

# Canadian Hog JOURNAL

Canada's national hog magazine

A photograph of three men in hunting or military-style gear kneeling in a wooded area. The man on the left is wearing a dark jacket and blue pants, with a bandolier of shells slung across his chest. The man in the middle is wearing a dark jacket and glasses. The man on the right is wearing a dark jacket and a cap, and is holding a rifle. In the foreground, the head of a pig is visible, with a red tag on its ear.

**The war on boar rages on**

**Also inside:**

**High feed costs prompt strategic management**

**Lowering pork's carbon footprint by feeding peas**

**Pork's place in an increasingly plant-based world**



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## Cover Photo

Wild boar eradication near Mayerthorpe, Alberta



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# Message from the editor

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

It is a tale as old as time: man versus beast. As the war on wild boar rages on in North America, learn about how the issue is being approached by different jurisdictions, and head into the field with a pair of boar trappers to learn about eradication efforts.

Feed cost management strategies are becoming more and more popular as feed prices remain high, availability remains low, and as hog prices gradually decline approaching the fall. Find out how you can protect your operation from unnecessary losses.

Public trust matters in agriculture, and, for consumers, farmers are the most important representatives of the industry. Consider why we all need to work together to improve our image by sharing the good news of your work.

In an increasingly plant-based world, pork still plays an integral role in the diets of Canadians. Look past the simulated meat hype and see why the real deal is still wanted and needed.

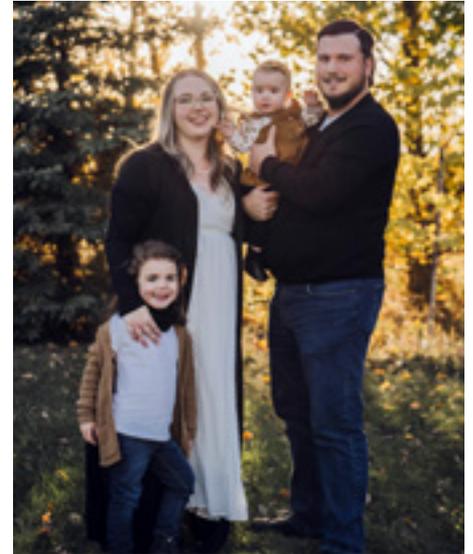
In research, creep feeding and canola extrusion are getting a closer look, and feeding peas could be a step in the right direction for lowering the carbon footprint of hog production.

As COVID-19 restrictions ebb and flow with case counts in each province, my home, Alberta, has imposed new guidelines for in-person gatherings, including a vaccine passport system. These kinds of spur-of-the-moment changes from government have complicated event planning in our industry, leading to cancellations or postponements in some cases and a shift to online formats in others.

The Alberta Livestock Expo in Lethbridge will not take place this year, unfortunately, but I was originally hoping to share this magazine – hot off the press – with producers and stakeholders at that event. Also in Alberta, the Red Deer Swine Technology Workshop has gone virtual for the first time, after being cancelled last year, and you can read about that in our next edition.

Coverage of this year's Porc Show – virtual for the second time – will appear in the next edition of the Canadian Hog Journal, and coverage of the upcoming Banff Pork Seminar – back in-person, as of now – will be featured in the special edition after that, as always.

Hopefully soon (and I *really* do mean soon!), I can make my way across the province and country again to broaden my horizons and keep in touch with so many of our great readers and others in the industry.



Even if we cannot connect face-to-face, share your ideas with me by emailing [andrew.heck@albertapork.com](mailto:andrew.heck@albertapork.com). There is a vast amount of experience and wisdom out there waiting to be broadcasted. Let me know what is on your mind! ■

Andrew Heck

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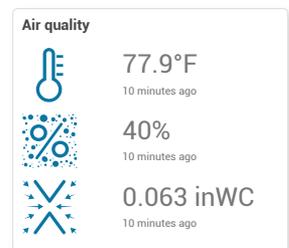


Production management system



**Overview**

- Alarms
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- Feeding
- Sorting



Electronic feeding for group-housed sows



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Electronic feeding for farrowing sows



# The war on boar rages on

Andrew Heck

Rallying the troops can be difficult when the enemy is mostly unseen, poorly understood or perhaps not even viewed as a threat. But rallying the troops to further the cause of wild boar eradication in Canada is long overdue.

Still, the Canadian war on wild boar continues to lack awareness among many people, even within the swine industry. The growing problem of invasive, non-native wild boar at large has been plaguing farmers and landowners since at least the 1980s, and today's population remains an under-studied, complex and deeply dividing problem. While some stakeholders are not yet on the side of swift, tangible action toward the goal of removing this species from our midst, they certainly should be.

The eradication of wild boar is a desperate and challenging but entirely necessary mission. For hog producers, much work must be done to mitigate the spread of swine diseases to domestic pigs, including the sizeable, high-value commercial herd. For cattle ranchers, protecting pastures from rooting is a

priority; for crop farmers, defending fields from being eaten from the inside-out; and for ecologists, preventing widespread environmental degradation.

Beyond the specific impacts of wild boar on their surroundings, a much more significant risk is posed by their presence: the potential for transmitting diseases like African Swine Fever (ASF) – which would practically end Canada's global trade in pork – along with Foot and Mouth Disease (FMD) – which would pose an incredibly challenging health scenario for the commercial hog and cattle herds.

Untold harm could be on its way if the war on wild boar is lost. But collectively, we have barely begun to make an advance. Who will step up? A few prominent stakeholders are leading the charge, but more are needed.

Eradication is the only solution; anything else will certainly fall short and seriously threaten Canada's multi-billion-dollar pork and beef industries if foreign markets shut their doors

to Canadian meat exports, which they certainly would, if the existing precedent holds up. This is not a gamble anyone should be willing to take, but yet, the dice are still being rolled, with Canadian farmers standing to lose everything they have worked their lives for, and Canadian consumers standing to lose the quality-assured, safe, nutritious products they know and love.

If it sounds more serious than you thought, it is.

## Battling boar with bushcraft

At a meeting of the Alberta Pork board of directors in late 2020, it was decided that more than \$400,000 would be committed toward wild boar eradication and related disease prevention efforts – a bold and courageous throwing down of the gauntlet by Alberta producers.

“The commitment of funding from our board was instrumental in helping our organization support two consultants to track, trap and kill wild boar,” said Charlotte Shipp, Industry Programs Manager, Alberta Pork. “Thanks to this

*CONTINUED ON PAGE 8*



*Invasive, non-native wild boar at large are a pest and a scourge. Their presence jeopardizes livestock, crops and the environment. A growing number of Canadian swine industry stakeholders are taking up the sword against this wicked but intriguing foe.*

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*Alberta Pork's field-based wild boar eradication contractors, Larry and Scarlett, head out to replenish one of their traps set on private property in north-central Alberta. Gaining the trust and permission of landowners is a crucial part of the process.*

funding, combined with support from our provincial government and other partners, Alberta is taking an aggressive and hardline stance on eradicating wild boar at large.”

The consultants, Larry and Scarlett, are two individuals hot on the trail of Alberta's wild boar. With strategic direction from Alberta Agriculture and Forestry, these troopers have taken the fight of this destructive, elusive species straight into the battlefield where the formidable creatures make their stand.

Larry and Scarlett's covert operational tactics are well-suited to the work they do. Wild boar are extremely intelligent and driven to survive, which can make them very unpredictable.

