectious Diseases Research Centre. He can be contacted at carl.a.gagnon@umontreal.ca.

Porcine Reproductive and Respiratory Syndrome (PRRS) results in reproductive failure, late-term abortions, an increased number of stillborn fetuses or the birth of premature and weak piglets. This global phenomenon also leads to increased morbidity and mortality in growing and finishing pigs as a result of severe respiratory disease and poor growth performance.

As PRRS continues to take a large toll on the swine industry in terms of ani-

mal health and lost revenue, an effective anti-viral treatment for the disease has remained elusive. One potential solution to this problem includes the use of a substance derived from *Actinobacillus pleuropneumoniae* ("App") – a pathogen responsible for about 20 per cent of bacterial pneumonia in pigs, causing inflammation of the lungs and, potentially, death.

In this particular case, perhaps surprisingly, the pathogen is beneficial. By

studying the co-infection of PRRS virus and App, which occurs naturally in pigs, it has been demonstrated that heat-resistant App-secreted metabolites have a positive anti-viral effect against the PRRS virus, but, until recently, the specific metabolites responsible were unknown.

As such, it has become necessary to find out which App metabolites are behind this anti-viral effect, to further isolate and test them. If it is possible to isolate

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PRRS is estimated to cost the U.S. industry nearly USD \$700 million (CAD \$950 million) annually. Combining various jurisdictions in Europe, the total reaches more than €1.5 billion (CAD \$2 billion) each year. Recommendations for preventing the spread of PRRS are identified in several parts of the Canadian Pork Excellence (CPE) program manual's section on biosecurity.



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and test those metabolites, it may offer a potential solution for combatting PRRS virus at the cellular level.

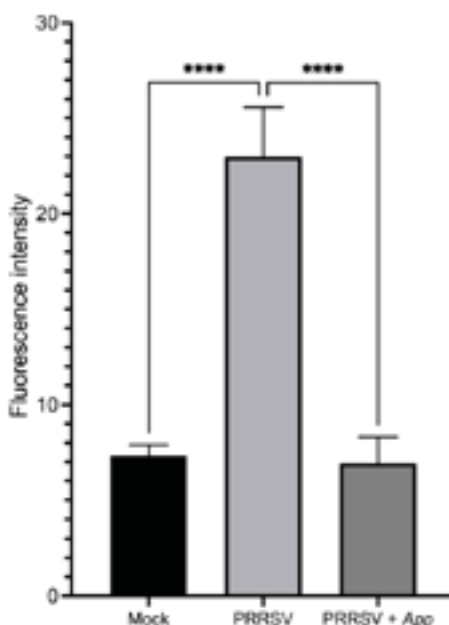
Taking a closer look at App metabolites

Targeted mass spectrometry has made it possible to take a closer look at how a certain PRRS-infected porcine cell line reacts when exposed to App. By using untargeted spectrometry, it is possible to examine a wider spread of potential culprits.

After analyzing mass spectrometry data, various App metabolites stood out. All of the top-five App-secreted metabolites were adenosine nucleoside analogs – a class of metabolites widely known to have anti-viral properties. Fortunately, many adenosine nucleotide-based drugs are commonly available to treat other human viruses, with extensive research promoting their use.

The identified metabolites were further analyzed to better understand the

concentration at which they are most effective in response to PRRS virus in-



Immunofluorescence comparing a PRRS virus sample to a sample of PRRS virus mixed with App shows that the latter has a significant anti-viral effect versus the control 'mock' sample (with no infected cells).

fection. Three of the five metabolites subject to analysis proved efficient in reducing the growth of PRRS virus in cell culture, which is good news, at least in a lab setting.

Existing drugs could act as PRRS anti-virals

Adenosine nucleotide analog anti-viral drugs act against certain human viruses – including strains of Hepatitis and HIV – to limit their growth. These drugs function similar to how App affects PRRS, though the relationship warrants further investigation.

For application at the farm level, it is uncertain how practical it would be, at this time, to begin employing such anti-virals against PRRS, given the required concentration of metabolites. However, confidence remains, given the commercial availability of those comparable anti-viral drugs, providing hope that a PRRS anti-viral may be on its way before long. ■



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Dietary lysine helps grow milk-synthesizing tissue

Chantal Farmer

Editor's note: Chantal Farmer is a research scientist at Agriculture and Agri-Food Canada's (AAFC) Sherbrooke Research and Development Centre. She can be contacted at chantal.farmer@agr.gc.ca.



