

Canadian Hog JOURNAL

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hog magazine**

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Volume 42 | Number 3

Winter 2021

Date of Issue: January 2021

Published by Alberta Pork with cooperation from producers and partners across Canada.

Subscriptions

For new subscriptions, change of address or other subscription inquiries, please contact:

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Publications Mail Agreement

No. 40062769

Return Undeliverable

Canadian Addresses to:

Circulation Department

4828 – 89 Street NW

Edmonton, Alberta T6E 5K1

Advertising

Please direct advertising and marketing inquiries to WTR Media.

Phone: 403-296-1346

Email: robert@wtrmedia.com

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Cover Photo

Brazilian-style linguça sausages, belly churrasco and sirloin picanha steaks made with Verified Canadian Pork



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The Winter 2021 edition of the Canadian Hog Journal is here!

Last year, with the latest Winter edition hot off the press, I was headed to the Banff Pork Seminar, eager to share the magazine with guests. This year, I will have to settle for sharing the PDF virtu-

ally and changing my laptop computer background to an alpine scene. Not quite the same, but it will have to do. And I can still have my pint of beer at home while listening to Irish jig music, right?

The issue of delayed Canadian Pork Excellence (CPE) program implementation persists, and this edition features the third article on the subject in as many years. Consider that a 'hat trick,' if you will, as we wait on the next NHL season to start.

Feeding human food scraps to pigs is an age-old practice for some small-scale producers, but is it an effective or safe solution to eliminating food waste? While pig production volume heavily favours the commercial industry, it takes only one disease slip-up to potentially shake the entire sector to its core and jeopardize consumer confidence, which disproportionately affects commercial producers.

Manitoba Pork's long-time general manager, Andrew Dickson, is retiring. Likewise, long-time communications coordinator, Sandy Ellis, has also left the organization. Her replacement, Joey Dearborn, has written a thoughtful career-in-review piece about Dickson, included here.

As with visiting Banff, I was looking forward to travelling to Quebec City

again this year to attend the Porc Show, but that too will have to wait. While the conference was unavailable in-person, the organizers did a nice job of hosting the event over Zoom, as you will see from the coverage.

This edition also includes many interesting news pieces, along with expert commentary on the growth of grocery e-commerce, in addition to a look at the last decade of Swine Innovation Porc (SIP), as well as research on water consumption under stress and the benefits of feeding trace performance minerals, along with a callout for producers to support an environmental footprint study.

Heading into 2021, the past year of mostly negative developments in the Canadian pork industry should, hopefully, help us see the potential positives going forward. I remain grateful to continue advocating for this sector, as I anticipate the birth of my second child – another daughter. The older one is not quite three-years-old, but she already has her mother's smarts and good looks, along with her father's way with words and habit of asking too many questions – a dangerous but exciting combination.

Whatever this year holds for us all, you may like to buckle up, grit your teeth and hold on! I will be doing likewise. Our saving grace? If industry players and publications continue promoting the right kind of content to influence decisions that benefit our sector, our odds of collective success might be better than we even know. Let me know what you think by emailing andrew.heck@albertapork.com. I want to share your views in the next 'Letters to the editor' section. Diverse perspectives equal higher-quality, thought-provoking conversations, which is what we should all be aiming for. ■

Andrew Heck
Editor

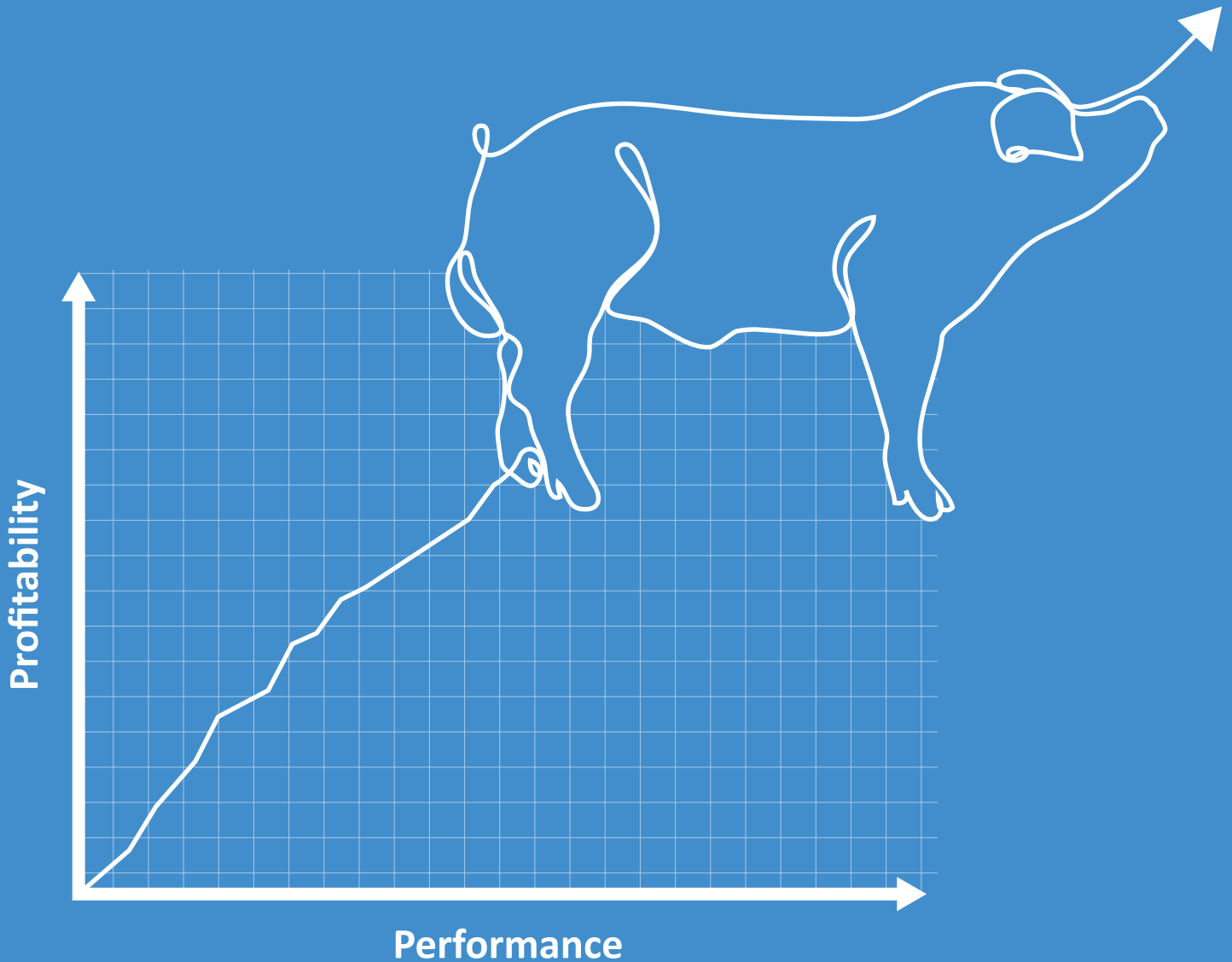
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In reply to 'Price negotiating power balance hurts producers' (Fall 2020)

"During Alberta Pork's recent annual general meeting (AGM), I put forth a resolution requesting producer support for the Alberta Pork board of directors to explore new hog marketing options, including the potential for a system like single desk selling, using Quebec's marketing arrangement as a possible example. Producers voted to approve the resolution.

"The whole idea is to get more negotiating power, and I believe that is a necessary step to take. If we leave it up to producers to pursue voluntarily, it is much less likely to work. If we look at formalizing such a system, it may be more binding and successful.

"The reason I think Alberta Pork should be the producers' marketing representative under this kind of system is practical: for the concept to work, legislation will need to be modified, which requires partners that are recognized by government. I have confidence that the Alberta Pork board of directors includes the right people and motives to represent producers in this regard.

"It is not every day we have an opportunity to inspire real change within our industry. I really hope all producers take this seriously and truly hold themselves accountable and help push things in the right direction." – *Nathan Stahl, Stettler, Alberta*

In reply to the cover of the Canadian Hog Journal (Fall 2020)

The cover image used on the Fall 2020 edition of the Canadian Hog Journal has received some positive attention from readers, including the Canadian Pork Council (CPC),



which has framed and hanged the cover at the organization's office in Ottawa.

The image itself was staged and captured in the kitchen of editor Andrew Heck, in Sherwood Park, Alberta – a suburb east of Edmonton – featuring a homemade Canadian pork and beef tourtière, along with a CPC-branded ceramic mug and other fall-themed decorations.

The cover and total magazine layout are the responsibility of Michael Poulin, a graphic designer with Capital Colour of Edmonton, the company that prints and distributes the magazine. ■



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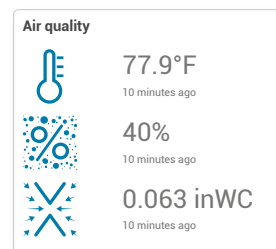
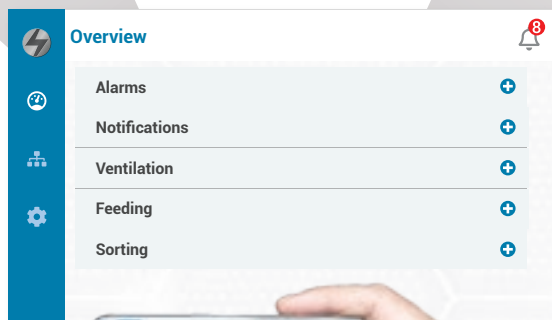
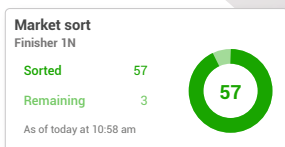
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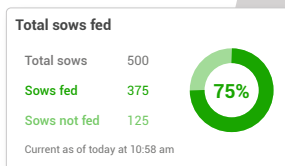
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Quality assurance value still up for debate

Andrew Heck

Three years following the launch of the Canadian Pork Excellence (CPE) program – Canada’s new and improved hog quality assurance regimen – not all producers and provinces can claim to be on a definite path toward implementation.

CPE’s barriers to actualization were covered in the Winter 2019 and Winter 2020 editions of the Canadian Hog Journal, respectively, in the articles, “Leveraging quality assurance for better pay,” and, “Quality assurance brings value, but who pays?”

And while the program seems to be off to a running start in parts of eastern Canada, in parts of western Canada, producers have approached the program more cautiously. The hesitation is owed to a stalemate that has put producers and packers at odds: what is the program worth?

Leading the quality assurance transition

In 1998, Canadian Quality Assurance (CQA) was launched as a national standard for pork producers. Together with the

Animal Care Assessment (ACA), which was introduced in 2012, these programs composed the sole unified system under which commercial hog farmers were certified prior to CPE.

Today, CQA or CPE certification is a requirement for all producers who ship pigs to any federally inspected facility in Canada. Across most of the country, that represents an overwhelming majority of pigs produced – more than 95 per cent of the total volume.

At a meeting of the Canadian Pork Council (CPC) board of directors in July 2020, an extension was granted for the recognition of CQA, which was originally slated to end entirely by January 2023. Now, the deadline has been pushed to January 2024, but that does little to advance the success of CPE. In addition, the decision was made to enable CPE validators from anywhere in Canada to train producers in any province, creating greater flexibility in program uptake.



CPE's PigSAFE component effectively replaces CQA, while PigCARE effectively replaces ACA.

In its October 2020 report, CPC released statistics on national participation in the PigSAFE (food safety) and Pig-CARE (animal welfare) components of CPE. The program's third pillar, PigTRACE (traceability), represents Canada's ongoing system for tracking pig movements. Per the report, nearly 700 farms in Quebec and more than 300 in Ontario have been certified since the program took hold more than one year ago. In Manitoba and Saskatchewan, the program came online more recently, and those provinces count nearly 200 certified farms put together. In B.C. and the Maritimes, where few commercial operations exist, no farms are yet validated; however, that process is set to begin this year for producers in those provinces.

Western producers seek solutions

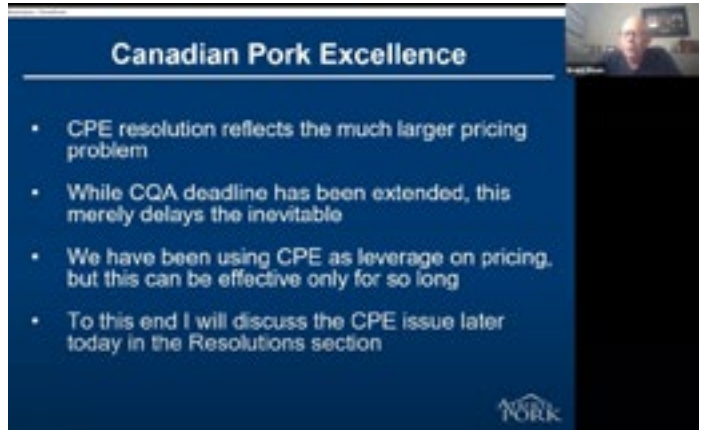
At Alberta Pork's 2018 annual general meeting (AGM), reaffirmed at the organization's 2019 AGM, a resolution was submitted to withhold CPE implementation in the province until producers could be promised \$7 per head for all CPE-validated hogs. In Saskatchewan and Manitoba, similar resolutions had previously sought compensation, with those producer organizations ultimately moving to implement CPE by the end of 2019.

During Alberta Pork's AGM in November 2020, the organization's board of directors announced a decision to emphasize broader pricing solutions, rather than narrowly focusing on CPE compensation. After two years of trying, and with no movement from packers, the board felt it was more effective to transition its efforts this way.

In addition to addressing the practical realities of the situation, the Alberta Pork board of directors recognizes that producers want to continue doing their best to safeguard Canada's food supply, while ensuring animal care remains a top priority.

"CPE is a tool that has tremendous value in the domestic and international market, and we, as producers, need to take control of this program, but Alberta Pork does not have jurisdiction to force all federal packers to pay for CPE," said Brent Moen, Chair, Alberta Pork. "We view pricing and price data transparency as the real focus and the real problem to fix, and we will continue to work with our western and national counterparts to pursue a business case to support pricing reform, but the bottom line is that the CPE choice is up to individual producers to make."

The rationale given for stopping work on the resolution is that, since first proposed, it has been rendered redundant, given a request made by CPC at the February 2020 meetings of both Canada Pork (formerly CPI) and the Canadian Meat Council (CMC), which receives its funding from Canadian packers, further processors and allied industries. CPC



Brent Moen, Chair, Alberta Pork presents on CPE during Alberta Pork's 2020 virtual AGM.

requested CMC's pork processing members pay producers \$2 per pig to recognize the increased efforts and costs producers invest into CPE validation.

CMC responded to the request by thanking producers for their work but clarified that its role is not to be "involved in price negotiations between producers and packers," and that the request did not fall within the scope of CMC's mandate.

Verified Canadian Pork earns a premium

In December 2019, CPC released its independently developed Made-in-Canada Hog Price Report, which took a comprehensive look at Canadian pork's place in global markets. A notable standout is Japan, where pork of Canadian origin commands an observable premium over and above similar products of U.S. origin.