“If you hurt one of them, they won't stop until either you're dead or they're dead,” said Larry. “That's just the way it is.”

The traps set by Larry and Scarlett are found in several strategic locations more than 100 kilometres northwest of Edmonton. Because much of their work takes place on private land, establishing relationships with locals is a necessary component of the job.

“Our biggest reward is getting to know landowners and sharing the joy and satisfaction after we have removed a sounder [group of wild boar] from their property,” said Scarlett. “Larry and I are a husband-and-wife team, and we

own land ourselves, which helps them identify with us a bit better, I believe.”

Trust is key when operating on private land, not only to gain access to relevant sites, but also for the maintenance of pricey equipment. In terms of choosing where to set traps, much of the intel relies on Larry's depth of experience in the bush.

“You have to look for patterns – almost like boar ‘highways’ – to determine where they may have been, where they may be now, and where they may be going next,” said Larry. “They're so smart that it's incredibly difficult at times. Probably the only animal out here

that comes close to their intelligence is a wolf.”

If intelligence and stubbornness are positive signs for the survival of a species – even an invasive one – then wild boar are masters of their adoptive domain.

“You can really see where they're going in winter, but the conditions for us can be brutal,” said Scarlett. “A lot of our equipment suffers because of this. In summer, we get about three weeks of battery life for our traps and cameras, but in winter, they have to be recharged and replaced almost weekly.”

Each site includes a purpose-built trap and two tracking cameras, one of which is mounted at eye level tens of feet away from the trap's gate, and the other of which is mounted up high on a nearby tree, peering into the trap itself. The tree-mounted camera essentially allows Larry and Scarlett to deliver the final verdict on any given trap – often from the ‘comfort’ of their own bed, usually between the hours of 11 p.m. and 5 a.m., seven days a week.

The cameras operate using cellular data transmitted when a passing animal triggers a sensor, which sends a notification to the couple's mobile phone. Even in the middle of the night, they have to work quickly to make



*Scarlett scatters bait within the trap, while Larry replaces a camera battery. Every trap is somewhat of an experiment, and every specific location is closely guarded to protect the equipment and preserve the confidence of the targeted sounder.*



*Larry climbs a tree next to the trap to ensure that the cellular signal from the mounted camera is synchronized with the trap gate mechanism below. This signal is the lifeline for the couple's phone to activate the gate, and a death sentence for the trapped sounder.*

the call on whether to send the signal back to the trap for the gate to close. This is only done when they can see an entire sounder inside of a given trap. Otherwise, if even one individual is observed outside the fence, closing the gate could botch the entire operation.

“The sows and juveniles absolutely have to be in the trap,” said Scarlett. “We won’t drop the gate until we are sure the complete sounder is inside, which can take weeks or months depending on how eagerly a particular sounder enters the trap. If we drop the gate with individuals still outside, we end up educating them, which makes our job way more tricky.”

Each sounder numbers approximately 10 to 15 individuals. Females – which compose about 70 per cent of any sounder – will farrow litters of six to nine juveniles twice annually, starting when they reach reproductive maturity at six-months-old. Eradicating an entire sounder, in that case, could represent upwards of 100 individuals removed from an area for that given year. Ensuring that traps are capable of doing the job right is a key concern.

Boars are notably confident in the presence of fellow wildlife – even bears – which creates two challenges: convincing a sounder to enter a trap

willingly, and also keeping bears away from the bait that is meant for boars. The bait is a corn-based proprietary mixture concocted in Larry and Scarlett’s own basement through trial and error.

Larry and Scarlett’s work is largely thankless and unknown, except among the landowners with whom they have forged friendships beyond the scope of their boar-based efforts. Such is the case with one landowning couple living near

the intersection of where an unpaved road meets a relatively perpendicular river – on the edge of nowhere, to most outsiders.

The landowners have lived in that spot for more than four decades, and only within the past couple of years did they gain first-hand experience with wild boar when a ruthless sounder tore a shocking path of destruction through their cattle pasture and barley crop. Like many of their neighbours, the landowners previously had little idea just how dangerous the boars could be.

“It’s not only land that’s affected but livestock too,” said Scarlett. “We’ve heard from landowners about their cattle having abortions due to the stress of noticing wild boar in the area. And who knows if a boar would ever attack a calf? They wouldn’t hesitate to eat just about anything convenient, including meat.”

Skepticism contributes to a widespread misunderstanding or downplaying of the issue. In 2008, the Government of Alberta issued a bounty on wild boar, and to this day, many avid hunters would love to come across one to shoot, with no need for a tag. Unfortunately for hunters, the bounty system essentially

**CONTINUED ON PAGE 10**



*Damage to pasture and crops is a concern for many landowners, who are sometimes reluctant to believe the potential for destruction until they experience it themselves.*

failed and, in fact, worsened the problem altogether. For this reason, the practice of hunting wild boar in Canada is expressly discouraged.

And it is not just wild boar hunting, but hunting in general, that complicates eradication. As fall approaches, and plentiful summer food stocks begin to run dry, boars have a habit of going into hiding, combined with the encroachment of hunters who are seeking other forms of game.

“It’s like a faucet turns off,” said Scarlett. “As soon as hunting season begins, we notice a dramatic reduction in activity on our cameras. They become even harder to track.”

Despite the potential for conflicting viewpoints on hunting, Larry stressed that it is not an us-and-them mentality.

“I have nothing against hunters, and I’ve hunted my whole life,” said Larry. “The sites that receive the most pressure from hunting are the same sites where we tend to eradicate the most wild boar. It’s no coincidence; anything short of whole sounder removal increases the wild boar population.”

Looking at the bigger picture, Larry sees potentially negative consequences if the problem persists.

“We just want to do everything we can to contribute to the success of the program,” said Larry. “We really have to stop the spread of wild boar. If we don’t, we’re all going to suffer for it. If farmers have to deal with this situation while trying to produce food, it’s going to be felt all the way to the grocery store.”

### Swapping war stories with a veteran

Perry Abramenko is an Inspector & Pest Program Specialist with Alberta Agriculture and Forestry who has been working since 2013 on the wild boar file.

“The bounty program did not accomplish what it was supposed to, in terms of getting rid of boars, but it did give us a lot of data to work with,” said Abramenko. “With any kind of human



*Alberta’s famous feud with the invasive Norway rat is a well-documented success story of pest management, but there is still a long way to go with wild boar.*

disturbance, these animals scatter and infest new areas. They’re so intelligent, and they’re nocturnal, so they know where they can be safest.”

The data collected through the bounty program suggested in 2013 that the problem was more noticeable in some municipalities than others, but the prevailing belief since then is that sightings are simply under-reported. While certain municipalities may have a higher concentration of observed wild boar, that is an insufficient way of gauging the scope. According to Abramenko, 24 of Alberta’s 74 rural municipalities have reported at least one wild boar sighting – a much broader range than only two eradication specialists can handle on their own.

“Those sightings are the ones we’re aware of. Are there others?” asked Abramenko. “There certainly could be. This is why reports from the public are so vital.”

Around the time of Abramenko’s hiring, the Alberta Agricultural Services Boards’ provincial committee – which directs the province’s 69 municipality-based farming regions – passed a

resolution that has provided the pretext for implementing stronger measures against wild boar.