Today's greater size of piglet litters presents a problem for sows when it comes to producing enough milk. Dietary lysine is a potential solution.

Without nutritional approaches to benefit performance, sows do not produce enough milk to sustain optimal growth of their litters. This is especially challenging considering the

advances in genetic lines to produce litters of greater size than ever before. This situation presents a major problem for the hog industry, making it imperative to develop strategies to in-

crease the amount of milk available to suckling piglets.

Lysine is the first limiting amino acid in most swine diets, and it is most important during late gestation when the majority of fetal and mammary growth occurs. 'Mammogenesis' refers to the process during which pigs grow milk-synthesizing tissue. During this critical period of time, however, it is not known which specific amino acids are required to fully support this essential process. Recently, a project was carried out at Agriculture and Agri-Food Canada's (AAFC) Sherbrooke Research and Development Centre to determine the impact of a 40 per cent increase in lysine intake from days 90 to 110 of gestation in gilts on their mammary development.

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Milk-synthesizing tissue matters for sow milk yield

The number of mammary cells present at the onset of lactation is considered the main factor for determining sow milk yield potential (*Figure 1*). Rapid mammary development occurs at three distinctive periods in the life of a pig, and it is only during these periods that it is possible to stimulate mammary growth using nutritional or other strategies.

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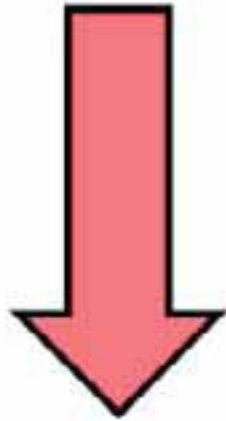


Figure 1: Increasing sow milk yield via greater mammary development

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The first period of rapid mammary development takes place before puberty, starting at approximately 90 days of age. The second period is during late gestation (from 90 days of gestation to farrowing), while the last period occurs in lactation. Nutrition in late gestation holds much promise to increase the number of milk-synthesizing cells before lactation starts.

More lysine potentially means more milk

To test the impact of lysine during late gestation, gilts were fed 2.65 kilograms of either a conventional diet providing 18.6 grams per day of standardized ileal digestible (SID) lysine, or a diet providing 26 grams per day of SID lysine with the inclusion of additional soybean meal. Both diets provided the same amount of energy.

Feeding 26 grams per day of SID lysine increased the weight of milk-synthesizing mammary tissue by 44 per cent, whereas the weight of the outside fat layer of the mammary tissue was not altered (*Table 1*). The composition of the mammary tissue was generally not affected by dietary treatment; however, greater total amounts of each tissue component, such as protein and fat, were present due to the heavier tissue weight.

These findings suggest that a greater uptake of lysine in supplemented sows supports enhanced growth of milk-synthesizing tissue. It is worth noting that the beneficial effects of added soybean meal could be due to an increased protein content or to greater concentrations of amino acids other than lysine.

What the data suggest is that increasing lysine by 40 per cent from gestation day



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90 onward, as part of a two-phase feeding strategy, could benefit potential sow milk yield during lactation.

Current recommendations not enough

The results of this study indicate that the current recommendations for including lysine during late pregnancy in pig diets are under-estimated. By providing 40 per cent more dietary lysine, with added soybean meal, producers can effectively stimulate the growth of milk-synthesizing tissue, leading to better milk production in their sows, for the benefit of today's large piglet litters. ■

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Variable measured	Treatment	
	Control	HILYS
Extraparenchymal tissue, g	1691.0	1690.2
Parenchymal tissue, g	1437.4 ^A	2073.6 ^B
Parenchymal tissue composition		
Dry matter, %	37.8 ^A	38.8 ^B
Fat, % of dry matter	63.3	60.3
Fat, g total	337.2 ^A	437.9 ^B
Protein, % of dry matter	32.9	35.9
Protein, g total	178.4 ^A	267.9 ^B
DNA, mg/g on dry matter basis	6.59	7.06
DNA, g total	3.58 ^A	5.25 ^B
RNA, mg/g on dry matter basis	7.76	8.38
RNA, g total	4.20 ^A	6.15 ^B

^{A,B} Means within a row with different superscripts differ.

Table 1: Mammary gland composition of gilts fed a control diet or a lysine-supplemented diet (HILYS) from days 90 to 110 of gestation

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