According to the report: "The Japanese premium distributed over the whole carcass would be calculated as the sum of the value of premiums on the Japanese market for each cut over the U.S. price, distinguishing fresh and frozen cuts, weighted by the share of each cut in the carcass cut-out and by the exposure to the Japanese market... The tentative estimate results in a Japanese premium of CAD \$6.50 to \$9 per 100 kilograms. The share of the producer is yet to be determined and should reflect the producers' relative contribution to the effort resulting in that premium."

CPE is the on-farm program that creates the foundation for the Verified Canadian Pork (VCP) brand, which is used to differentiate Canadian pork products sold at the retail and food service level across Canada and abroad. For packers selling fresh or frozen product in Asia, rather than just primals sold to wholesalers, the VCP logo is an important visual identifier for consumers to distinguish pork of Canadian origin.

In July 2020, Costco Japan featured an online 'Canada Fair' to highlight its Canadian products, including pork, for its

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Presentation slide shown during a webinar hosted by Canada Pork in September for Japanese buyers, featuring VCP branding.

millions of members. The webpage prominently included images of vacuum-packed spareribs and ‘Katarosu’-style pork shoulder cuts from Olymel. In 2017, the company replaced its U.S. chilled pork with Canadian pork, resulting in a 300-tonne monthly increase in sales.

This past fall, Canada Pork and Canada Beef collaborated to present a series of webinars for Japanese, Korean, Chinese and Filipino in-market importers, distributors, purveyors and end-user customers to highlight measures taken by the Canadian red meat industry to address COVID-19. The VCP program, backed by CPE, is an important part of maintaining that confidence.

Without CPE representing quality assurance guarantees at the farm level, packers would be forced to retract their CPE-driven marketing claims and implement their own programs, which may not possess the same globally recognized significance of an independent national certification program. While some packers operate integrated production and processing businesses, the goodwill behind the VCP brand would risk losing its authoritative status among overseas buyers – potentially a major problem for the entire Canadian pork value chain.

Who owns the CPE and VCP brands?

In the latest edition of Canada Pork’s merchandising handbook, the VCP brand is described as a “unique partnership opportunity between Canadian farmers, processors and retail operators seeking to differentiate themselves in the Canadian marketplace.” In western Canada, where CPE faces its biggest challenges, more than 60 per cent of all pork produced is exported. For overseas customers, the VCP brand is perceived

as being “owned by participating farmers and pork processors dedicated to offering premium-quality Canadian pork, traditionally raised and minimally processed under some of the highest food safety standards in the world.”

At least officially, the combined CPE and VCP value proposition would seem to be shared by both producers and packers, even if the disparity between pork profits earned by packers and hog prices paid to producers does not always reflect that reality. In the same Canada Pork handbook, however, details on CPE specifics are few, except for an inclusion of the logo on the front cover, along with a description of the outgoing CQA program inside. Until CPE is universally implemented across the provinces, the combined brand may be forced to continue inching forward a bit awkwardly.

As such, the recognizable slogan, “From farm to table quality assurance,” becomes obviously murky in some ways for consumers. Even among value chain partners, uncertainty persists when it comes to who formally owns the brand and what that entitles them to.



Not only overseas, but in Canada too, VCP branding is a tool that encourages public trust in CPE program guarantees.

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Discussion has taken place at the CPC board level regarding a possible 'licensing' agreement between producers and packers, which would require packers to pay a fee to use the VCP brand on their pork products. The fee could act as a royalty to producers, based on packers' pork sales. If implemented, such an agreement could help alleviate tensions between the parties, but, like per-head compensation for CPE validation, it would not adequately address the elephant in the room: shared value.

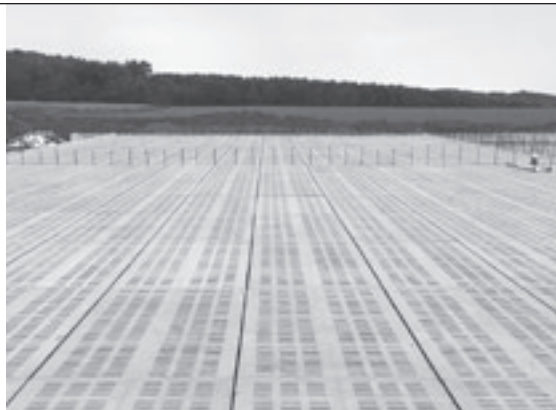
Quality assurance underscores larger concerns

Beyond CPE compensation, broader shared value discussions have taken place regarding contracts and pricing structures, and new business risk management proposals are also contributing to enhancing the producer-packer relationship.

In the past year, in western Canada, HyLife and Olymel have made beneficial changes to their contracts when it comes to recognizing producers' efforts to raise the pigs that generate high pork profits. And since last year, producers across Canada have looked at Quebec and the province's arbitrated marketing agreement between producers and packers as inspiration for what *could be*: a system that experiences market ups and downs fairly between stakeholders.

Addressing the underlying reason behind producers' request for CPE compensation is still front-and-centre. As time goes on, will more packers come on board? One could only hope, looking at the long-term sustainability of the Canadian pork industry. ■

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Feeding scraps is no solution to food waste

Andrew Heck

Waste not, want not

Food waste is a growing concern for social, financial and environmental reasons. The biggest wasters of food in the western world, by a wide margin, are grocery stores, restaurants and consumers. As food security, affordability and eco-consciousness are thrust into the spotlight, agri-food value chain stakeholders are looking for solutions to address the problem. One such outlet for retail food waste today is the distribution of human food scraps as livestock feed.



Food scraps from grocery stores, restaurants and home kitchens are sometimes fed to pigs, but it is time to stop the practice.

Across Canada, some livestock producers have been taking an interest in food redistribution initiatives by accepting packages of organic goods from grocery stores and restaurants, which includes items like fresh produce, baked goods, dairy and deli products, which may or may not include meat. Once these items are past their 'saleable' condition, they are sometimes loosely sorted, then bagged, boxed and sold or donated to be fed to animals, including livestock and pets.

Fido may have no problem munching on a discarded pork bone, but pigs on-farm certainly should not do the same. While food waste redistribution seems like an easy and efficient manner of disposing waste, concerns have been raised by some commercial hog producers and food safety officials who fear the potentially negative consequences of some farmers' misguided good intentions.

Feeding scraps compromises food safety

For consumers, personal and family well-being is utmost. In years gone by, the industry has been faced with a dark legacy of battling Trichinosis – the parasitic disease that can infect humans, spread between mammals, including pigs, that consume animal flesh or feces hosting *Trichinella* worms. When undercooked *Trichinella*-infected meat is eaten by humans, the results can be deadly.

The commercial pork industry has been successfully free of Trichinosis for more than three decades, but some skeptical consumers still hesitate to eat pork unless it is cooked beyond all recognition – if they are comfortable eating it at all. While cooking pork past 160 degrees Fahrenheit is almost completely unnecessary for food safety reasons, even today, the parasite still does exist in some populations of wild carnivores and omnivores, like coyotes and bears. Thankfully, it has not re-emerged in the commercial industry, which produces the vast majority of meat consumed in Canada. But could feeding scraps contribute to a resurgence of Trichinosis or similar parasites and viruses?

The most recent occurrence of Trichinosis in Canadian swine occurred in January 2013 in a pig raised on a non-commercial farm. The animal was slaughtered and consumed on-farm, and no product entered the food system. However, as many non-commercial pig owners raise and feed animals outdoors, cross-contamination is possible between infected wildlife and the soil where pigs walk and eat. By placing heaps of food scraps on the ground for rooting, parasites and viruses are invited to be ingested.

“Heat treatment is the best means of removing potential pathogens and increasing stability and shelf life of a product,” said Theresa Fritz, Communications Officer, Canadian Food Inspection Agency (CFIA). “Products that are dried are also less likely to harbour microbial contaminants.”

Trichinosis is perhaps the most foreboding and dangerous threat for consumers; however, other foodborne illnesses are also worth noting in the context of food scraps especially.

Almost routinely, we are made aware of recalls on fresh produce related to *E. coli* and salmonella contamination. Such recalls are a testament to the work of CFIA to keep food safe



Trichinella worms can spread to domestic pigs through contaminated soil. When domestic pigs are raised outdoors, there is greater potential for cross-contamination.

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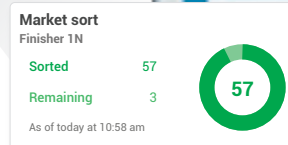


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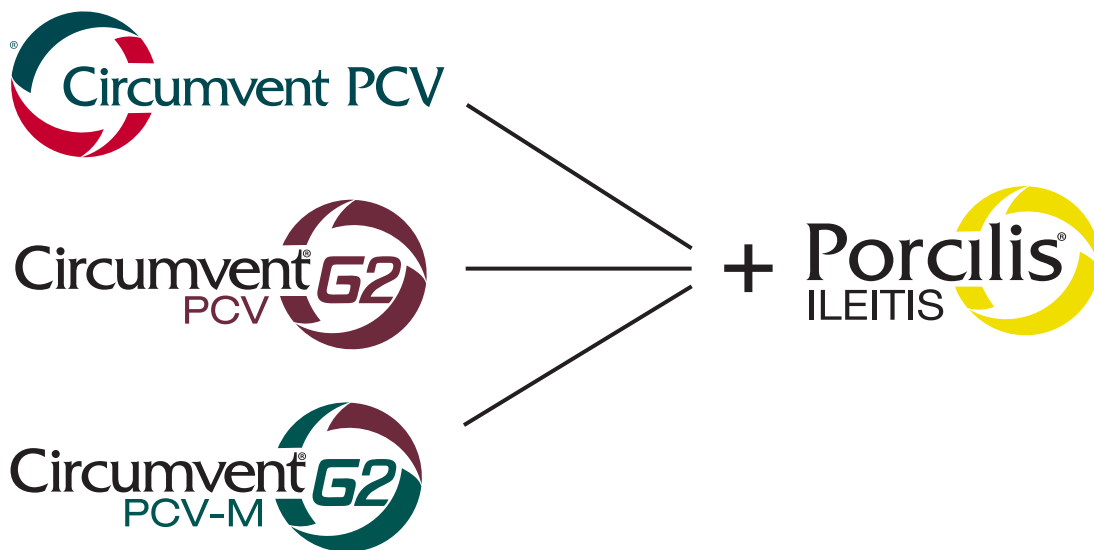
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for Canadian consumers. When these contaminated products make their way into the human food chain either through home or restaurant consumption, illness often follows for those who have eaten them. Illness can also result, similarly, when animals are fed these contaminated products.

Bacteria like *E. coli* and salmonella are destroyed when cooked to a certain temperature. However, much fresh produce is consumed raw, and scraps used by farmers to feed animals may or may not have been cooked in advance. Certainly, waste containing items like lettuce, onions and most fruits are not cooked prior to distribution from a grocery store or restaurant, and if a farmer fails to thoroughly cook these items before feeding them to animals, the cycle of contamination can be perpetuated.

Feeding scraps lacks animal health benefits

In Canada, it is illegal to feed meat to livestock. And while many plant-based and dairy products from the human food chain, known as ‘recycled food products’ (RFPs), are legal to feed, they require regulatory clearance, and regulatory clearance alone does not mean such products benefit livestock nutritionally.

“RFP guidance was developed approximately 20 years ago in response to growing requests for these waste products to be recognized as safe feed ingredients,” said Fritz. “Companies were looking for innovative ways to divert waste from landfills and address escalating landfill costs by repurposing some products that could be useful. All ingredients to be utilized as livestock feed must undergo a pre-market assessment.”

The CFIA is responsible for regulating RFPs in Canada. RFPs that are exempt from the *Feeds Act and Regulations* are still

subject to the *Health of Animals Regulations*. RFPs fed to pigs must also be registered as a feed or listed in Schedule IV or V of the *Feeds Regulations*. Commercially produced RFPs that meet acceptable standards are considered safe for livestock, but this is likely not the case with grocery and restaurant scraps.

When it comes to scraps that have skirted the approval process, it is possible at least some of the items included in an unsorted mixture are not allowed to be fed to livestock.

“RFPs from a restaurant or grocery store are likely to involve many more people and therefore more chance for error,” said Fritz. “Each person needs to be made aware of what the requirements are: no meat, keep it clean, don’t add in other types of waste and so on. There needs to be some awareness that these waste products are no longer ‘garbage’ but are becoming a feed ingredient that becomes part of the human food chain.”

Like human diets, proper pig diets include a balance of water, carbohydrates, fats, amino acids, minerals and vitamins. Complete feed rations should be considered in consultation with an animal nutritionist, who will most likely recommend a diet heavy on grains, pulses and oilseeds that provide an effective nutritional balance to enhance pigs’ average daily gain and overall physical well-being. Some human foods, such as pitted fruits, vegetables from the nightshade family, tree nuts and chocolate are even toxic for pigs.

By introducing ingredients like food scraps into pigs’ diets, farmers may be unknowingly weakening the health of their pigs, lowering the quality of their animals’ meat and potentially jeopardizing the commercial pork industry that is worth \$24 billion annually to the Canadian economy.

Feeding scraps destabilizes the pork industry

For the Canadian pork industry today, perhaps the most troubling consequence of feeding scraps is the potential for spreading African Swine Fever (ASF) – a disease that has a near-complete mortality rate for pigs it infects, prompting the culling of entire herds where infected individuals are found.

In 2018, ASF spread through domestic pig herds in China almost overnight after food scraps shipped from Russia (where ASF has been known to exist for more than a decade) were fed to pigs by farmers looking for a cheap source of pig sustenance. As a result, feeding food waste to pigs is now illegal in China.

“Producers, including small-scale producers, as well as people who keep pigs as pets, are reminded that ASF could be introduced to pig herds through contaminated food waste,”



Feeding food scraps may result in poor pig development or disease issues.

CONTINUED ON PAGE 20



Food scraps from restaurants in Russia are considered responsible for African Swine Fever's (ASF) spread to China in 2018. Could the same happen in Canada? Image © Marcus Wong

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said Fritz. “In the rare event that a food item is contaminated with even a trace amount of the virus, it would be harmless to humans but could still infect pigs.”

While ASF is the single-greatest disease risk to the pork industry today, the disease does not impact human health. Nevertheless, its presence could compromise long-standing international trade relationships, as recently observed with the discovery of the disease in Germany, whose pork exports are now banned in 14 countries worldwide. Canada exports 63 per cent of the pork produced from more than 20 million pigs slaughtered annually. Should Canada be faced with a similar situation, the country would immediately lose access to many global customers, spelling financial ruin.

The voluntary, producer-driven Canadian Quality Assurance (CQA) and Canadian Pork Excellence (CPE) programs provide guidelines for feeding pigs, which include the strict control and monitoring of diet, for pig health and meat quality. All commercial producers in Canada – those who sell pigs to federally inspected abattoirs, which sell their meat into grocery stores and international markets – are certified under these programs.

While commercial producers do not feed scraps, when non-commercial producers engage in the practice, it has the potential to damage the reputation of our products and could raise questions from important trade partners about the status of our industry.

Striking a balance between efficiency and safety

For producers and consumers alike, there is an ongoing desire to balance food system efficiency with food safety. While the goal is noble, we should sometimes step back and consider the implications of decisions such as feeding human food scraps to pigs.

While pigs *could* eat most things found in a load of scraps, it does not necessarily mean they *should*. The associated risks with feeding scraps often outweigh the benefits for the broader industry.