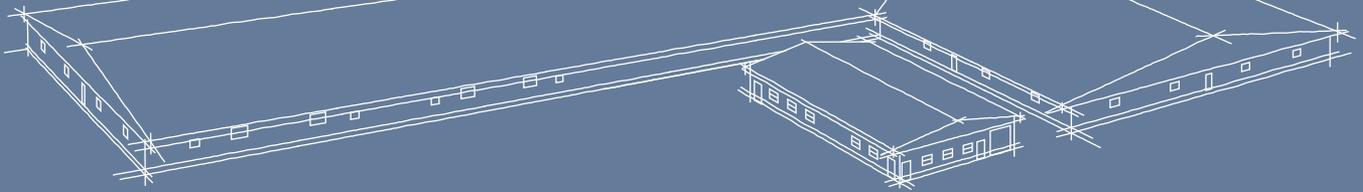
From north to south, at least 10 of Alberta’s rural municipalities today have passed bylaws banning wild boar, including the counties of Spirit River, Grande Prairie, Lesser Slave River, Smoky Lake, Thorhild, Yellowhead, Wetaskiwin, Stettler, Red Deer and Cardston. But that still covers fewer than half of the locations where the animals have been spotted and, curiously, few of the acknowledged hotbeds.

“In addition to supporting the work of Larry and Scarlett, with Perry’s help, Alberta Pork will be pushing for all rural municipalities in the province to ban wild boar,” said Charlotte Shipp, Industry Programs Manager, Alberta Pork. “If we don’t have the law on our side, we are placed into a major predicament. We will ask municipal representatives to assist us on this; otherwise, landowners in their communities will be affected.”

Novel, cross-ministerial approaches are also being examined. Partnering with Alberta Environment and Parks, work is being done to train invasive-mussel-

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# Hog housing.



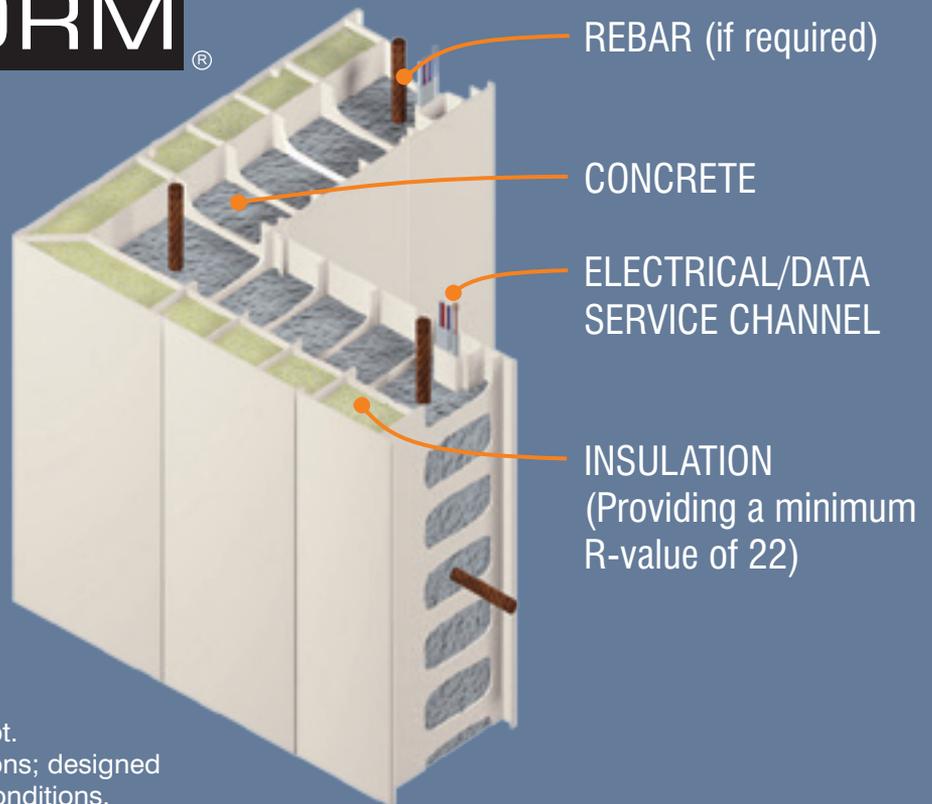
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Currently, wild boar are replenishing their numbers quicker than they can be dispatched. Piglets grow up and reproduce within six months of birth.

sniffing dogs to detect wild boar scat. The same biologists behind the sniffing project are also collecting water samples from the province's lakes to detect the presence of wild boar DNA, as another means of surveillance. By analyzing water samples, further hints could be given, and by using drones to survey land and crop damage, there is no shortage of techniques being explored or opportunities to enhance efforts, if appropriate resources are made available.

"The sooner you get onto eradicating a pest, the likelier you are to be successful," said Abramenko. "If you can get onto them when it's an emerging population, when the densities are not very high, that's ideal. That said, I think eradication is still achievable, as long as we stay the course."

The larger, farther-reaching goal has extended toward establishing a permanent program involving wildlife groups.

### Taking a fresh approach to the frontline

As time goes on, new regiments continue to join the alliance against wild boar, including the Alberta Invasive Species Council (AISC).

"We wanted to take the wild boar issue and make it very public," said Megan Evans, Executive Director, AISC. "It took a long time, but we carefully crafted messaging to be broadcasted through various forms of traditional and online media."

With assistance from Alberta Agriculture and Forestry, Alberta Pork and Alberta Beef, AISC's 'Squeal on Pigs!' campaign has received a great deal of attention on social media, and the organization has been sought after by mainstream media outlets as well, further amplifying the campaign's reach.

"It started when I got a hold of officials in the U.S.," said Evans. "That's where we got the 'Squeal on Pigs!' concept from – we actually borrowed and adapted their materials, which fit perfectly with what we are trying to do."

Not everyone is entirely happy with the push toward eradication, however. As with many issues touching animal agriculture, an open online petition, 'Stop Mass Extermination

of Wild Boars,' has been circulated on the website, 'Animal Petitions: Humans Defending Animals From Other Humans.' The petition has received nearly 20,000 virtual signatures from individuals who may or may not be from Alberta or even Canada.

"It's incredibly disappointing that some members of the public insist that our collective efforts toward eradication and awareness are not the right course of action," said Darcy Fitzgerald, Executive Director, Alberta Pork. "It represents a total disregard for the farmers who produce food for Canadians and the natural ecosystem this invasive species is infringing upon."

Unmoved by critics, Evans is pushing forth and encourages anyone and everyone interested in joining AISC's efforts to do so.

"We're hoping to make this campaign even bigger," said Evans. "Billboards, hats, t-shirts – just about anything to spread the word. That's what we're all about."

What is the best way to report a wild boar sighting in Alberta? AISC's free 'EDDMapS' smartphone app is a convenient way to provide the necessary information to Alberta Agriculture and Forestry. Alternatively, sightings can be reported by emailing [af.wildboar@gov.ab.ca](mailto:af.wildboar@gov.ab.ca) or by phoning 310-FARM (3276).

**SQUEAL ON PIGS!**

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Alberta's 'Squeal on Pigs!' campaign is raising public awareness of wild boar.

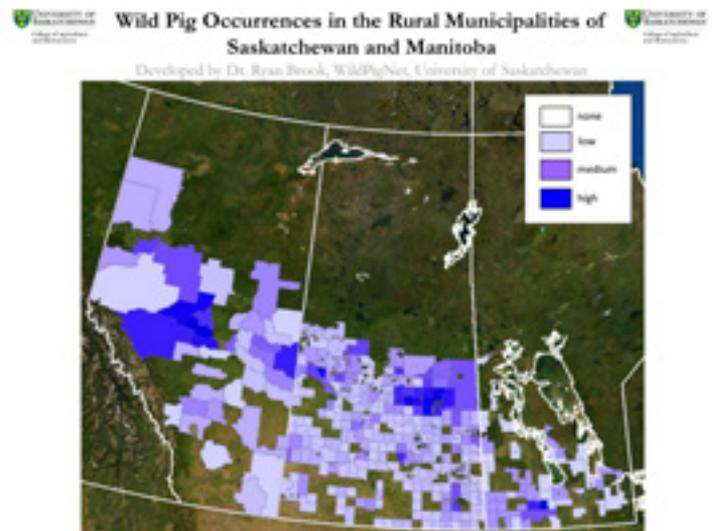
## Understanding the art (and science) of war

Invasive species management is also a focus on the national level for the Canadian Wildlife Health Cooperative (CWHC). Working with the National Farmed Animal Health and Welfare Council (NFAHWC), the two organizations are collaborating to help facilitate knowledge sharing and coordinate mitigation efforts across Canada, with connection to the Canadian Pork Council's (CPC) African Swine Fever (ASF) Executive Management Board.

Environment and Climate Change Canada has endorsed the CWHC to lead a project that supports mitigating the social and ecological harm created by wild boar. As a starting point, the group performed a scan of wild boar prevention efforts for each province. After that, strategic and operational working groups were formed. The strategic approach includes hosting a webpage of wild boar resources, in addition to a communications approach that directs public awareness efforts through social media. A disease surveillance subgroup has been tasked with developing a national sampling protocol for wild boar and the establishment of a central tissue repository. If implemented, the tissue repository would store samples to support research and testing by independent investigators.

Before being able to understand the disease implications of wild boar, the industry first has to establish where they are. Ryan Brook, a researcher at the University of Saskatchewan, has been observing the problem for more than a decade. Try as he might, adequately expressing the gravity of the situation has been a struggle for Brook, whose persistent efforts to study the spread of wild boar and raise alarm bells have been met with some resistance.

"For the first eight years I did this work, everyone ignored me, and for the next two, everyone yelled at me, but now it's



*The counties of Woodlands and Lac Ste. Anne in Alberta; the rural municipalities of Turtle River, Lake Lenore, Barrier Valley, Bjorkdale and Tisdale in Saskatchewan; and the rural municipality of Victoria in Manitoba are all in the 'high' occurrence category for boar sightings.*

slowly changing," said Brook. "No-one benefits from having wild pigs around, which means there's a ton of common ground to work together, if we choose to."

In 2019, Brook and his PhD student, Ruth Aschim, released a comprehensive map of wild boar – a great start at capturing the extent of the invasion, given the inconsistency and inattention to reporting sightings and truly investing in understanding the issue.

"It's important that we have useful and scientifically defensible work," said Brook. "Without it, we're not too sure if we're making a significant difference. Sometimes I think eradication efforts are a bit like mowing the lawn – we're dealing with it the best we can, but the populations rebound

*CONTINUED ON PAGE 14*

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so quickly. We don't really know unless we have the data."

When it comes to persuading deniers – those who believe the crisis is being overblown – Brook thinks appealing to the pocketbook may be effective.

"The economic impact needs to be studied better," said Brook. "We know about compensation for crop losses, as an example, but what about the cost of disease? Is it worth the risk?"

Supporting Brook's theory, a study released in July 2021 from the University of Queensland (Australia) and University of Canterbury (New Zealand) has used predictive population models and advanced mapping techniques to suggest that wild boar may be responsible for rooting an area covering a total of 36,000 to 124,000 square kilometres in regions of the world where they are not native. The result is the release of around 4.9 million metric tonnes of carbon dioxide annually, which is the equivalent of 1.1 million fossil-fuel-burning motor vehicles. Another study out of Australia, measuring the financial impact of pests over the last six decades, suggests

invasive mammals, including wild boar, may have cost the country \$66 billion during that span of time.

From their massive expansion efforts to their outright destructive behaviours, in addition to what we are learning about their impact on carbon emissions and the economy, wild boar present a ballooning challenge for ecologists to convince policymakers to take meaningful action.

### **The standoff south of the border**

The U.S. Department of Agriculture's (USDA) standard nomenclature for wild boar is 'feral swine.' In 2014, in response to the increasing damage and disease threats posed by expanding feral swine populations, U.S. Congress appropriated \$20 million to the USDA's Animal and Plant Health Inspection Service (APHIS) for the creation of the collaborative 'National Feral Swine Damage Management Program.' Congress has continued to allocate funds annually, in support.

Through testing feral swine carcasses recovered from across the country, USDA-APHIS monitors for African

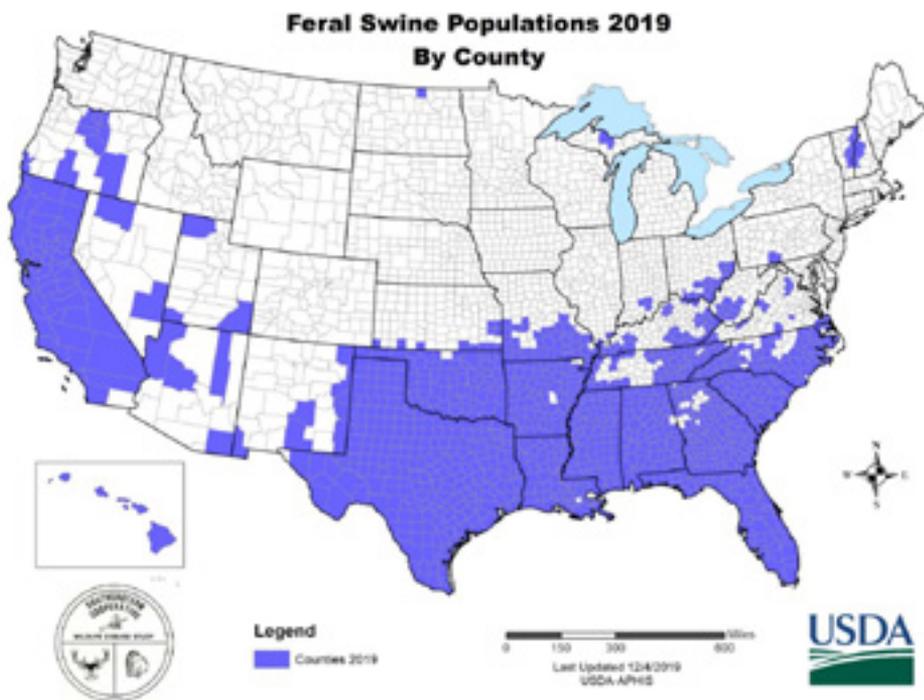
Swine Fever (ASF), Classical Swine Fever (CSF), Foot and Mouth Disease (FMD), pseudorabies and swine brucellosis. To date, feral swine blood samples have been seropositive for pseudorabies and swine brucellosis, but, thankfully, no cases of ASF, CSF or FMD have been identified. These afflictions are all critically concerning for the commercial swine industry, making this testing an invaluable part of surveillance efforts. Recently, USDA-APHIS and the Canadian Food Inspection Agency (CFIA) reached an understanding regarding a protocol to maintain cross-border trade between our countries in the case of an ASF outbreak in wild boar on either side of the border – a positive development, however cynical seeming.