Before anyone considers feeding food scraps to pigs, CFIA recommends contacting the closest animal health office, located across the country, to ensure compliance with all federal feed and health regulations. ■



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Andrew Dickson leaves a legacy of leadership

Joey Dearborn

Editor's note: Joey Dearborn is the communications coordinator for Manitoba Pork. He can be contacted at jdearborn@manitobapork.com.

After 16 years at the helm of Manitoba Pork as the organization's general manager, Andrew Dickson has decided to move on. Dickson's journey in agriculture began nearly half a century ago and has shaped the Canadian pork industry in many positive ways.

Agriculture flows through Dickson's blood

Andrew Dickson's journey to Manitoba from England – with his agriculture degree from the University of Reading in hand – started in 1974 with a 'help wanted' ad soliciting farm workers to come to the province as part of the Manitoba Farm Labour Pool. Dickson set aside his goal of becoming a manager for a British bank in favour of a seasonal job on a large dairy farm near Dauphin and a notional plan to eventually move to Australia or South Africa.

"Late that fall, through the Farm Labour Pool manager, I met the regional director from Manitoba Agriculture at the time, who told me that he had two positions open for agriculture representatives – one in Ste. Rose and one in Russell," said Dickson. "I asked the farmer, who had relatives in England, and he said that he would go to Russell,

because there were more English people there!"

After a short trip back to England and a visit to the High Commissioner's office in London to get his immigration papers, where he was advised to "buy a pair of sunglasses to avoid snow blindness and keep [his] T4 slips," Dickson made the permanent move to Canada. From his first posting in Russell, he transferred to Stonewall, in 1977, as an agriculture representative. In 1981, he changed roles, becoming the province's chief of the 4-H and Youth Programs, moving again, in 1983, to Arborg as the regional director for the Interlake region, and finally to Beausejour, in 1991, with responsibility for the Interlake-Eastern region.

"I spent almost 30 years in agricultural extension, but we also had to deal with floods in the Red River Valley, with prairie fires in Ashern, flooding around Arborg and Fisher Branch, and droughts across the regions," said Dickson. "The 1980s were a hard time in agriculture in Manitoba in terms of crops. People were losing a lot of money. We organized suicide workshops at one point. It was a big adjustment period, because there was a lot of new technology, in terms of machinery, new crops and farm chemicals. In the 1990s, there was a massive expansion in the pork business with hundreds of new barns built on a scale never seen before. I was very involved in the development of the regulations dealing with local planning and environmental protection."

As the industry evolves, so does the organization

Joining Manitoba Pork in 2005, Dickson has been at the forefront of many new programs and services when it comes to food safety and disease management, labour shortages, financial challenges and resolving sometimes-thorny political issues in Manitoba related to new barn developments and ending the moratorium on expansion, in addition to dealing with the fallout of trade issues in North America and around the world.

"I came to Manitoba Pork at a time when the organization had changed from being a single-desk marketing agency into an industry sector organization," said Dickson. "The job was to represent the organization and put in programs and services that would benefit the industry as a whole.

"The board of directors asked me to move the emphasis from the public and industry relations side toward the producer services and business development side, because they wanted to be more involved in supporting hog production on-farm."

Global trade is an issue that has remained top-of-mind throughout Dickson's tenure. In the year before he took over the general manager role, the U.S. moved to enact a countervailing duty on Canadian hog imports. Canada won the subsequent trade case and was able to move forward with continued exports to a strong trading partner.



Dickson (right) joined Rick Bergmann, Chair, Canadian Pork Council (CPC) in Washington, D.C., in 2013, to advocate for the Canadian pork sector.



Dickson delivered an address at his first annual general meeting (AGM) with Manitoba Pork, in 2005.

“When I arrived, we were still in the middle of a trade case with the U.S., and that April, we got the results that we won the case,” said Dickson. “One of our first objectives was to repair relationships with our U.S. counterparts, especially in Iowa and Minnesota, because we shipped a lot of iso-weans and feeder pigs there. We initiated a new program to get down there and be visible, getting to know the Americans and their issues with us. We’ve come a long way, and it’s now part of our regular activities.”

Dickson noted that the importance of the U.S. market cannot be overstated, and that his successor needs to keep trade relationships as a top priority, as “you cannot make assumptions when it comes to building these relationships.”

Dickson instrumental in navigating industry issues

Following Canada’s successful trade challenge, the U.S. moved to enact mandatory country-of-origin labelling (mCOOL). After eight years of appeals to the World Trade Organization (WTO), Canada won the case in May 2015, and the U.S. Congress scrapped the mCOOL policy soon after. It took numerous trips to Geneva, Switzerland and Washington, D.C. not only to support the Government of Canada’s efforts to overturn mCOOL, but also to encourage U.S. politicians to change the legislation. The support of the U.S. pork industry was crucial to ultimate success.

Dickson also suggested that it is crucial to work together with producers and organizations across western Canada, because of how interlinked the industry is. He cautioned that provinces cannot go it alone when it comes to a strategy for building a stronger sector.

“For example, the federal and provincial governments have been very good over the last couple decades in terms of supporting the industry in accessing foreign labour. We are a high-turnover industry, so we have to replace labour, and our country is short on labour all the time.”



Dickson (middle) brought the country-of-origin labelling fight all the way to Europe, in 2015.

Dickson also sees labour as having a great benefit to many rural communities across the province, not just in Winnipeg. He noted that many communities want new hog operations and often approach Manitoba Pork for assistance because of the diversity new workers bring to their small towns.

A major issue close to home was the decision by the Government of Manitoba to enact a hog moratorium on new expansions and barns across the province, around the same time as Manitoba Pork was working to establish a new processing facility in Winnipeg.

“Our relationship with the government of the day was deteriorating rapidly,” said

Dickson. “The board of directors wanted to push back against the moratorium, and they wanted to tell the government that this is very bad for rural Manitoba – it’s very bad for our industry, it’s bad for the province and there’s no science behind this. We decided to call the government out on it.”

In 2006, as part of a Clean Environment Commission review, barn expansions were paused. In 2008, the government introduced *Bill 17*, which effectively banned barns in all or parts of 35 municipalities. In 2011, the provincial government went further, essentially banning new hog barns across the province under the guise of protecting Lake Winnipeg.

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"It's hard to imagine that we had producers picketing on the front steps of the Legislature," said Dickson. "It was unheard of in Manitoba – senior businessmen picketing like that."

Dickson makes his mark on the future

After the 2016 Manitoba provincial election, the new provincial government ended the hog barn moratorium and enacted new changes to municipal planning, leaving municipalities in charge of many of the governing regulations.

"The new government brought in new rules about how barns would get approved in the province, continuing to protect the environment but dropping the moratorium."

Going forward, Dickson indicated that bringing new producers into hog farming is paramount, and that there is a real opportunity in having crop producers invest in the industry and use manure to offset the use of synthetic fertilizers.

In terms of Dickson's advice to his successor, it boils down to the team you have around you.

"As a manager, you have to recruit and develop your staff, and give them a lead

on issues. You have to be creative and innovative in your programming. You have to work with funding agencies like the provincial and federal governments on projects that will be of significant benefit to agriculture as a whole. You also really have to be focused on your relationship with governments and the public, because they have to be able to trust us to do the right thing in raising pigs and producing pork. We have to address their concerns while building the business."

At a trade show in Iowa, the former head of the Iowa Pork Producers Association reminded Dickson that there is "never a dull day in the hog industry." Dickson has seen his fair share of those days in agriculture, but he remains hopeful and optimistic about the sector, as he begins another chapter in his life.

"Pork is the most popular meat choice in the world, and Manitoba is ideally suited to the production of high-quality pork products," said Dickson. "There is plenty of room to double the industry and create good jobs and wealth for the province. Smart investments and confidence in the future are the keys to success. I am proud to be a Canadian. Canada really is the best country in the world, but we can't rest on past success. We have to work at it all the time." ■



Dickson (right) spoke with U.S. counterparts at the Iowa Pork Congress, in 2019, reinforcing the cross-border relationship.



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Porc Show prevails despite global crisis

Andrew Heck

The seventh, annual Porc Show was presented in digital format on Nov. 25 and Dec. 3 & 9, 2020, featuring presentations, speeches and an introduction to the Quebec agri-food industry. Guests were invited to network with conference partners, including the Canadian Hog Journal, by visiting an online exhibitor area.

For the past six years, Canada's largest pork conference has been hosted in-person at the Quebec City Convention Centre, just across from the province's National Assembly (provincial legislature), down the road from *La Citadelle* and the 400-year-old *Petit Champlain* district – typically an attractive location for the conference's more than 1,000 guests.

"We are very pleased with the outcome of this year's format," said Sébastien Lacroix, CEO, Quebec Association of Animal and Cereal Feed Industries (AQINAC), one of the Porc Show's host organizations. "While we would have loved to welcome guests to our province, the global pan-

demic has prompted us to adapt, which parallels the work being done in our industry to innovate and overcome barriers to success."

Each day of the conference was opened by Vincent Cloutier, Senior Advisor, National Bank. Special dignitaries, including Andre Lamontagne, Minister, Quebec Agriculture, Fisheries and Food (MAPAQ); David Duval, President, *Éleveurs de porcs du Québec* (Quebec Pork); and Marie-Claude Bibeau, Minister, Agriculture and Agri-Food Canada (AAFC) also delivered remarks.

"The pork sector has been courageous and resilient through COVID-19, soldiering on to maintain the food supply and stimulate the Canadian economy," said Bibeau. "We must maintain solidarity with processors as they continue to operate at a reduced capacity, and we must support producers as they look for alternate solutions to sell their animals."

Presentation topics for all three days ranged from the impacts of human and swine disease on the global pork trade,

pork industry issues management and animal handling. With more than a dozen industry experts on-hand, guests were treated to a diverse and comprehensive array of subject matter.

COVID-19, ASF and global pork trade

In the past two and a half years, African Swine Fever (ASF) has largely shaped pork demand and sourcing, while in the past 10 months, COVID-19 has impacted the industry in more localized ways. Complications related to ASF and COVID have promoted differing industry responses, tailored to the situations faced regionally. Experts joined the Porc Show this year from Canada, the U.S., the U.K., China, Brazil, Spain and Germany – all keen to explore their national industries' activities in response to market challenges.

Among all presenters on the topic of trade, not one failed to mention China's impact on production and profits. For Gary Stoner, Vice Chair, C.P. Group China – a global top-three producer of pork, poultry and other commodities in southeast Asia – China's ASF recovery has been swift, from banning human food scraps as feed to the construction of multi-storey 'pig condominiums' for efficient land use. The domestic price of pork for the country's consumers varies but remains inflated, as no combination of domestic production and imports has yet been able to fill the growing demand.

In Germany, opportunities in Asia quickly vanished following the discovery of ASF in the country's wild boar population in September 2020. Albert Hortmann-Scholten, Market Analyst, Chamber of Agriculture, Lower Saxony indicated that German pork is currently banned in 14 countries globally, as a result. Taken together with processing shutdowns related to COVID-19, pig prices in 2020 have dropped by nearly 15 per cent for German producers. In Germany, 80 per cent of all pork is processed by just 10 packers, leading the European Union (E.U.) in pork production volume



Quebec City's Rue des Remparts military installment successfully defended the settlement in 1775 against the invading American Revolutionary Army. Like those early Canadians, the Porc Show's organizers have strategically managed challenges to modify the Porc Show in 2020, on account of COVID-19.

CONTINUED ON PAGE 24

and trailing only Spain in pig production volume.

In contrast to the German industry's more recent woes, in Spain, an unusual phenomenon is taking place compared to most other pork-producing countries around the world, according to Miguel Higuera, Executive Director, Spanish National Association of Swine Producers (ANPROGAPOR): the number of farms is increasing. Starting in 2014, the Spanish government capped the size of all livestock farms, but a desire to continue expanding the industry has driven growth. Sixty-five per cent of all Spanish hog farms are integrated with processors, with the remaining 35 per cent equally split between producer cooperatives and independent operations. Spain first started exporting pork only in 1995, and in the quarter-century since then, has actually surpassed Germany when it comes to breeding pigs, exemplifying just how different the conditions are from one E.U. nation-state to the next.

Meanwhile in North America, where ASF has spared the industry so far, COVID restrictions have disrupted the supply chain. According to Steven Weiss,

President, NutriQuest of Iowa, plant shutdowns encouraged curtailment of U.S. pig production in the second quarter of the year, but by the fourth quarter, production had returned to near pre-COVID levels. The production response this spring included slowing down diets and euthanizing millions of pigs – an unfortunate yet effective course of action. John Ross, President, Canadian Pork Council (CPC) pointed to a similar albeit much smaller-scale COVID response in Canada, which has included reducing breeding and, when necessary, shipping eastern Canadian hogs to western Canadian plants as a way to back-fill western demand when eastern plants were faced with interruptions.

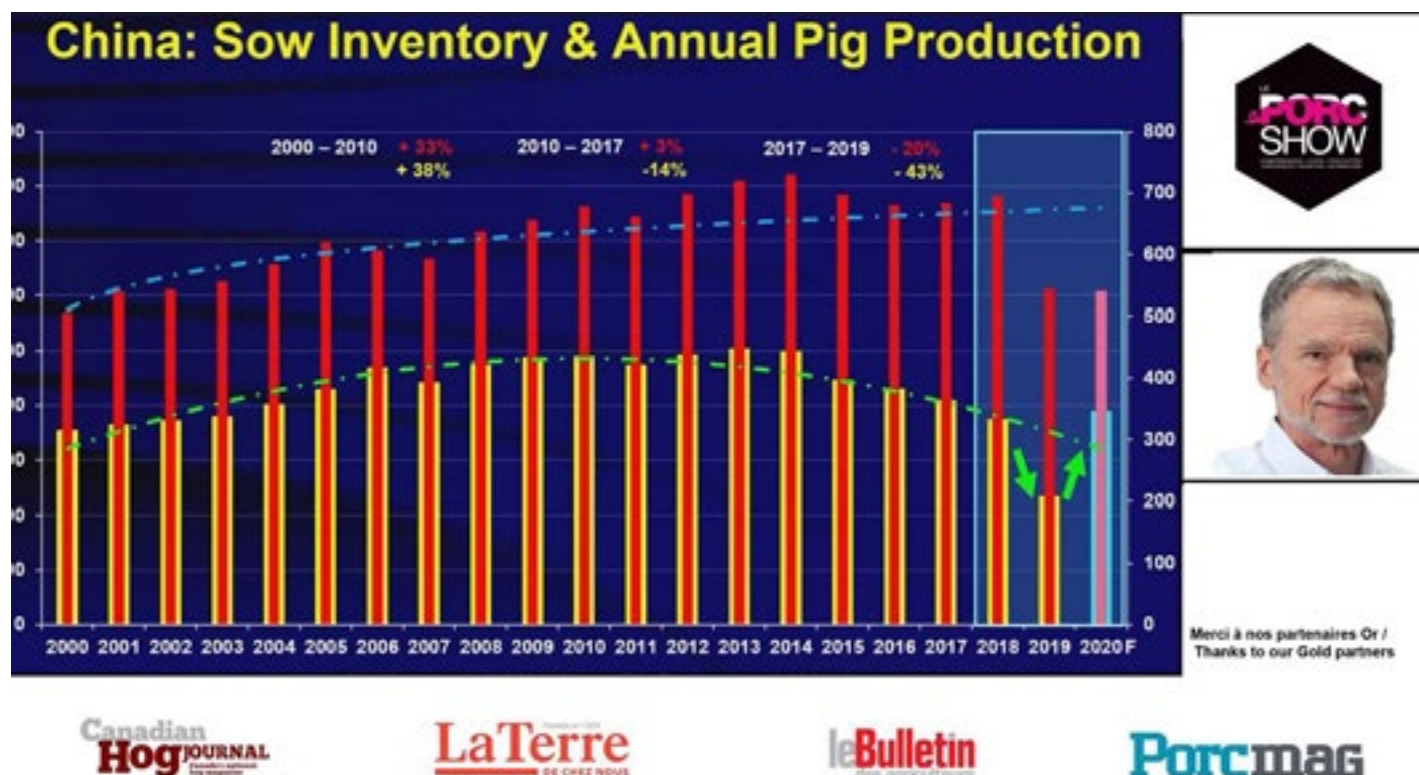
No matter where in the world pigs and pork are found, biosecurity remains top-of-mind. Proper protocols remain important as ever – from farms and trucks to processing facilities and airports, where the potential for disease transmission is ever-present. Martin Bonneau of Demeter Veterinary Services, based in Lévis, Quebec, spoke about a new national partnership in Australia that aims to address biosecurity challenges across all livestock sectors, particularly focusing on

international passenger travel and cargo shipping. The partnership is backed by a decade-long plan that is designed to buff up the country's biosecurity significantly approaching 2030. Like Australia, the Canada Border Services Agency (CBSA) has identified flights from ASF-positive countries as having heightened risk.