"These animals don't respect ranch fencing, county borders, state borders or international borders," said Justin Bush, Executive Coordinator, Washington Invasive Species Council. "Our challenge is finding the best ways to engage the public and motivate them to participate in feral swine reporting. The mantra is, 'Squeal on Pigs!' If you see something, say something."

In 2017, the state of Washington conducted a study to measure the potential economic impact of feral swine when it comes to harming crops and livestock. Following the study, the total price tag was estimated at more than \$6 billion worth of agricultural commodities at stake.

"Any time humans play a part in invasive species trends, it becomes very unpredictable. That's the hardest thing to grapple with," said Jeanine Neskey, Extension Specialist, USDA-APHIS. "Genetics samples are helping us understand where pigs are moving to and from. We can tell that pigs found in one area are directly related to populations found hundreds of miles away, which suggests people are moving them intentionally. In some cases, law enforcement has caught offenders, and they've been prosecuted, but that's rare."

*CONTINUED ON PAGE 16*



*In the U.S., wild boar – known as 'feral swine' – are practically endemic in the southern states from Texas to South Carolina. Few northern jurisdictions, to this point, have been a concern, but that is changing.*

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<b>Start Weight (kg)</b>	5.98	8.07	7.96	7.69
<b>End Weight (kg)</b>	35.84	32.6	36.56	30.23
<b>Number of Days</b>	46	43	46	42
<b>Overall ADG (g/d)</b>	<b>646</b>	<b>570</b>	<b>622</b>	<b>536</b>
<b>FCR</b>	1.59	1.43	1.57	1.47

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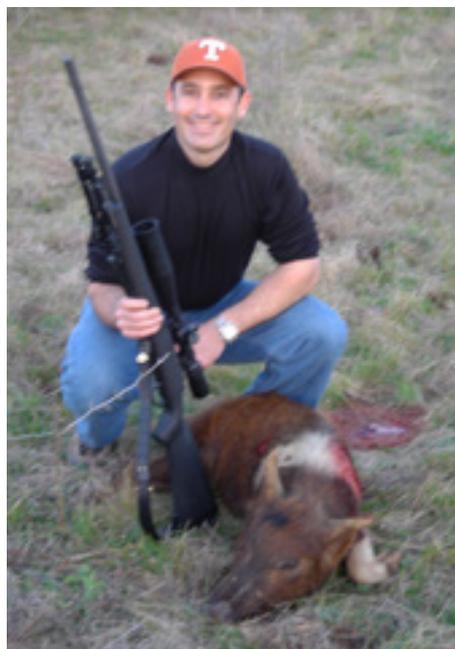
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In Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Georgia, South Carolina and Florida, feral swine are present in all but a small handful of counties, and they are on the move in Canada's direction. Missouri, sharing its southern border with Arkansas, is at a crossroads. Directly north of Missouri sits Iowa – a major commercial pork-producing and -processing region with little to no natural fortifications to stem the spread. Beyond Iowa, Minnesota and Manitoba.

"We still have a lot of work to do to get people to realize the problem," said Neskey. "Everyone should care if feral swine are running your local farmer out of business."

Rolette County, North Dakota, is the only U.S. jurisdiction along the 49th parallel where any population of feral swine was known to exist in 2019. The county is adjacent to Turtle Mountain Provincial Park in Manitoba, directly south of Brandon. In the northeastern U.S., target areas exist near the Vermont and New Hampshire borders with Quebec, just south of Sherbrooke.

In 2015, a study conducted by USDA-APHIS revealed that nearly 50 per cent



*Nearly half of all feral swine carcasses tested at Texas abattoirs came back positive for various bacteria related to foodborne illness.*

of more than 300 samples collected from feral swine carcasses processed at Texas abattoirs contained antibodies for *Leptospira* – the bacteria responsible for Leptospirosis in animals and humans. Without treatment, Leptospirosis can lead to kidney damage, meningitis, liver failure, respiratory distress and even death. Just the presence of *Leptospira* at an abattoir puts workers at risk, not to mention consumers.

Feral swine presence, worsened through hunting, routinely jeopardizes the safety of motorists in Texas as well. Vehicle collisions with these animals can occur year-round, 24 hours a day, with nighttime during the fall and winter months presenting the greatest risk. In some cases, motorists have died as a result of these crashes, which, collectively generate \$36 million worth of personal and property damage annually.

In a landmark, progressively minded decision, in 2015, Montana became the first U.S. state to declare wild boar hunting illegal. Since then, keeping wild boar at bay has been a focus for the state, and no major concerns have emerged since then, as a result.

In contrast, in 1999, the Tennessee Wildlife Resources Agency attempted to control wild boar by opening a statewide hunting season with no tags or bag limit. Unfortunately, it was during this period that their numbers grew rapidly, as disjointed populations began to occur in areas of the state where they had never existed before. Recognizing its gaffe, the state shifted gears in 2011, declaring wild boar an invasive species, rather than wild game – partly acknowledging its mistake but not fully rectifying it.

The Montana-Tennessee dichotomy represents a tale of two states: one confronting the matter until the window of opportunity has closed. It is a slippery slope and an uphill battle for champions of eradication.

"Everybody has a role to play, but they might not be aware of it," said Bush. "I believe we can eliminate feral swine, but it is going to take the whole community

from agriculture and government to Indigenous groups and foresters."

## **Saskatchewan and Manitoba offer backup, urge unity**

In Saskatchewan, where the range and concentration of wild boar have received considerable academic investigation, producers too are taking note.

"We're still trying to understand the full extent of the problem. We've known for years about some areas where wild boar might be living but finding evidence of exactly where has been challenging. Property damage of any kind is a concern," said Mark Ferguson, General Manager, Sask Pork. "It's also a high priority for our board on the disease side. We fully appreciate the need for vigilance, since there's still a significant risk that's not worth taking."

The Saskatchewan Crop Insurance Corporation (SCIC) conducts eradication efforts through its 'Feral Wild Boar Control Program,' based on reported sightings mostly from observant landowners. In some cases, insurance payouts have been made directly linked to crop damage caused by wild boar. In the past two decades, Moose Mountain Provincial Park in the southeastern part of the province attracted interest.

Saskatchewan Agriculture also has a surveillance program, run in cooperation with SCIC, with camera-equipped bait stations placed in areas where sightings have been reported and in areas close to farmed wild boar operations. To date, more than 40 bait stations have been established. Currently, attention is being paid to the Lenore Lake region in the north-central part of the province – home to a wildlife area and bird sanctuary – where more than 500 wild boar specimens have been removed in the last five years.

"We are asking the public not to hunt these animals and report them instead," said Ferguson. "Because hunting can contribute to the problem, the best course of action is to report sightings to the 1-833-PIGSPOT hotline in Saskatchewan or to the nearest SCIC office."



*Wild boar thrive in areas where prairie meets bush. Historically, Moose Mountain Provincial Park – 200 kilometres southeast of Regina – was considered a mecca for sightings.*

Recognizing the growing need to act, Manitoba Pork has looked to Alberta Pork as a guiding example for how to approach the issue.

“There are differences with each jurisdiction,” said Darcy Fitzgerald, Executive Director, Alberta Pork. “If we want the program to work, we need coordination across the country, and we need to have resources from all levels of government to target our programming.”

Currently, Manitoba Pork is seeking support from the provincial government to provide funding for activities that would kickstart an eradication campaign where one does not already exist.

“We went to our board of directors and presented the problem,” said Jenelle Hamblin, Manager, Swine Health, Manitoba Pork. “They saw what’s going on in other parts of the world, and their response was, ‘There’s no way we can let that happen here.’ They know it would be a huge detriment to our sector.”

In Manitoba, much of the known wild boar sightings have occurred on the periphery of the Manitoba Escarpment – a wooded upland region where bush meets agricultural land. The region

contains Riding Mountain Provincial Park and Spruce Woods Provincial Park. Hamblin suggests that this area of the province could start attracting wild boar if care is not taken.

“Wild pigs can harm our domestic swine herd and trade in pork, and that’s a problem. They can harm crops, and that’s a problem. They can harm the environment, and that’s a problem,” said Hamblin. “The common denominator is that, if they’re gone, they don’t pose that risk anymore. This is why we all need to work together.”



*Rather than waiting for a problem to present itself, Ontario is getting ahead of any potential threats by implementing an ‘invasive wild pigs’ control strategy, which, in addition to wild boar, includes abandoned pet pigs.*

The current proposal from Manitoba Pork includes a collaboration with Manitoba Agriculture and Resource Development, along with wildlife groups in the province, to assess a range of strategies that could be employed for eradication.

In Manitoba, wild boar sightings can be reported by emailing [wildlife@gov.mb.ca](mailto:wildlife@gov.mb.ca) or by phoning the nearest Manitoba Conservation and Climate office.

### **Ontario allies with the West**

While the wild boar issue in Canada is mostly contained to the prairies, in Ontario, new support to address the problem is coming, thanks to an increasing sense of anxiety and awareness of how easily their populations can spread.

In April 2021, the Government of Ontario issued a draft proposal for review: ‘Ontario’s Strategy to Address the Threat of Invasive Wild Pigs.’ which calls for clear communication, robust policy, management action and strong collaboration between government agencies to address the threat of wild boar in the province.

“We are currently considering input that we received to finalize the strategy,” said Bree Walpole, Senior Policy Advisor, Ontario Ministry of Natural Resources and Forestry

*CONTINUED ON PAGE 18*

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Services. “Wild pigs are not established in Ontario at this time, and we aim to keep it that way.”

As in Alberta, the plan recognizes the serious threats attributed to the spread of wild boar, and it touches on the impact to relevant stakeholder groups, like Ontario Pork. Ontario’s plan also suggests a ban on hunting wild boar, using a regulatory approach under the province’s *Invasive Species Act*. The amendment would still allow landowners to kill wild boar to protect their property from damage, including biosecurity reasons. In addition to directly addressing the issue of hunting, the Ontario plan also takes aim at wild boar in captivity.



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“We want to make sure support is available to anyone who needs to transition,” said Stacey Ash, Manager, Communications and Consumer Marketing, Ontario Pork. “Farmed wild boar poses a risk, but we recognize the need to assist those farmers who will need to phase out these kinds of operations.”

In Ontario, wild boar sightings can be reported by emailing [info@invadingspecies.com](mailto:info@invadingspecies.com) or by phoning 1-800-563-7711.

### No armistice in sight

With relatively weak and inconsistent communication and leadership dominating the discussion around wild boar to this point, the Canadian pork industry will have to remain stationed in the trenches, as wild boar continue to roam. In fact, the firefight may be only just beginning.

While some strategic partners have been providing munitions support, others, sadly, continue to look on from afar with doubt. *Learning the hard way* may be the unfortunate but inevitable result, in some cases, and all cooperative stakeholders should take note and work to rally the critics within the industry to become supporters. Without all stakeholders on the same page, every link in the value chain can be considered at-risk.

With the news of African Swine Fever (ASF) arriving in the Dominican Republic and Haiti, foreign animal disease threats remain the chief concern of the commercial hog industry in North America. It is incumbent upon those within the industry and government to support greater action to combat wild boar, and it is everyone’s responsibility to take a stronger stance on this issue.

What will it require for our country to be able to declare victory on wild boar? Before we get too far ahead of ourselves, it starts with an honest recognition of the task at hand. It is gut-check time, and we have to hit the ground running.

Through research, eradication attempts and public campaigns, we have to examine all angles of this hairy, audacious goal. And while the industry is generally moving in a unified direction, enlisting additional soldiers will be the key to winning not only the latest battle, but the larger war on wild boar in Canada. ■



*At the present time, one can only dream of declaring victory in the war on wild boar, but the campaign continues in earnest.*

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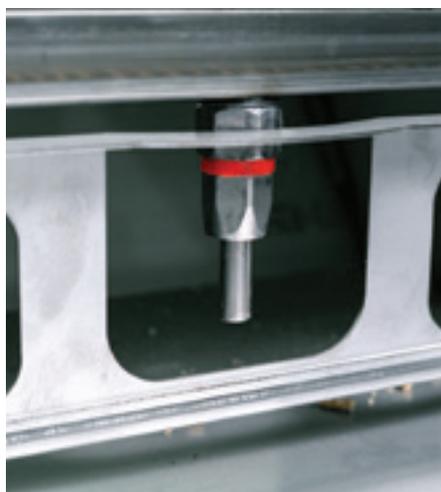
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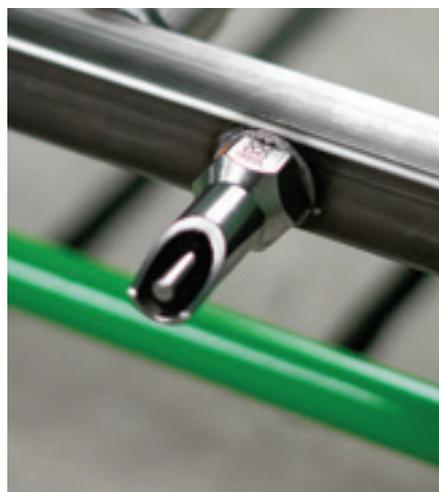


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# High feed costs prompt strategic management

**Bijon Brown**

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



With the right knowledge, producers may be able to ship earlier, lighter, to save on feed costs while fitting their packers' grids and still earning bonuses where possible.

Over the past year, there has been a marked rise in feed costs for hog farmers. With feed costs representing around 63 per cent of the total cost of production – based on Alberta Pork's 2020 Cost of Production study results – 'business as usual' is likely not the best way to look at things.

As the price of feed rises, producers are feeling the pinch, especially if they locked in hog prices months ago that did not take into consideration the higher feed costs seen today. Many producers are searching to find cheaper alternatives to keep their costs in check.

Changes to diets, revisions to herd management practices and even reducing production outright may be some of the options that producers have considered so far. Another option that could be considered is altering the targeted marketing weight.

Maximizing feed savings, while minimizing bonus structure losses, should be the goal of all producers and packers at this time – a win-win approach. When producers proactively reach out to their packers to discuss options, it ensures both sides are working together to achieve a mutual benefit.

## Could shipping earlier save on feed?

As more days are added to the finisher stage, average daily gain decreases. Producers must decide whether feeding the finisher hog longer to achieve incrementally less lean gain is economically sound. This is where the feed cost and hog value determine the direction to take. What happens if hogs are shipped a week earlier than normal?