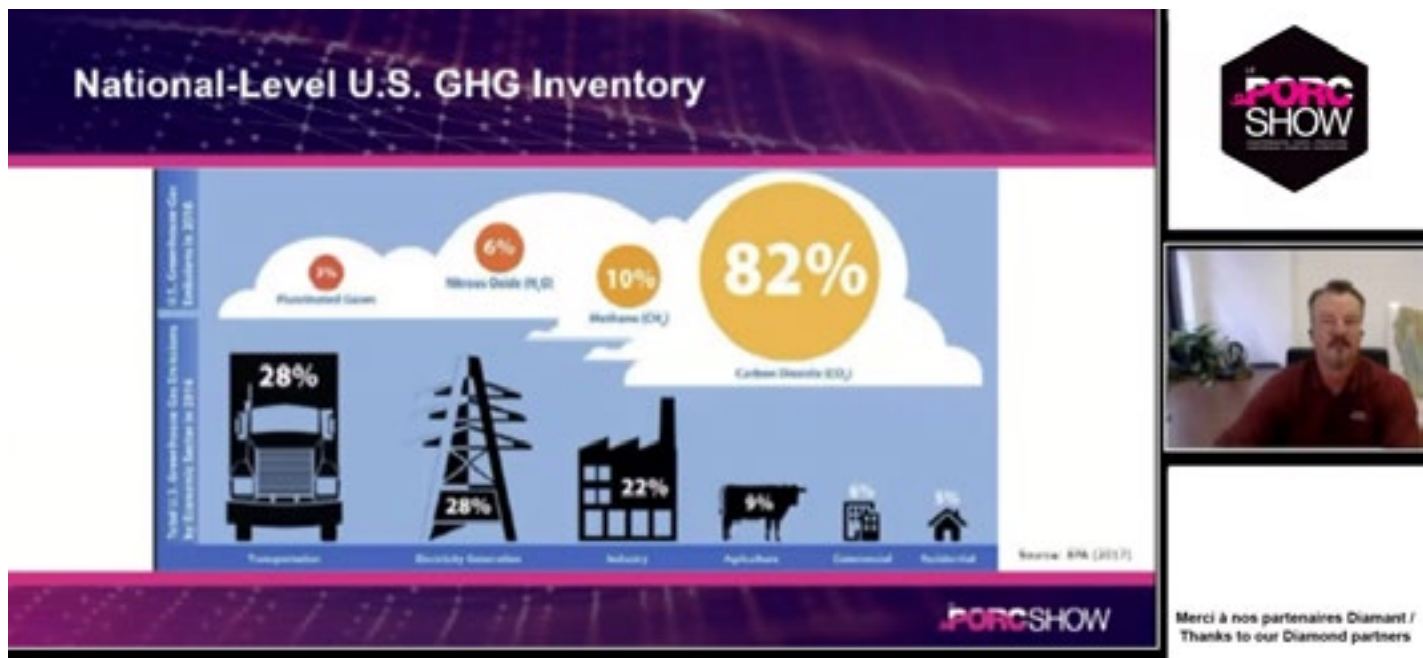
Pork industry issues management

When it comes to climate change, Frank Mitloehner, Air Quality Extension Specialist, University of California believes the pork sector has many opportunities to become better by continuing to reduce methane output through manure management strategies, such as generating renewable products like biogas.

Incentivizing change and sharing knowledge, rather than punishing behaviour, is key to transforming the industry positively. While pig production has a much smaller carbon footprint compared to ruminants like cattle and sheep, feeding a growing global population means raising more livestock. Despite this, Mitloehner points out that comparing greenhouse gases directly – carbon dioxide, nitrous oxide and



ASF hammered China's pig herd in 2018 and 2019, but in 2020, a rapid rebound has put the country on a path to greater self-sufficiency.



Frank Mitloehner compares greenhouse gas emission types and sources in the U.S. Agriculture altogether contributes only nine per cent of the total.

methane – is like comparing apples and oranges, which is where critics of animal agriculture fail when it comes to arguing the sector's negative climate impacts.

Mitloehner also suggests that food waste, not livestock production, is the true menace that the agriculture industry as a whole needs to address, as 40 per cent of all food produced globally – or one out of every three calories – is never consumed by either humans or animals. He points out that food waste in the developing world occurs more often at the farm level, since barriers to harvesting crops and transporting commodities are more common than in North America, where much more of the waste occurs at the level of retail and home consumption.

If everyone on Earth switched from an omnivorous diet to a vegan diet, would that save the planet? Mitloehner believes that such a dramatic hypothetical change would result in an overall greenhouse gas reduction of less than one per cent. Despite that reality, vegans and animal activists continue to push this narrative.

And while Canada is no stranger to the harmful actions of animal activists, in Europe, highly organized networks have infiltrated the industry for even longer and with greater influence. Groups like L214 Ethics & Animals recruit mostly

young and impressionable individuals through social media as foot soldiers for threatening pork producers and processors, while instilling fear in public figures and politicians who sympathize with the livestock industry.

According to Jacques Crolais of Brittany, France's Meat Producers Union, the European anti-meat movement is led primarily by urban millennials who use online fundraising to support campaigns of misinformation, along with criminal trespassing and espionage.

Whether by distorting the pork sector's impact on the environment or by targeting meat production and consumption itself, critics continue to take pot shots at the industry, which has been forced over time to cushion such reputational blows.

Animal handling, health and welfare

While the Porc Show has an undeniably business-oriented character, no pork conference would be complete without a little testimony from those who study pigs the hardest: veterinarians.

Jean Brochu, a swine vet with Sollio Agriculture, provided an overview of behavioural problems that emerge with uterine and rectal prolapses in sows. The condition often goes unaddressed with-

out constant monitoring, and it has a mortality rate of anywhere between less than one per cent and upwards of 10 per cent. It is difficult to pinpoint commonalities between herds, as few concrete conclusions have been drawn to connect indicators from one farm to the next.

Georg Dusel, Professor of Animal Nutrition and Health, University of Applied Sciences in Bingen, Germany spoke to the role of fibre in sow management. He pointed to the fact that not all carbohydrate sources are created equal when it comes to digestible fibre, and sows at different stages of gestation and farrowing have unique dietary needs, even as it relates to using crates versus group housing.

François Cardinal with Triple V Emergency Veterinary Services of Vale, Quebec presented on the challenges and eradication strategies related to Porcine Reproductive and Respiratory Syndrome (PRRS). On an average litter of piglets, the cost of managing PRRS can be anywhere between \$50 and \$60. The most effective strategy, according to Cardinal, is a herd closure until negative tests come back in four consecutive litters, lasting for a period of six to nine months, at which point the herd can be carefully reopened with close attention paid to biosecurity protocols. For farrow-to-finish opera-

CONTINUED ON PAGE 26

tions, increasing the marketed weight of hogs can also create better pig flow and optimize productivity while managing the disease.

Meeting disappointment with triumph

Over the noon hour during the third and final day of the Porc Show, guests were treated to a culinary student competition, a tribute to Quebec's agri-food retailers and an introduction to The Chef's Box meal delivery kits with renowned Montreal-based chef Jérôme Ferrer.

After lunch, Alexandre Cusson, General Manager, Quebec Pork and Richard Davies, Executive Vice President, Sales & Marketing, Olymel took part in a brief discussion on industry issues, while Christian Bourque, Executive Vice President, Léger Marketing presented on food consumer trends.

Organizers are cautiously optimistic that next year's event can once again be hosted in-person, but if not, the lessons learned in 2020 will be invaluable to delivering an even higher-quality experience in 2021.

While the Porc Show normally brings the world to Quebec, this year's edition brought Quebec and Canada to the world.

Extraordinary times call for extraordinary solutions, and while the virtual format is not likely the preference for most participants, it does offer certain benefits on the side of cost and accessibility. While there is no perfect substitute for the rich professional and cultural experience afforded by the Porc Show's legendary location, the event has prevailed despite the COVID-19 crisis. ■

Pork Promotion Agency given green light

In early November, the Canadian Pork Council (CPC) welcomed the establishment of the Canadian Pork Promotion and Research Agency (PRA) by the Government of Canada – a project years in the making.

"The PRA will be an important vehicle for producers – it will help facilitate even greater collaboration across the value chain through increased research and promotion activities," said Rick Bergmann, Chair, CPC. "In the long run, it will result in improving the growth and competitiveness of the sector."

The discussion to establish the agency was initiated by Jurgen Preugschas, former Chair, CPC with a small group

of producers. The effort was picked up and actioned by his successor, Jean-Guy Vincent, Director, CPC and carried to this point by Bergmann.

"Canadian pork farmers will greatly benefit from the PRA, which will help to promote the marketing and production of pork, develop new markets for producers and support research activities," said Marie-Claude Bibeau, Minister, Agriculture and Agri-Food Canada (AAFC). "We will continue to work closely with the industry to ensure our hard-working producers have the tools they need to thrive in the global marketplace."

The producer-funded PRA will also receive funds through the collection of a levy on the imports of live pigs and pork meat. It is estimated that the fully functioning agency will provide an additional \$2 million for research and promotion.

Ag ministers discuss ASF, BRM, labour

In late November, the agriculture ministers from all Canadian provinces and territories joined Marie-Claude Bibeau, Minister, Agriculture and Agri-Food Canada (AAFC), for an annual discussion on topics of interest. Agenda items included African Swine Fever (ASF) preparedness, COVID-19 labour issues and potential changes to AgriStability.

During the first day of meeting, the ministers acknowledged the threat ASF poses to the Canadian pork supply chain, agreeing that further action is required to prevent and prepare for ASF, including ongoing support for the government-industry Pan-Canadian ASF Action Plan. High-level ASF preparedness was covered in the Fall 2020 edition of the Canadian Hog Journal: "Keeping African Swine Fever out of Canada."

In addition to ASF, the first day of meeting touched on the Government of Canada's continued support for farm labour during COVID-19. In April 2020, potential stoppages under the Temporary Foreign Worker Program (TFWP) could have jeopardized livestock and crop sectors across Canada, were it not for an exemption to the international travel ban



The scaled-down physical hub for this year's Porc Show, where behind-the-scenes technicians were the unsung heroes of production.



Minister Bibeau met with CPC staff and directors, in 2019, to discuss the organization's legislative priorities.

and financial support to cover costs for TFWs during the mandatory 14-day isolation period for individuals arriving in Canada. At the beginning of November, an extension was made to the \$50-million Mandatory Isolation Support for the TFWP, designed to help producers, processors and other agri-food businesses comply with protocols under the federal *Quarantine Act*. The employer support includes up to \$1,500 per worker to cover costs related to wages, food, benefits, transportation, housing and more.

During the second day of meeting, Minister Bibeau suggested AgriStability could be improved, to ensure the program is simple, predictable and timely for producers. In 2013, a 'reference margin limit' was introduced to AgriStability, capping the payments a farmer receives and complicating the program. As a starting point, the Government of Canada is looking to remove the limit and make further enhancements that would apply retroactively, including an increase of the AgriStability compensation rate from 70 to 80 per cent, which would increase the overall payout levels by 50 per cent.

Olymel worker dies after positive COVID test

A 65-year-old worker from Olymel's Vallée-Jonction plant, southeast of Quebec City, died in late October just two days after testing positive for COVID-19. At least 80 of the plant's 1,200 employees have tested positive, but this remains the first death of a Canadian pork processing worker timed with a COVID workplace cluster.

Following the Vallée-Jonction outbreak, the company's Princeville plant, east of Trois-Rivières, Quebec, also experienced cases among more than 50 of its nearly 400 employees. Halfway between Edmonton and Calgary, at the company's facility in Red Deer, Alberta, all 1,850 employees were tested in late November; as of mid-December, nearly 40 positive cases had been discovered there.

The company's Yamachiche plant, west of Trois-Rivières, experienced a two-week closure in March following nine positive COVID cases. Since that time, in cooperation with public health officials, Olymel

has made efforts to better protect workers by implementing new protective equipment requirements, creating physical distance with plexiglass barriers, staggering shifts and regularly sanitizing common areas.

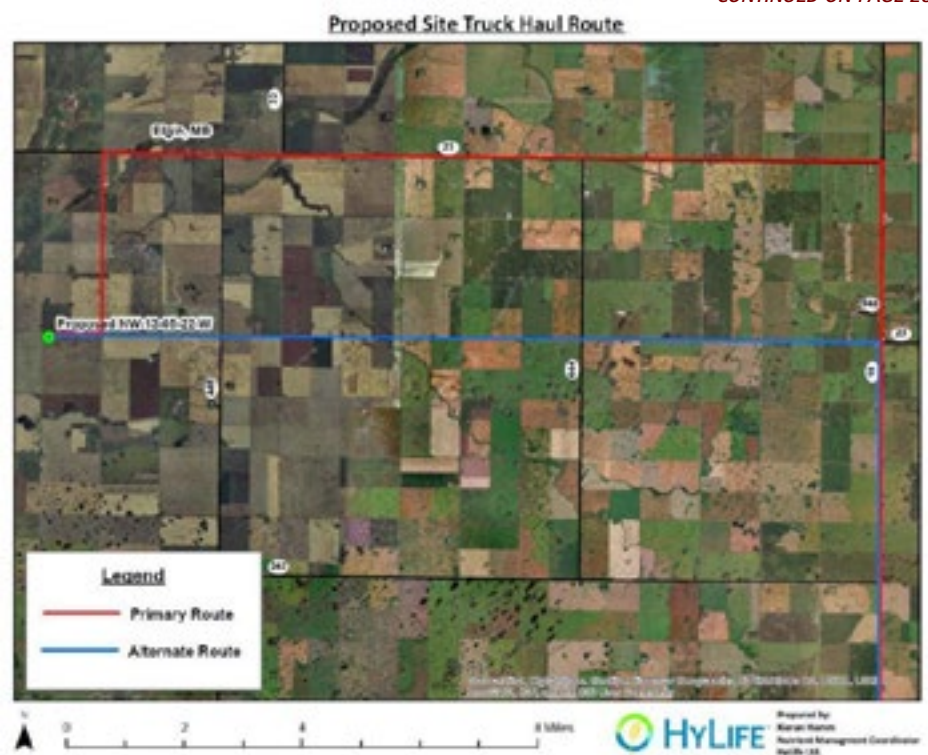
HyLife presence grows with added barn capacity

In May, Manitoba-based HyLife announced plans to build a 24,000-head nursery barn site near the town of Elgin, southwest of Brandon. The project was initially rejected by the Municipality of Grassland, but a resubmitted application was approved in late October.