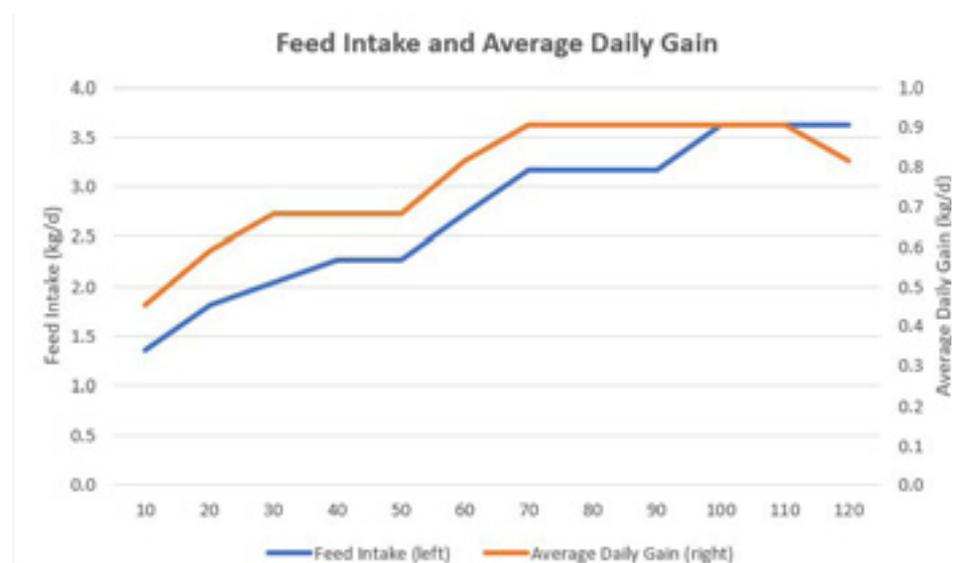
How much feed could be saved versus the dollars potentially lost in hog value?

Alberta Pork's estimates indicate that if a producer targets a 128 kilogram (kg) live weight or around 102 kg dressed, it would take approximately 121 days to feed a hog a total of 319 kg of feed. Targeting an earlier marketing date of about a week could result in the marketing of a 121 kg live weight or 97 kg carcass hog and would result in feed savings of 26 kg per hog.

## Target weight, feed consumption and packer grids

Technically, it is possible to save on feed if there is a slight adjustment to shipping dates, but are the feed cost savings enough to noticeably lower your cost of production and offset any loss in revenue?

Estimating cost savings is only half of the battle. Shipping a week earlier means that hogs will be lighter, and this will have implications for how the lighter hogs fit the grid. Will shipping a lighter hog drastically impact the index



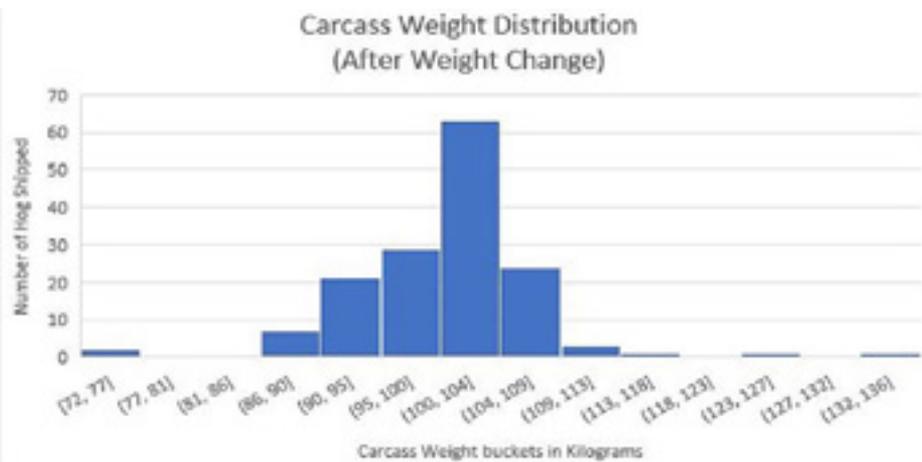
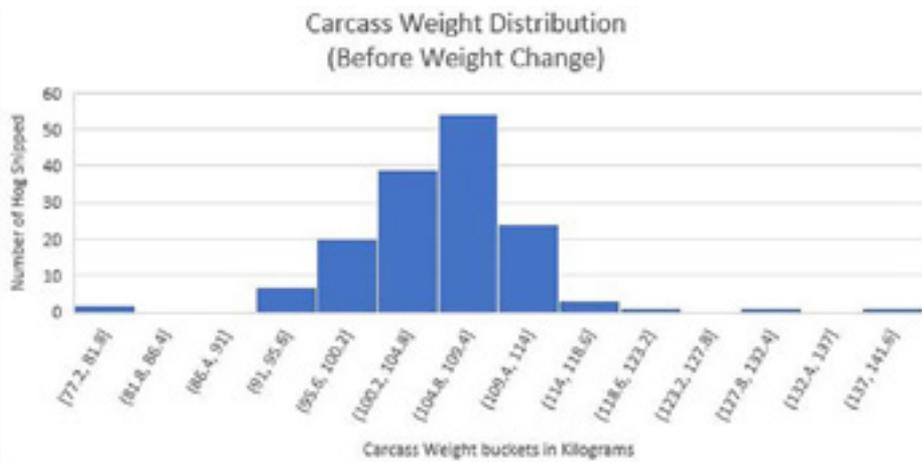
Source: <https://extension.wsu.edu/animalag/content/monitoring-your-show-pigs-progress/>

Around the 100-day mark, average daily gain peaks. Feeding longer could generate unnecessary expenses.

Live Weight	Carcass Weight	Feed (kg)	Total days
110	88	253	100
111	89	257	101
113	90	264	103
114	91	268	104
115	92	272	106
116	93	275	107
118	94	282	109
119	95	286	110
120	96	290	112
121	97	293	113
123	98	301	115
124	99	304	116
125	100	308	118
126	101	311	119
128	102	319	121
129	103	322	122
130	104	325	124
131	105	330	125
133	106	337	126
134	107	340	128

Source: Alberta Pork estimates

A live weight of 121 kg, at 113 days on feed, could represent a 'sweet spot' for some producers.



Shipping a week earlier drops the average carcass weight per load by about 4 kg per hog.

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received? It depends on the packer contract.

To aid in this analysis, actual settlement data was compiled to illustrate the impact on the index of shipping a week earlier. The data used represents more than 170 hogs shipped with an average carcass weight of 105 kg. Shipping a week earlier would, on average, result in a reduction of 5 kg to 100 kg carcass weight.

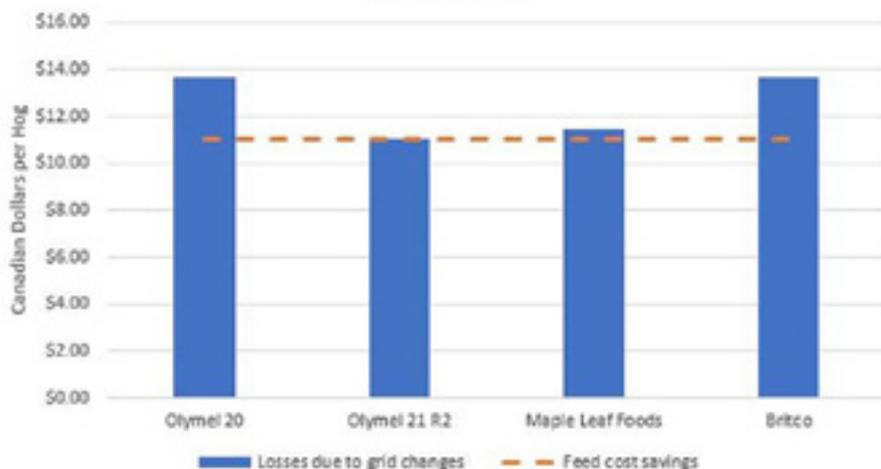
In short, if you are on a grid designed for heavier pigs (such as Maple Leaf Foods' 101 kg grid, the OlyWest 2020 102 Pay plus or the OlyWest 2021 R2 wide grid), then the cost savings of shipping a week earlier would have been wiped out by a loss of premiums due to weight changes in the grid.