The nursery barn site adds to HyLife's growing list of assets, including the acquisition of a 75 per cent equity interest in Prime Pork, a recently renovated facility that produces, processes and sells pork products out of Windom, Minnesota. In late October, it was announced that Prime Pork would join the HyLife brand. The rebrand is being undertaken to unify the company and promote its core values.

Prime Pork raises 300,000 feeder hogs to market weight annually and sources the

CONTINUED ON PAGE 28



HyLife Glosco's Nursery (TRC 12-071)

HyLife's proposed truck haul route for its planned nursery barn site in southwest Manitoba, as submitted with the company's application to the Municipality of Grassland.

remainder from third-party suppliers. The plant currently processes one million hogs annually, on a single shift. HyLife's main slaughter plant in Neepawa, Manitoba, northeast of Brandon, processes 3.2 million pigs annually.

Packers, grocers continue to report profits

In the third quarter of 2020, Maple Leaf Foods reported an increase in revenue from nearly \$996 million in 2019 to \$1.1 billion in the same quarter for 2020 – growing more than six per cent thanks to strong performance in the company's meat and plant protein divisions.

"Our operational resiliency, strong brands and the success of our sustainable meat strategy delivered excellent results," said Michael McCain, President & CEO, Maple Leaf Foods. "We are incredibly excited about the long-term prospects of this business. We have built significant growth engines at Maple Leaf Foods."

The growth was attributed primarily to increased demand in North American retail channels, exports to Asian markets and the positive impact of foreign currency exchange rates. Year-to-date sales for 2020 were close to \$3.2 billion compared to \$2.9 billion at the same point in 2019.

During a Bloomberg Live interview in early December, McCain commented on the company's plant-based endeavours: "It certainly is linked to the thesis of sustainability in the sense that the world needs a more balanced profile in protein consumption... There's also a tremendous commercial opportunity. We started our investment process five years ago, and we're on an incredible journey."

On the grocery side, third-quarter 2020 sales for Loblaw – parent company of Real Canadian Superstore, Independent Grocers, No Frills, Zehrs, Shoppers Drug Mart and other national retailers – were up by nearly 10 per cent over third-quarter 2019: from \$14.7 billion to \$15.7

billion. While the company did face \$85 million in expenses related to COVID-19, e-commerce sales improved, as did the company's share value.

"Banner-by-banner, our food stores are well positioned to meet the challenges of the pandemic, while we continue to provide customers with the everyday value that has always been important to them," said Sarah Davis, President, Loblaw.

As provinces across Canada introduced additional lockdown measures in late November, pandemic-inspired 'hero pay' for employees of major grocery chains, which made an appearance in March, did not return on a large scale. Sobeys and Safeway parent company Empire did, however, re-introduce a 'lockdown bonus' for employees at its Toronto, Peel Region (Ontario) and Winnipeg stores.

Retailer fees prompt higher consumer prices

In late October, Loblaw introduced an increase on fees charged to suppliers, citing the need to invest more heavily in e-commerce. The fees are designed to breed competition and exclusivity when it comes to stocking products at the retail level.

As a result of the decision, starting in January 2021, distribution centre delivery

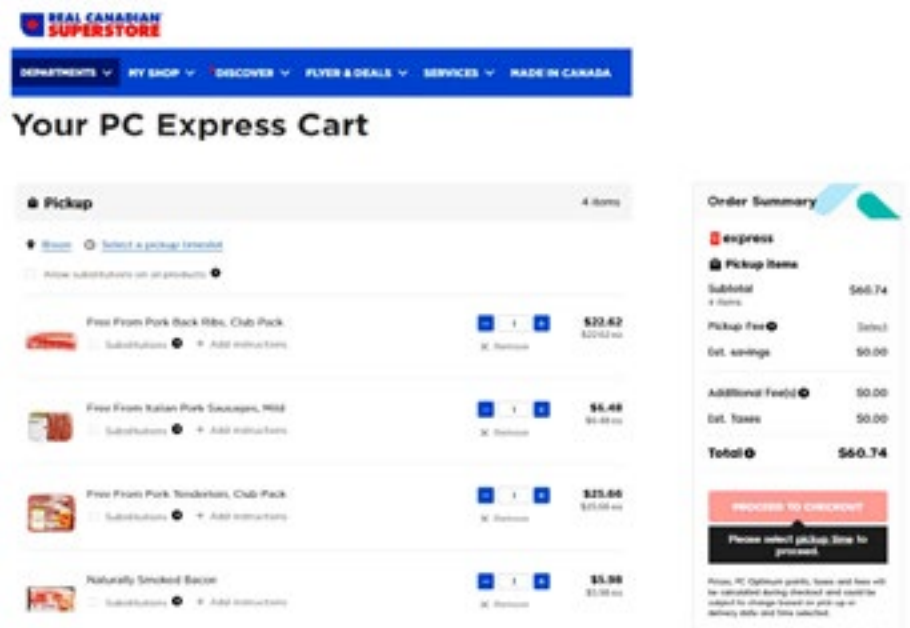
charges will increase from 0.85 to 0.97 per cent, while direct-to-store delivery charges will increase from 0.26 to 0.3 per cent. For many small- and medium-sized suppliers, the new policy further narrows their relatively small operational margins.

"I am afraid this is getting really crazy," said Michael Graydon, CEO, Food, Health & Consumer Products of Canada (FHCP). "The lack of empathy from Loblaw and these demands are again proof that we need a Code of Conduct in Canada to protect Canadian manufacturing."

In August, Walmart and United Grocers – representing stores such as Longo's, Metro, Save-On-Foods and Federated Co-op – imposed similar fees, in a decision that was roundly criticized by the Canadian Federation of Agriculture (CFA), FHCP and other organizations.

During the annual federal-provincial-territorial agriculture ministers meeting in late November, the ministers discussed the concerns of processors, producers and independent grocers regarding increased retail fees on suppliers and the need for balance in the supplier-retailer relationship, while also ensuring that Canadians continue to have access to a reliable food supply at affordable prices.

In early December, Canada's Food Price Report for 2021 was released, forecasting



'PC Express' is the online ordering platform for Real Canadian Superstore. Since the start of COVID, the service has seen usage increase, which is one reason for new higher fees.

a food price increase of three to five per cent over 2020. The average Canadian family could pay nearly \$700 more for food this year – the highest annual increase ever predicted by the report. Meat prices are projected to rise as much as 6.5 per cent.

Ontario processors, producers receive funding

The Governments of Canada and Ontario are committing up to \$11.5 million through the Canadian Agricultural Partnership (CAP) for two new programs, one of which will assist meat processors on projects to rapidly increase processing capacity, and one that will help farmers adjust to current market challenges.

The Meat Processors Capacity Improvement Initiative is a \$4-million program that will provide up to \$150,000 per project for improvements to product handling and processing equipment. Applications opened in early December 2020, and eligible projects must be completed with equipment delivered by March 2021.

“We applaud the federal and provincial governments for this timely funding for our sector,” said Carol Goriup, President, Meat & Poultry Ontario. “This support will be invaluable with helping our sector manage the increased demand for local meat and poultry products we have experienced throughout the pandemic.”

The processor funding program comes four days after the announcement of a new application intake under CAP, during the Ontario Federation of Agriculture’s (OFA) annual general meeting (AGM). An investment of \$7.5 million will support farmers in making enhancements to their operations.

Examples of projects that can be funded through this program include developing a product that will open new sales markets for a farm business, investing in new technology and equipment to enhance labour productivity and improving food safety systems to meet international certification standards.

China blames foreign pork for COVID

Starting in early November, Chinese customs official began widespread testing of imported goods for traces of COVID-19, which, to this point, has been almost universally regarded as having origins in China’s Wuhan province, near a research facility that studies bat coronaviruses.

Not long after testing started, the finger of blame was pointed at contaminated packaging from overseas after a dock worker in Tianjin – a major port city – tested positive for COVID. Consequently, several categories of food products from all over the world, including pig heads from North America, were identified as being virus carriers.

Scientists outside China, however, became highly skeptical almost immedi-

ately, as no known virus transmission routes have involved packaging.

“People should not fear food, food packaging or delivery of food,” said Mike Ryan, Executive Director, Health Emergencies Programme, World Health Organization (WHO). “There is no evidence the food chain is participating in transmission of this virus.”

During a World Trade Organization (WTO) meeting, a Canadian official characterized China’s COVID testing as an “unjustified trade restriction,” calling for an end to the practice. Since then, China has increased COVID screening on imports.

Canada-China trade grows as tensions persist

In early December 2020, the U.S. Department of Justice took a concerted approach to resolving the legal case against Meng Wanzhou, Chief Financial Officer (CFO), Huawei Technologies: a Chinese telecommunications and electronics company. In December 2018, Meng was arrested by the Canada Border Services Agency (CBSA) on a provisional U.S. extradition request while attempting to enter Canada at the Vancouver International Airport. Her arrest warrant was issued related to high-level fraud charges in New York state.

Between late June and early November 2019, Canadian pork imports were banned in China after a shipment of product was supposedly found to contain ractopamine, a feed additive banned in China. Commercial pork production in Canada is ractopamine-free, as certified by the Canadian Food Inspection Agency (CFIA). Many suspect the decision to ban Canadian pork on questionable grounds results from diplomatic tensions surrounding Meng’s arrest.

Despite the controversy, Canada-China trade across all commodities appears to be thriving during COVID-19, with exports to China increasing by nearly 10 per cent between March and September 2020 over the same period in 2019. This growth occurred as most exports to trade partners declined.

CONTINUED ON PAGE 30



Ontario's meat producers and processors have received a handsome federal-provincial funding boost.

Meng continues to live in the Vancouver area under house arrest and most recently attended judicial hearings in mid-November.

ASF status fluctuates in Europe

In late October, Russia detected traces of African Swine Fever (ASF) in finished meat products that were consumed domestically in several regions of the country. While ASF poses no food safety risk for humans, the discovery suggests a lack of biosecurity controls in the Russian pork industry, which continues to experience ASF outbreaks primarily in wild boar and on small-scale farms. In mid-December, ASF was discovered at a commercial farm, where 17,000 pigs were euthanized, as a result. However, in Russia, commercial farms account for only roughly five per cent of total production. And despite ASF scares, Russian exports in 2020 were reported to be up by 80 per cent over 2019 levels, with dominant markets being Vietnam, Hong Kong, Ukraine, Kazakhstan and Belarus.

In nearby Bulgaria, ASF eliminated more than one-quarter of all pig production and three-quarters of all pig farms in 2019, as a result of mitigation efforts undertaken by the Bulgarian government. At that point, most small-scale production had been halted, but the country has reported a rebound in 2020. Pork is Bulgaria's second-most-produced meat and most-consumed.

In Germany, from the discovery of the country's first ASF case in wild boar in September, to today, the total confirmed case count has peaked at more than 300 carcasses found primarily along the country's northeastern border with Poland. While several Asian countries immediately banned German pork, the industry has been working to broker solutions that see the continued movement of product to foreign markets.

In neighbouring Belgium, a milestone

re-entry for the country's pork into the Philippines was announced in late October, as Belgium regained ASF-free status following its last reported case in wild boar in August 2019, after more than 800 cases were discovered starting in September 2018. Belgium acted quickly as the first country in western Europe with ASF by implementing strict control measures on its infected zone near Luxembourg. So far in Belgium, as in Germany, ASF has not been detected in any domestic pig herds.

Animal health, farm security legislation advances

A private member's bill to amend the federal *Health of Animals Act* was tabled in late November in the House of Commons by John Barlow, Member of Parliament for Foothills (Alberta), and former Shadow Minister for Agriculture and Agri-Food Canada (AAFC), with the intention of further recognizing the need for better protection for farm animals against biosecurity risks associated with farm trespassing and transport interference.

"If we had an opportunity to walk back in time and do a better job of preparing for the COVID-19 pandemic, I know we would do that. We have an opportunity with this amendment, which will protect the health of animals on-farm, but also protect the mental health of our farmers and farm families," said Barlow. "We

cannot make the same mistake we have made in the past. We just simply can't afford an animal-borne disease or virus outbreak on farms or within processing plants."

The Canadian Hog Journal covered the development of farm anti-trespassing legislation in the Summer 2020 edition article, "Governments work to curb farm trespassing," and transport anti-interference legislation in the Fall 2020 edition article, "Pro-trucker rallies steer toward change."

In Ontario, the *Security from Trespass and Protecting Food Safety Act* came into full force in early December, following a public consultation period in October, which received 850 responses. The act came into partial force in early September, after being introduced in provincial legislature in early June.

Restaurant closures burn business owners

As the number of COVID-19 cases in Ontario began to spike in early October, the provincial government ordered the closure of restaurants and bars in the City of Ottawa, York region and Peel region, in an attempt to halt the spread. In late October, data collected on the origins of Ontario's COVID cases showed that restaurants and bars accounted for only two per cent of all cases, while retail and grocery businesses accounted for one per cent.



Conservative former ag critic John Barlow has proposed amendments to the Health of Animals Act.



Adam Skelly, owner of Adamson Barbecue in Etobicoke, Ontario – a Toronto suburb – made headlines when he was arrested for defying the province's orders to shut down in-person restaurant dining.

"The recommendation was made at the time because of the rising case numbers and the extensive community spread," said David Williams, Ontario Chief Medical Officer. "We didn't particularly pick one site or another; we were picking those settings where it's indoors, where people are unable to mask for long periods of time."

In response to the data, Lauren van den Berg, Executive Vice President, Government Relations, Restaurants Canada, took to social media to express her disappointment: "With Canadian restaurants investing \$750 million in new safety measures, staff training and personal protective equipment, it's not surprising that the real transmission data is so low for our sector. What's surprising is that we were shut down anyway."

In Quebec, all restaurants were also ordered to close between October 2020 and mid-January 2021. The decision impacted more than 25,000 businesses in Montreal alone, which has the highest number of restaurants per capita in North America outside of New York City.

At the same time of Quebec's extension, the Manitoba government announced the closure of restaurants and bars in the Winnipeg area. In Alberta, where record daily case counts were recorded for nearly two straight weeks, restaurants and bars remained open with gathering limits in place until late November, when dine-in service was no longer permitted. PEI ended dine-in service in early December, while restaurant capacity restrictions continue in practically all other parts of Canada.

CTV hit piece paints incomplete picture

In late November, CTV broadcasted an episode of its W5 program titled, "Farm Secrets," featuring alleged animal abuse that was captured on video at a hog farm east of London, Ontario. The perpetrator who submitted the content to CTV anonymously was hired by the farm as a technician and covertly surveilled the barn. The worker was commissioned by an animal activist organization to create the video footage, which was used to drum up the media scare.

"This is not investigative journalism," wrote Ontario Pork, in an emailed statement. "Journalists have a professional obligation to report honestly and objectively, even when covering difficult subjects. This is about individuals gaining access to animals under false pretenses, failing to live up to their responsibilities of care, then manipulating video clips to evoke an emotional response in support of their cause."

Ontario Pork confirms that most of the allegations presented in the broadcast were misrepresentations or operational issues already being addressed through the ongoing inspection and certification process. In at least one case, the undercover activist caused pigs in his care to become agitated, then stood by and secretly recorded as his co-worker struggled to deal with the aftermath alone.

Where room for improvement on the farm does exist, the farm owner has

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committed to working with Ontario Pork, the herd veterinarian and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) to ensure all animal handling protocols adhere to acceptable welfare standards.

Whole Foods promotes mock bacon

In late November, Whole Foods announced that it would begin carrying Hooray Foods' bacon substitute – made from coconut oil, rice flour, tapioca starch and other ingredients – at 300 U.S. locations. Hooray Foods was founded in San Francisco by Sri Artham, former Vice President, Consumer Packaged Goods, Fair Trade USA.

"People who love bacon, love Hooray," said Artham. "I came at it from a totally different direction and developed it with a novel way to encapsulate fat in a substrate."

Part of the start-up's goal is to "[save] animals from the food system, one pig at a time." The company plans to "partner with non-profit animal farms and sanctuaries to help provide funds toward pigs rescued from production and abuse."

Hooray has ambitions to grow its distribution, and the company's website features

an online survey where visitors can "tell [Hooray] where to go next." The company is backed by Stray Dog Capital, a venture capital firm "investing in a healthier, humane and more sustainable future," with more than 30 holdings in plant-based foods, cellular agriculture and food technology.

McDonald's considers new plant-based options

In early November, McDonald's announced it would launch its own original line of 'McPlant' plant-based products, which could include simulated beef patties, simulated pork breakfast sausage patties and simulated chicken options.

"McPlant is crafted exclusively for McDonald's, by McDonald's," said Ian Borden, President, McDonald's International.

Starting in September 2019, at more than two dozen locations in southwestern Ontario, McDonald's trialed a Beyond Meat 'beef' burger. The trial ended six months later without much fanfare, prompting the company to search for a new solution.

The announcement is a blow to North America's two largest fake meat manufacturers, U.S.-based Beyond Meat and Impossible Foods, which have been pushing hard to have their products included on fast food menus. Following the announcement, Beyond Meat shares dropped by nearly nine per cent in value.

In May 2019, Tim Hortons introduced a Beyond Meat 'pork' breakfast sausage

sandwich at more than 4,000 locations across Canada, which was subsequently removed following low sales. Canadian-owned Harvey's continues to offer Lightlife-brand plant-based products, manufactured by Greenleaf Foods, a U.S.-based subsidiary owned by Maple Leaf Foods.

McDonald's Canada sources all of its real beef, chicken, fish, eggs and milk from Canadian producers but does not disclose from where its pork is sourced.

Fake meat guidelines under review

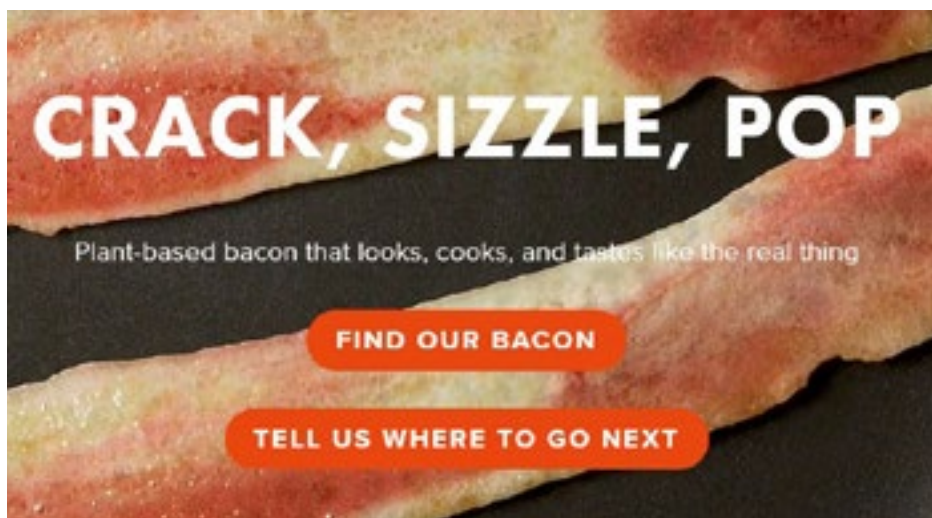
The Canadian Food Inspection Agency (CFIA) launched a consultation process in early November related to proposed updates to guidelines for industry on simulated meat, simulated poultry products and certain plant-based protein foods. The one-month online survey encouraged industry and consumers alike to submit their views on the matter.

The CFIA's current guidelines apply to products that closely resemble real meat or poultry, like plant-based burgers, which are made to look like a beef burger by using ingredients that simulate the red colour or fat marbling effect of animal-sourced meat.

The proposed updates to the guidelines seek to clarify what constitutes simulated meat or poultry products in accordance with the *Food and Drug Regulations* and *Safe Food for Canadians Regulations*. The guidelines outline the rules for labelling, advertising, composition and fortification for such products. Clearer guidelines will better support industry in understanding and applying the regulatory requirements.

Lab-grown meat labelling requested

In mid-October, the U.S. Alliance for Meat, Poultry and Seafood Innovation (AMPS Innovation) and the North American Meat Institute (NAMI) wrote a letter to the U.S. Department of Agriculture (USDA) to express their support for a new meat labeling framework that fosters transparency and consumer con-



Hooray Foods' bacon substitute, now available across the U.S., claims to capture the essence of real bacon, minus the real pig.

fidence in conventional and cell-based meat products.

AMPS Innovation is a collective of seven food companies that produce meat, poultry and seafood directly from animal cells. NAMI is a trade association that represents more than 500 companies that process 95 per cent of red meat in the U.S.

Cell-based or 'cultured' meat products are not yet marketed in the U.S. to consumers; however, these products are quickly approaching regulatory approval and commercialization, which means they could soon be found alongside conventional meat and plant-based products in U.S. grocery stores. U.S.-based Eat Just made history in early December as the world's first food company approved to sell cultured chicken products to consumers, in Singapore, and this trend is expected to continue elsewhere.

Burlington celebrates World Vegan Day

The City of Burlington, Ontario, issued an official proclamation to honour World Vegan Day on Nov. 1. Internationally, World Vegan Day was first recognized in 1994 by the Vegan Society: a 4,000-member promotional group based in the U.K.

The proclamation references Canada's Food Guide's suggestions for "an eating pattern high in plant-based foods" and "limiting high saturated foods." It goes on to recognize "members of the community" who "participate in activities... to increase awareness of the movement toward a vegan diet and support the humane treatment of animals."

Therefore I, Marianne Meed Ward, Mayor of the City of Burlington, do hereby proclaim **November 1st, 2020** as

"World Vegan Day"

in the City of Burlington and do commend its thoughtful observance to all citizens of our municipality.

Dated this 1st day of November 2020


Mayor Marianne Meed Ward

Animal activists were officially honoured by the City of Burlington this fall after threatening truckers and workers at the city's Sofina Fine Foods plant in summer.

In a social media post to announce the proclamation, Marianne Meed Ward, Mayor, City of Burlington personally dedicated the proclamation to long-time 65-year-old animal activist Regan Russell, "whose advocacy work to protect animals... impacted so many." Along with the commentary, Ward included a link to vegansociety.com.

Burlington, north of Hamilton, is home to the Sofina Fine Foods pork processing facility that serves as a regular protest site for activists. In mid-June, Russell was killed after coming into the path of a truck that was delivering pigs to the plant.

New faces in Canadian pork communications

Communications capacities have changed for the Canadian Pork Council (CPC), *Les éleveurs de porcs du Québec* (Quebec Pork) and Manitoba Pork.

At CPC, former communications manager Céline Bourbonnais left the organization in early September, replaced by Chrissy Stewart in late October. In Quebec, communications director Merlin Trottier-Picard has been replaced by Frédéric Labelle, and in Manitoba, communications coordinator Sandy Ellis has departed to make way for Joey Dearborn.

"It has been a great experience being part of the Manitoba Pork team," said Ellis. "As the industry continues to change, so too do the people. I am excited for the new leaders across the country, and I know producers are being left in good hands as industry issues evolve."

Pork producer communications representatives from B.C., Alberta, Saskatchewan, Manitoba, Ontario, Quebec, the Maritimes and CPC meet monthly, virtually, to discuss matters of relevance to the sector. In 2018 and 2019, the representatives met in Winnipeg and New Westminster, B.C., respectively, at the annual Canadian Farm Writers' Federation Conference to network with colleagues and journalists across agricultural sectors. The 2020 version of the nearly 30-year-old September event – scheduled to take place in Windsor, Ontario – has been postponed, pending COVID-19 restrictions. ■

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E-commerce transforms food industry for better

Mike von Massow

Editor's note: Dr. Mike von Massow is an associate professor in food, agriculture and resource economics at the University of Guelph and is the Ontario Agriculture College chair in food system leadership. He can be contacted at mvonmass@uoguelph.ca.

COVID bends but does not break food system

Our food system has adapted remarkably well to the pressures of the COVID pandemic. While we have experienced some short-term food shortages, these were driven more by demand surges than by supply issues. We also did see some disruption for producers when problems arose in meat processing plants, but these appear to be largely behind us, and supply is flowing relatively normally again.

The COVID experience so far has highlighted some vulnerabilities in the food supply chain but has also shown that the system is remarkably resilient. The challenges of the pandemic have also highlighted some opportunities within the system. One of those opportunities is for smaller food processors to access consumers directly through online channels.

Consumer, retailer behaviours adapt to circumstances

We have seen changes to food shopping behaviours arising from the pandemic. When the original shutdown occurred, we saw a combination of factors affect the food system. The food service channel closed completely and still has not opened back up to pre-COVID levels. Consumers were nervous about food availability, and overall demand at retail increased, because we were not eating out anymore. People shopped less frequently, and many tried online ordering (with or without delivery) for the first time.

There were clearly challenges early in the process. Companies struggled to build the capacity to pick orders and coordinate delivery or pick-up. And there were different approaches to the market. Sobeys launched its 'Voila' project, which picks orders from a state-of-the-art robotic warehouse that can assemble a 50-item order in about five minutes, which then ships directly using an optimizing routing software.

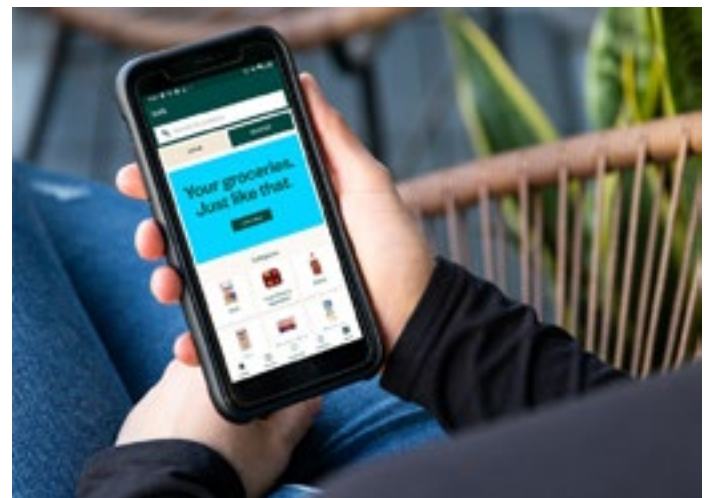
Other stores are picking orders from existing physical store inventory and offering pick-up or delivery through third-party partners. There has been an explosion in delivery, which has created the infrastructure to allow other smaller companies to piggyback on the opportunity. Small wineries and craft breweries, as an example, have seen a fundamental shift in their supply chain with a significant portion of the business moving to online ordering and direct delivery for as little as \$5 an order. This is a huge opportunity for small food processors to access customers directly to maintain margin.

There is an opportunity for smaller processors and farmers is to establish a web interface with delivery to allow them to deal directly with the consumer. There are many small food processors who have identified and begun to leverage this opportunity, which is expected to grow.

Several factors are driving this opportunity. First, as we have already outlined, more of us are buying things, including food, online for delivery to our homes or pick-up at a convenient point. While most of us will not ordinarily spend time going from physical store to store to find the product we want at the price we want, jumping from website to website requires little effort. It is easier to comparison-shop online, and once you find the website you like, repeating an order the next time is very simple. This is important.

It is difficult for many smaller processors to get onto store shelves. It can be very expensive, and small processors may not be able to provide the volume that large retailers require before the retailer will even consider adding a new product. For many of these processors, they have no way to access a larger customer base but an online shopping platform, and enhanced delivery expands the potential market dramatically.

Once we remove the requirement for consumers to go to the store in-person, getting products home is also easier from a delivery perspective. The cost of direct-to-home delivery is going down. Leveraging the large volume of orders that delivery companies are carrying from a variety of sellers provides access to smaller-volume sellers. While the delivery cost needs to be small-ish relative to the total cost of what you are ordering, this burden has been lessened given the huge volume of delivery vehicles on the road, which lowers the cost per delivery.



The trend of ordering groceries online for pick-up or delivery has exploded during COVID-19.

Pork Culture and Trends



'Voilà' by Sobeys is a robust grocery delivery service currently offered in the Greater Toronto Area. Other services by national and regional retailers serve most major markets across Canada.

It is also easier to receive products now that many of us are working from home. Coordinating multiple deliveries is much easier if you are at home regardless, and most deliveries can simply be dropped without signature. There does remain some threat of theft, but that is mitigated by those spending more days working from home. Meat processors have the additional cold chain requirement, but there are refrigerated options available, and the speed of delivery – especially within local markets – makes it less difficult.

It is also worth noting that large grocery companies are downloading some costs onto their suppliers. It is already difficult enough for small processors to get on the shelves of major retailers. Additional costs may make it even less profitable and provide further impetus

to invest in the infrastructure to sell directly to consumers.

Challenges remain, but future is bright

There are no doubt challenges associated with selling online and costs associated with both infrastructure and delivery. Companies require a new skill set to leverage the opportunity. There is some risk in making the investment in the case that the trend does not last beyond the pandemic. However, there is strong evidence to suggest the trend is here to stay. Sobeys' investment in the 'Voilà' system should provide some comfort to smaller processors in that regard.

Meat comes with some unique challenges beyond the obvious cold chain re-

quirements. Customers are accustomed to selecting the size of package that they want. In some cases, particularly for specialty products, they are able to point to exactly the product they want. In the case of online orders, sizes and prices need to be standardized so that payment and shipping can be done expeditiously. There may be an opportunity to have customers provide a weight range and price per kilogram. The order would then be billed only when the specific product is picked and included in the order. These are unlikely to be significant issues for consumers and may require more of a shift to the mindset of sellers.

There is a real opportunity for certain differentiated products to shorten the chain and deal directly with the end consumer. Small players will not compete on commodity products – shorter supply chains still have cost – but on specialty products, the opportunities are real. More and more companies are driving growth through this channel, and it is expected to become even more important as time goes on. ■

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SIP celebrates decade milestone

Geoff Geddes

Editor's note: The following piece was written for Swine Innovation Porc. For more information, contact Leslie Walsh at lwalsh@swineinnovationporc.ca.

Progress without research is like hiking without a compass: you may keep moving but likely in the wrong direction. In celebrating 10 years as Canada's leading facilitator of pig research, Swine Innovation Porc (SIP) remains on the cutting edge of the ever-changing pork industry.

By supporting research to enhance profitability and sustainability, the non-profit entity – whose members include the Canadian Pork Council (CPC) and eight provincial pork producer organizations – acts as a guide to keep producers and industry on the path to success.

Since 2010, SIP has facilitated three national swine research and development programs that encompass more than 50 projects involving more than 100 researchers, injecting \$51 million of investment into the swine sector. While many factors led to the formation of SIP, it was the power of collaboration that really drove its development.

SIP founded with a desire for collaboration

"Prior to SIP, the provinces had worked jointly on a national trucking project to evaluate pigs in transport," said Stewart Cressman, Chair, SIP. "In doing so, we realized we had similar priorities, so how did it make sense that we each did research separately? It was clear that we could save money and get better results by combining our resources."

As chair of Ontario Pork's research committee at the time, Cressman was approached by the head of a Quebec research group who felt swine was not receiving research dollars from the federal government at the same rate as other commodities. Ontario Pork was asked to join them in approaching Agriculture and Agri-Food Canada (AAFC) about boosting funds for

swine research. Also at this time, Cressman was invited to join the Canadian Swine Health Board (CSHB).

"The CSHB was the start of regular collaboration among swine industry representatives from around the country," said Cressman. "One of our guiding principles was 'national standards with regional implementation.' We could look at national solutions, but implementation had to occur locally, considering significant regional differences across Canada. As an organization, we benefited from a diverse membership that included veterinarians, processors and representatives from AAFC, among others, so we had the full supply chain at the table."

Amid greater activity in the swine research sphere, the federal government was working on a national research 'cluster' program for the agricultural sector, and SIP became one of those clusters for the swine industry.

"The government was looking at research as being demand-driven, where industry would determine their highest priorities and then cost-share with the government to carry out the research required," said Cressman.

That cost-share arrangement was usually 25 per cent from industry and 75 per cent from government. In return for con-

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SIP brings together the brightest minds in swine research, as seen at this workshop, hosted in Winnipeg, in 2013.

tributing the bulk of the funding, the government was quite prescriptive of what could and could not be done from a research standpoint.

"We would come to them with a Christmas list of the funding we wanted, and they decided how big the Christmas 'gift' would be," said Cressman. "In preparation, we circulated a set of priorities to the research community every five years and asked for a three-page proposal or letter of intent. From there, after a stringent scientific review and industry input, we made recommendations to the government on which projects to support."

Thus, SIP was initiated as a cluster management board that administers funds received from the federal government and matching dollars from industry. They have now embarked on a third cluster program and have developed considerable expertise in coordinating research programs and bringing researchers together with industry.

Early program wrinkles ironed out over time

"The current cluster program is working very smoothly compared to the first iteration, and I credit AAFC for listening to our feedback and making improvements to the cluster program," said Cressman.

To continue with this spirit of collaboration, SIP introduced regular meetings among researchers from different institutions to discuss their findings and any modifications in analysis that might be helpful.

"We see senior researchers mentoring the rookies at these meetings, and new researchers bringing fresh ideas to the table," said Cressman. "The result was a good exchange of ideas and an increased level of cooperation among swine researchers across Canada, which has been very valuable to the industry."

Also of value to the pork sector is the aspect of knowledge transfer, something SIP has stressed from day one.

"We can't assume that national research efforts meet every individual need of each province, but we hope we can provide

results that our partners, researchers and provincial pork producer organizations will disseminate to their stakeholders for the benefit of all," said Cressman.

To date, those benefits have flowed from a wide range of projects representing every aspect of the pork industry, including sow enrichment, phase feeding, truck washing, disease detection and more.

Sow enrichment equals healthier animals

Enrichment has been an increasing focus for the pork sector since the National Farm Animal Care Council's (NFACC) *Code of Practice for the Care and Handling of Pigs* was released. Since most of the research focused on grow-finish pigs, however, sows were the subject of a study by Jennifer Brown, a research scientist with Prairie Swine Centre. The move to group housing and the restricted diet for sows can often lead to greater aggression, making enrichment more important than ever.

The study employed four forms of enrichment in a free-access feeding system: no enrichment; constant enrichment with three wood pieces on a chain; rotating enrichment every three to four days among rope, straw and wood on a chain;

CONTINUED ON PAGE 38



Studying enrichment, such as this trial, in 2017, has helped produce fitter sows.

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and the same rotation but with a sound stimulus added during each change that has been thought to increase the value of enrichment.

Sows were rotated through the four options, and just the presence of enrichment was found to increase their standing time, meaning they were more active. This was important, as more activity enhances bone strength and muscle tone, producing fitter sows at farrowing.

This study added value for producers by demonstrating the impact of enrichment on sows, the importance of rotating that enrichment to maintain engagement, and the fact that effective enrichment can take many forms.

Phase feeding saves money

Given that a good chunk of producer revenue is consumed by feed, SIP has made reducing feed costs a priority topic for its research efforts. In one project on parity-segregated phase feeding, the team looked at limiting overfeeding of gestating sows while still meeting their needs for amino acids and energy.

While the standard approach in the pork industry is to give gestating sows one diet to follow throughout gestation, this project offered them two separate diets in recognition that sows have different nutritional needs at various stages of gestation and parity.

The result was an annual saving of \$5.69 per sow, with parity-segregated phase feeding over a conventional program. Since feed prices are prone to fluctuations, the project team used financial modelling to gauge the impact of changing corn and soybean meal prices over a five-year period. When the numbers were crunched, phase feeding again came out on top, with an annual saving of \$1.66 to \$10.06 per sow versus conventional feeding. For the producer feeding 10,000 sows every year, those numbers should offer much food for thought.

Truck washing is key to preventing disease

As porcine epidemic diarrhea (PED) and other diseases spark a greater interest in biosecurity, a prime target for SIP research has been the trucking sector, where the risk of disease transfer is ever-present. To address this challenge, a comprehensive study was undertaken, led by Terry Fonstad, Associate Dean, Research and Partnerships, College of Engineering, University of Saskatchewan.

One of the study's key findings was that while dry heating of pathogens for 15 minutes at 70 degrees Celsius could inactivate most of them, greater intensity was needed to address PED. As a result, researchers recommended heating trucks to 75 degrees Celsius for 20 minutes in every section of the trailer.

The project also worked on developing an automated cleaning system to prevent workers having to enter trailers to clean them, or at least limit their time in the trailer. The result was a manually operated system that allows cleaning of each level of a trailer by one person with 250 litres of water and a high-volume vacuum.

As well, Fonstad's team conducted a trailer survey that led to recommendations for improving biosecurity and comfort. Work on the survey, trailer heating and the cleaning system



By studying techniques for truck washing, including this example, from 2016, the industry is working to better protect itself against the spread of disease.

is continuing. At a time when disease threats are top-of-mind, this project will mean fewer losses for producers and greater welfare for their animals – truly a win-win.

Detecting ASF is critical for the industry

As scary as PED is for producers, African Swine Fever (ASF) poses an even greater threat to the entire industry. In light of its highly contagious nature and near-complete mortality rate, ASF has been deemed a global animal health priority.

While ASF can seriously impact the pork sector on both a local and international level, there is currently no vaccine or effective treatment for the disease. This has made ASF a top priority for research, including a current study led by Aruna Ambagala, Research Scientist, National Centre for Foreign Animal Disease (NCFAD), Canadian Food Inspection Agency (CFIA).

Given the significant amount of pork that Canada produces, the arrival of ASF would cost billions of dollars and have a devastating impact on farmers and other workers affected by the trade restrictions that accompany the virus. To help minimize the damage, Canada would engage in zoning or compartmentalization, along with active surveillance, which, optimistically, could allow pork exports to continue from unaffected areas of the country.

Unfortunately, active surveillance based on individual pig sampling is labour-intensive and costly, making it impractical to apply on a large scale. In seeking a viable alternative, researchers are turning to pen-based oral fluid (rope) testing, which is non-invasive and much less expensive in terms of financial and human resources. Over the course of the study, they hope to determine the feasibility of using oral fluid samples for active surveillance to maintain ASF-free areas during zoning, as well as validating oral fluid field testing in an ASF-affected country.

Though a cure for ASF remains elusive, an affordable means to keep pork trade flowing may be the best thing the industry can hope for in the event the disease reaches North America.

Today's research is tomorrow's practice

While these projects represent important progress for the swine sector, SIP is committed to building on its foundation.

"We continue to develop as an organization, enhancing our communication and trying to expand the sources of funding we can tap to conduct swine research," said Cressman.

Adapting to the current financial climate also means making the best possible decisions when it comes to future research.

"You never arrive at a point where everything has been addressed, but hopefully we have an attitude of continuous improvement," said Cressman. "Our ask for cluster three was \$26 million, and our current program is worth about \$18 million. For that money, we have letters of intent amounting to \$80 million for prospective projects, so we must determine priorities and identify which projects will have the greatest impact on the industry.

"In some cases, you also have to do some 'blue sky' research. I would say we aim for 75 to 80 per cent of projects where the outcomes can be applied now, and about 20 to 25 per cent that may bear fruit farther down the road. We must do what is needed to develop and maintain capacity in certain areas, while recognizing that the 'itch of the day' might not be the itch 10 years from now."

Through all the planning and prioritizing, the common thread may come down to a simple question: *so what?*

"We will always be guided by how a project can be implemented at the farm level and whether it will make a meaningful difference," said Cressman. "It's about ensuring that the money being spent will advance the science and contribute to answers. At the end of the day, we hope to have findings that can be shared for the benefit of all, while having the greatest possible impact on producers." ■

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Producers needed for environmental analysis

Christine Rawluk

Editor's note: Christine Rawluk is the coordinator for the National Centre for Livestock and the Environment at the University of Manitoba. For more information, email christine.rawluk@umanitoba.ca.

New study aims to benchmark production practices

Public scrutiny and regulatory action have increased in recent years, specific to the environmental risk associated with livestock production, including pigs.

Supported by Swine Innovation Porc (SIP) and partners across Canada, the University of Manitoba's National Centre for Livestock and the Environment is currently studying the Canadian pork sector's environmental footprint, which requires producer participation.

"Producer engagement from all pork-producing provinces is key to having a useful response set," said Mario Tenuta, study lead and Professor, Soil Ecology, University of Manitoba. "We are aiming to collect feedback from 400 producers, and we are currently halfway to that goal. As a thanks for their time, all participating producers will receive a small amount of compensation."

Study results will be applied in many ways

Consumers are increasingly concerned about the environmental impact of their food choices. This concern impacts their purchasing behaviours and is reflected in the decisions made at the retail and food service level. Even more critically, these concerns factor into trade agreements, which are foundational to the sustainability of the Canadian pork sector.

Provincial regulations, policies and incentives directly impact farm profitability. In the absence of scientific data to back sound policy development, the risk is implementation

of regulations and policies driven by social pressure, rather than evidence.

Footprint improvements are, by and large, driven by efficiency improvements, which result in cost savings. Considerations such as water and energy use, feed, housing and manure management are all important to understand, in this regard. This study will identify the practices that provide the most gains, and case examples will reinforce the list of beneficial practices. Industry and governments can draw on this information in developing policies that create programs and technologies that benefit individual operations, but this requires credible information.

Producer participation is needed

Eligible Canadian pork producers are encouraged to participate in an online survey, with the goal of collecting information that will support the study. Survey respondents must be decision-makers for their barns, and only indoor production (not outdoor production) is covered by the survey. The minimum operation size is 20 sows or more than 50 of either weaner or grow-finish pigs.

Before taking the survey, producers will face six screening questions. Respondent who do not meet the criteria are thanked for their interest but will be unable to complete the survey. The survey takes about 40 minutes to complete and will focus on the 2018 production year. Before beginning the survey, producers will need to have on-hand production statistics, feed composition, land and manure data and utility usage.

Although the total time to complete the survey is estimated at 40 minutes, the survey does not need to be completed in one sitting. Each user is assigned a unique code that allows them to access their survey at any time. All responses will be treated with the utmost discretion and confidentiality, and participants will be issued a cheque by mail as a token of appreciation.

Producers who are interested in taking the survey are asked to contact christine.rawluk@umanitoba.ca or their provincial pork producer organization.

Study results forthcoming

While the study does not have a hard timeline for completion, results will be published in an upcoming edition of the Canadian Hog Journal.

This project is part of the 'Swine Cluster 3: Innovating for a Stronger Pork Sector' research program, which is led by SIP and funded by the Government of Canada under the Canadian Agricultural Partnership (CAP), provincial pork producer organizations and industry partners. ■



The Canadian pork sector's environmental footprint has wide-reaching implications ranging from policy-making to producer profitability.

Pigs consume more water when stressed

Alvin Alvarado, Bernardo Predicala & Ken Engele

Editor's note: The following piece was written for Prairie Swine Centre. For more information, contact Ken Engele at kme131@mail.usask.ca.

Introduction

As part of a larger Swine Innovation Porc (SIP) project, "Use of novel technologies to optimize pig performance, welfare and carcass value," various technologies were developed and pilot-tested in different universities and research centres throughout Canada. After pilot studies were completed by the original developers of the technologies, the next step was to conduct commercial trials where selected developed technologies were applied in a production environment and evaluated under typical commercial practices. Commercial trials were a critical step after the research and development phase, providing the opportunity to adjust the technologies, facilitating their adoption in commercial barns.

Methodology

An individual water consumption system and infrared thermography system were installed in a grow-finish room with six pens containing 14 pigs per pen. Pigs were transferred into the room at 20 to 25 kilograms in weight and remained in the room for 10 weeks until reaching 105 to 110 kilograms.

The individual water consumption system was composed of a nipple drinker attached to a water flow meter and a radio-frequency identification (RFID) reader to capture individual pig data. The infrared thermography system was composed

of two types of infrared cameras: one to capture images of individual pigs drinking and a second to capture an image of all the pigs in the pen.

To assess whether the novel technologies were capable of detecting pigs that may be stressed due to routine practices, two stressors were introduced during the start, middle and end of the trial: moving pigs into the barn hallway and handling them through a pre-defined route for 10 minutes, and mixing unfamiliar groups of pigs.

Results and discussion

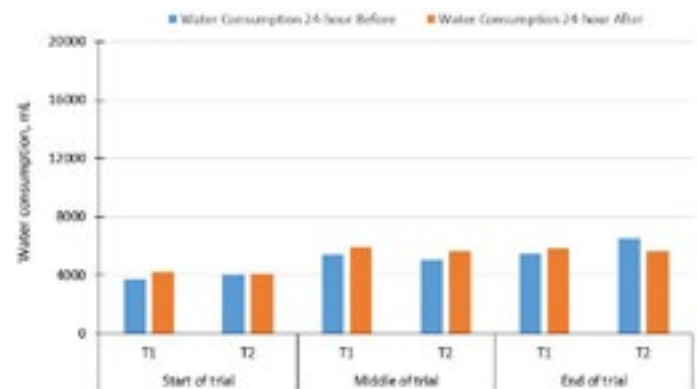


Figure 2: Average water consumption of pigs 24 hours before and 24 hours after the moving activity during the start ($n=12$), middle ($n=12$) and end ($n=10$) of the trial.

Water consumption and handling

Regardless of stress induction, water consumption increased as the trial progressed. At the start of the trial, grower pigs had an average water consumption of about 4,014 mL per day; this increased to 5,876 mL per day towards the end of the trial when pigs were nearing market weight.

At the start and middle of the trial, pigs tended to consume more water after the moving activity. On average, pigs consumed about 3,890 mL and 5,226 mL of water 24 hours before stress was induced at the start and middle of the trial, respectively, increasing to 4,138 and 5,878 mL after the stress was induced. These results may imply that grower pigs consumed more water when stressed. No apparent trend was observed for water consumption towards the end of the trial.

Water consumption and mixing

In contrast to the moving activity, water consumption generally decreased 24 hours after mixing unfamiliar pigs into the pen. Pigs consumed an average of about 5,387 mL per day of water prior to the mixing activity; this decreased to 4,738 mL per

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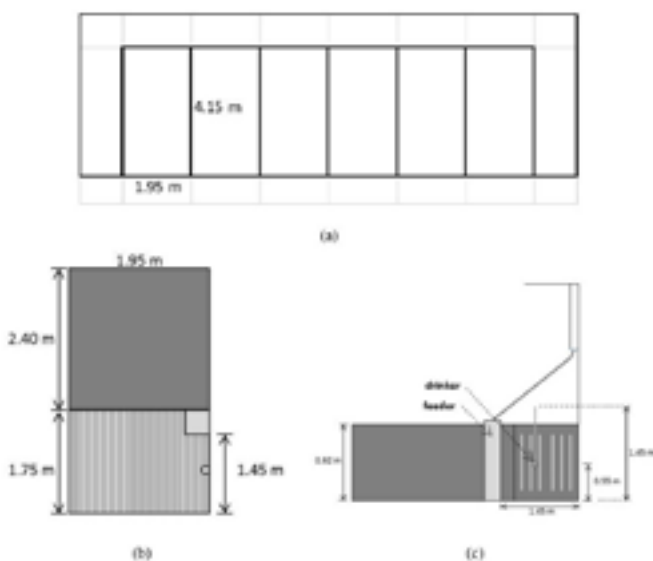


Figure 1: Floor layout (a) of the grow-finish room used in the study. Details of the pen showing the location of the feeder and drinker – top view (b) and side view (c).

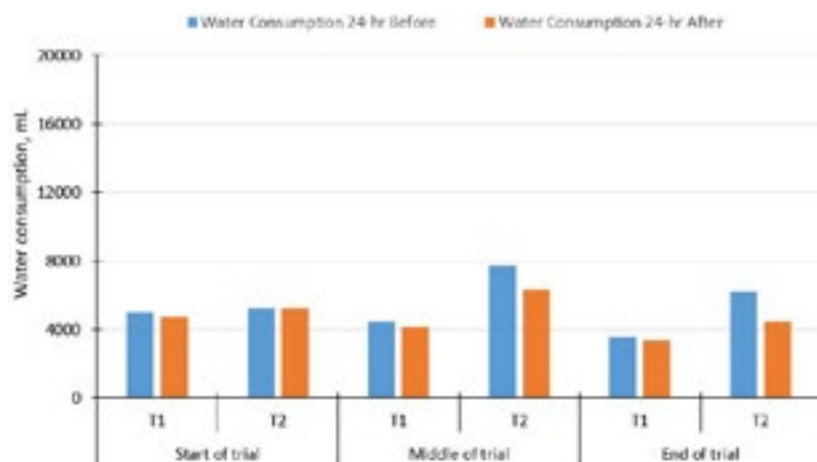


Figure 3: Average water consumption of pigs 24 hours before and 24 hours after unfamiliar pigs were introduced into the pen during the start (n=16), middle (n=16) and end (n=12) of the trial.

day 24 hours after mixing occurred. The decrease in water consumption might be due to aggression that occurred after mixing, which subsequently prevented some of the pigs from drinking. This observation may have also caused the apparent increase in water consumption from the start to the end of each trial.

Infrared thermography and handling

During the start and middle of the trial, no considerable change in body temperatures was observed. Towards the end of the trial when pigs were close to market weight, a slight increase in body temperature was observed after the moving activity. Pigs' average body temperature was 36.5 degrees Celsius before the moving exercise; this increased to 36.8 degrees Celsius after the mixing activity. This minimal change in body temperature could indicate that the moving activity was not strenuous enough to cause a marked change in the pigs' body temperatures.

Conclusion

Using the individual water consumption system, it was observed that grower pigs tended to consume more water when stressed due to physical movement. The system also confirmed that water consumption increased as the pig grew, regardless of stress induction.


As captured by the infrared thermography system, aggression resulting from mixing unfamiliar pigs into the pen caused an increase in the pigs' recorded body temperature. The system also showed that the pigs' body temperature was affected by changes in room temperatures.

In this study, installation of the individual water consumption system and infrared thermography system and inducing stress due to moving and mixing had no considerable negative impact on pig production performance.


Acknowledgments

The authors would like to acknowledge the financial support for this research project provided by SIP. We would also like to acknowledge the collaboration of researchers from the CCSI, the *Centre de développement du porc du Québec* (CDPQ) and Lacombe Research Centre in carrying out this study. Strategic program funding provided by Alberta Pork, Sask Pork, Manitoba Pork, Ontario Pork and the Saskatchewan Agriculture Development Fund is also acknowledged. In addition, we also wish to acknowledge the support of the production and research technicians at Prairie Swine Centre that make it possible to conduct this research. ■


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Performance trace minerals can reduce mortality

Zachary Rambo & Corey Carpenter

Editor's note: The following piece was written for Zinpro. For more information, contact Minda Kuckuck at mindak@2rm.com.

Introduction

While the job is largely the same as three to five years ago, sows today are being asked to achieve a greater level of productivity than in the past, as the industry looks for increased efficiency and profitability. This has driven increases in piglets per sow per year and put more biological pressure on sows.

Five years ago, the average sow mortality rate was just under nine per cent. Today, it has increased to more than 12 per cent on average, with some farms experiencing greater than 15 per cent annualized sow mortality. While there is no simple fix for this challenge, using enhanced trace mineral nutrition can be an effective management strategy by contributing to sow health, well-being and productivity.

As sow mortality rates have risen, piglet mortality rates have also been volatile, ranging from as low as 12 per cent to as high as 20 per cent, on average. Many factors contribute to pre-wean mortality. Reduced immune competency of piglets born to first-parity sows is a factor that can impact health not only during the lactation period but also in later phases of production.

Direct and indirect costs of sow mortality

There are two types of costs that swine producers must analyze when looking at sow mortality rates: direct and indirect costs.

The direct cost is the amount of money required to buy and raise a replacement gilt. For example, if you have 1,000 sows and the cost of introducing a replacement gilt at your farm is \$300, then a 10 per cent sow mortality rate would incur direct costs of \$30 per sow per year. That comes out to \$30,000 per year. After the gilts are placed, you will have to wait for that gilt to farrow. Considering a gestating length of 114 days, and assuming a labour and facility cost of \$2 per sow per day, the total cost increases to more than \$500 per entered female or \$50 per sow on your 1,000-sow operation. Replacing involuntary culls adds up quickly and is an expensive problem.

Indirect costs are more challenging to quantify, because they consist of lost or delayed profits. First-parity gilts have longer wean-to-service intervals and poorer conception rates, and their progeny have poorer

gain and feed conversion rates with higher rates of mortality. Therefore, losing a mature sow and replacing it with a gilt will temporarily lower productivity and profitability until that gilt matures. While there is value in genetic progress, a lag is experienced before that value can be recognized.

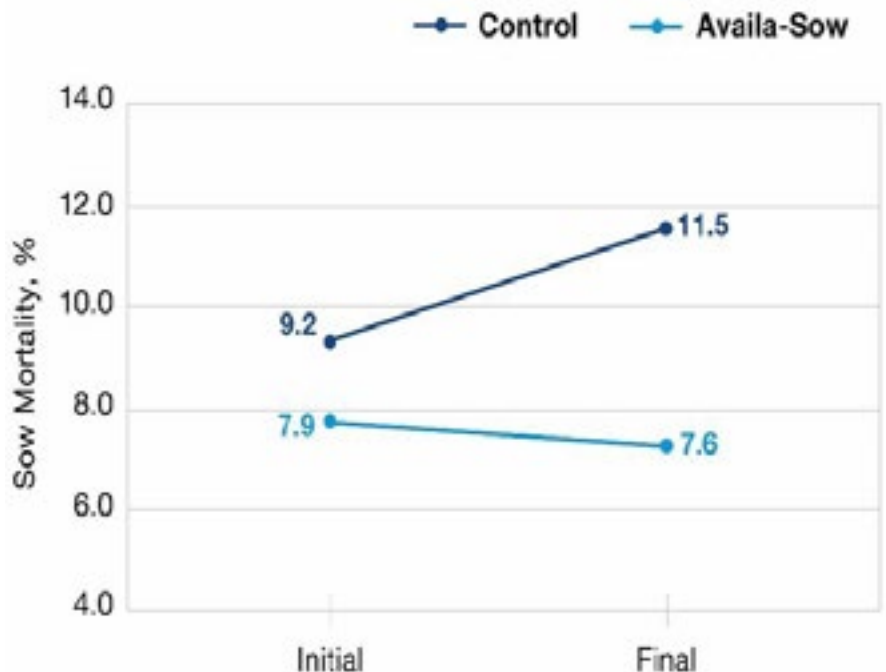
Impact of performance trace minerals

One way a swine producer can help reduce sow mortality rates and reduce costs in their system is to include performance trace minerals in the sow nutrition program. Trace minerals are a small and often overlooked part of animal nutrition but play a critical dietary role. Trace minerals serve as co-factors in physiological processes like energy and protein metabolism, which are the most expensive nutrients in swine diets. Trace minerals also play a very critical role in the synthesis of the different immune components and reactions.

Zinc is king when it comes to immune function and response. It is involved in the innate immune response and the synthesis of pro-inflammatory cytokines – small proteins important in cell signaling – as well as the active immune response through the formation of *T* and *B* cells that give sows lasting protection against different pathogens. Zinc is also intimately involved in epithelial integrity to keep pathogens out of circulation where they create challenges.

Copper, manganese and selenium all produce superoxide dismutase, which contributes to an animal's antioxidant func-

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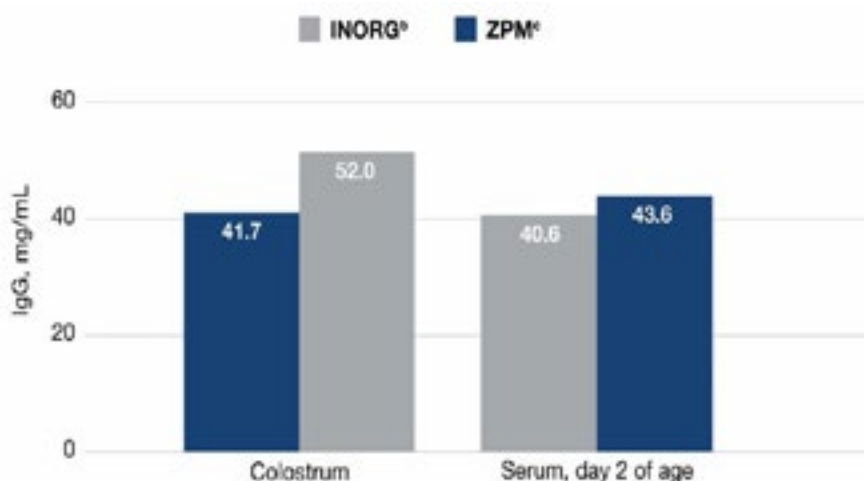
Supplementing Availa®Sow reduces sow mortality.

tion. Copper supports aspects of both the innate and the adaptive immune responses while manganese also supports functions of the innate immune response.

Zinpro conducted a field validation test where matched cohorts were left on their current inorganic trace mineral program or a program that included a partial replacement with performance trace minerals (Availa®Sow, Zinpro Performance Minerals). Sows consuming performance trace minerals had a gross reduction in mortality by nearly four per cent and a net reduction of 2.6 per cent when the initial differences are considered. This resulted in gross savings of more than \$0.25 per weaned pig, a significant reduction in the cost of production.

Colostrum's role in reducing mortality

Transfer of immunity through colostrum is the first line of immune support a piglet receives. A higher concentration of Immunoglobulin G in the colostrum and piglet serum demonstrates a higher level of maternal antibodies being transferred



^{*} Availa-Sow: Availa[®]Zn zinc amino acid complex, Availa[®]Mn manganese amino acid complex, Availa[®]Cu copper amino acid complex
[†] INORG: 110 ppm Zn as ZnO, 40 ppm Mn as MnO, 15 ppm Cu as CuSO₄
[‡] ZPM: 50 ppm Zn, 20 ppm Mn and 10 ppm Cu from Availa-Sow replaced equal amounts of inorganic sources

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from the sow to the pig, providing the piglet with a more robust immune system. This leads to higher survivability rates and weaning weights, which can translate to heavier market weights and a lower cost of production.



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Research demonstrates that sows supplemented with performance trace minerals have a higher concentration of Immunoglobulin G in colostrum, which corresponds to a higher concentration in the piglet serum compared to sows fed inorganic trace minerals.

Colostrum management strategies

Performance trace minerals give sows the nutrition they need to provide higher-quality colostrum, but proper piglet management is necessary to ensure the piglets are receiving enough of it.

One strategy you may use to ensure piglets are receiving adequate colostrum is split suckling. This technique helps ensure newborn piglets have adequate access to nutrients, as well as immunity development provided by colostrum. Care should be exercised with this strategy to ensure that pigs with inadequate gut fill do not have restricted access to suckling. Duration of teat access is also important, and pigs should be rotated frequently enough to ensure adequate access to the sow.

Cross-fostering is another common strategy. The intent is to provide piglets with the best possible chance at survival by placing them in an environment with greater access to milk. Cross-fostering can include joining piglets with second-parity sows with the appropriate number of functional teats and fostering suckling pigs older to younger. Pigs should be fostered to similar health status within rooms, and the number of cross-fostering events per piglet should be minimized.

Questions often arise about cross-fostering to gilt litters. Lifetime milk production for a sow is established during the first lactation, so stimulating mammary development is important during the sow's first lactation. The downside is that over-nursing a gilt during her first lactation can lead to excess body weight loss, which can prolong the wean-to-estrus interval and contribute to reproductive failure. Research has demonstrated that suckling a teat for a minimum of two days during the first lactation is sufficient to ensure adequate mammary development so that the subsequent lactation performance is not hindered.

Trace mineral feeding recommendation

Zinpro recommends providing 50 ppm of zinc, 20 ppm of manganese and 10 ppm of copper, all from performance trace



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minerals, as a partial replacement to the complete supplemental trace mineral level, beginning with gilt diets at 50 pounds of body weight. These levels should also be included in gestation and lactation diets as a partial replacement to a complete mineral program.

Sow and piglet mortality rates are on the rise and will cost you money. A combination of proper management practices and performance trace mineral supplementation can help alleviate sow and piglet mortality. ■

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