However, if you are on a grid designed for slightly lighter pigs (such as Maple Leaf Foods' 97 kg grid, the OlyWest 2020 98 Pay plus or the OlyWest 2021 Ungraded), then cutting back a week earlier could generate some savings.

Out of the \$11.05 per hog of feed cost savings, if you ship a week earlier on the OlyWest 2020 contract grid, changes could claw back around \$6.45 per hog of the savings. If you are on the OlyWest 2021 R2 wide grid or Maple Leaf Foods' 97 kg grid, then shipping lighter hogs would claw back almost \$7.50 and \$7.75 per hog, respectively. Since there is only one Britco contract grid available, there are no changes to the Britco grid impacts.

CONTINUED ON PAGE 22

### Comparison of Feed Cost Savings and Revenue Losses on Heavier Grids



Not all contracts are equal when it comes to reaping the benefits of shipping lighter hogs.

### A tool at your fingertips

Alberta Pork's weekly report for producers often includes feed cost estimates and related commentary.

These feed costs represent the cost of feed for a market hog from birth to slaughter at the date indicated in the report.

However, producers looking to fill their bins today, based on feeding hogs at current prices, should consider using Alberta Pork's feed cost modelling calculator, developed by Gowans Feed Consulting. The calculator, updated monthly, is available on Alberta Pork's website, and a webinar recording is available online for producers who would like to learn how it works. To find the calculator and webinar recording, visit [albertapork.com/our-producer-services/feed-cost-modelling/](http://albertapork.com/our-producer-services/feed-cost-modelling/).

Using the calculator, producers can estimate the impact of altering feed ingredient mixes, manufacturing costs, freight costs or altering target weights. Specifically, manufacturing costs, transport costs and the feed budget for breeding stock can be adjusted, along with the feed-to-gain ratio, the number of days on feed, and

### Feed cost modelling at 129.4 kg live weight

DIET DESCRIPTION	PIG WEIGHT, kg		DAYS ON FEED	ADG, g/day	ADFI, g/day	FEED:GAIN, Ratio	FEED BUDGET, kg/pig	DIET COST, \$/tonne			FEED COST, \$/pig
	Initial	End						Ingredient	Manufacturing	Delivered	
Lactation			28				13.00	\$ 494.7	\$ 512.7	\$ 520.7	\$ 6.77
Dry Sow			116				24.00	\$ 423.8	\$ 441.8	\$ 449.8	\$ 10.80
Gilt Developer							3.00	\$ 436.0	\$ 454.0	\$ 462.0	\$ 1.39
Starter 1	6.5	8.0	7	214	214	1.00	1.5	\$ 876.2	\$ 926.2	\$ 934.2	\$ 1.40
Starter 2	8.0	12.0	12	333	417	1.25	5.0	\$ 654.9	\$ 672.9	\$ 680.9	\$ 3.40
Pre-Grower	12.0	25.0	21	619	1052	1.70	22.1	\$ 518.7	\$ 536.7	\$ 544.7	\$ 12.04
Grower 1	25.0	59.1	39	874	2011	2.30	78.4	\$ 460.1	\$ 478.1	\$ 486.1	\$ 38.12
Grower 2	59.1	94.3	38	926	2686	2.90	102.1	\$ 428.2	\$ 446.2	\$ 454.2	\$ 46.36
Finisher	94.3	129.4	39	900	3240	3.60	126.4	\$ 423.9	\$ 441.9	\$ 449.9	\$ 56.85
<b>SUMMARY</b>											
Sow							40.0				\$ 18.95
Nursery			40	463		1.55	28.6				\$ 16.84
Grow-Finish			116	900		2.94	306.9				\$ 141.33
<b>TOTAL:</b>			<b>156</b>	<b>788</b>		<b>3.06</b>	<b>373.5</b>				<b>\$ 177.13</b>

Source: Alberta Pork

### Feed cost modelling for shipping one week earlier

DIET DESCRIPTION	PIG WEIGHT, kg		DAYS ON FEED	ADG, g/day	ADFI, g/day	FEED:GAIN, Ratio	FEED BUDGET, kg/pig	DIET COST, \$/tonne			FEED COST, \$/pig
	Initial	End						Ingredient	Manufacturing	Delivered	
Lactation			28				13.00	\$ 494.7	\$ 512.7	\$ 520.7	\$ 6.77
Dry Sow			116				24.00	\$ 423.8	\$ 441.8	\$ 449.8	\$ 10.80
Gilt Developer							3.00	\$ 436.0	\$ 454.0	\$ 462.0	\$ 1.39
Starter 1	6.5	8.0	7	214	214	1.00	1.5	\$ 876.2	\$ 926.2	\$ 934.2	\$ 1.40
Starter 2	8.0	12.0	12	333	417	1.25	5.0	\$ 654.9	\$ 672.9	\$ 680.9	\$ 3.40
Pre-Grower	12.0	25.0	21	619	1052	1.70	22.1	\$ 518.7	\$ 536.7	\$ 544.7	\$ 12.04
Grower 1	25.0	59.1	39	874	2011	2.30	78.4	\$ 460.1	\$ 478.1	\$ 486.1	\$ 38.12
Grower 2	59.1	94.3	38	926	2686	2.90	102.1	\$ 428.2	\$ 446.2	\$ 454.2	\$ 46.36
Finisher	94.3	123.0	32	897	3229	3.60	103.3	\$ 423.9	\$ 441.9	\$ 449.9	\$ 46.48
<b>SUMMARY</b>											
Sow							40.0				\$ 18.95
Nursery			40	463		1.55	28.6				\$ 16.84
Grow-Finish			109	899		2.90	283.8				\$ 130.97
<b>TOTAL:</b>			<b>149</b>	<b>782</b>		<b>3.03</b>	<b>352.4</b>				<b>\$ 166.76</b>

Source: Alberta Pork

### Comparative starter to finisher diets

Ingredient	Starter 1 (kg)	Starter 2 (kg)	Grower (kg)	Finisher (kg)	Price \$ / MT
Wheat	405.00	404.00	200.00	0.00	425
Barley	0.00	65.00	597.00	834.00	415
Com	249.00	250.00	0.00	0.00	450
Soybean Meal	200.00	227.00	75.00	0.00	580
Canola Meal	0.00	0.00	100.00	80.00	390
Peas	0.00	0.00	0.00	70.00	460
Sow Micro Premix	5.00	5.00	0.00	0.00	8000
Grower Micro Premix	0.00	0.00	3.00	3.00	8000
Canola Oil	11.00	0.00	8.00	0.00	2650
Whey Powder	70.00	0.00	0.00	0.00	1242.48
Fish Meal	40.00	25.00	0.00	0.00	2650
Limestone	7.00	11.00	10.00	8.00	50.1
Dical (18% Ca-21% P)	8.00	8.00	2.00	1.00	1127.25
Salt - 96%	3.50	3.50	3.50	3.50	83.29
Phytase	0.50	0.50	0.50	0.50	3000
L-Lysine HCL	1.00	1.00	1.00	0.00	1625.75
L-Threonine	0.00	0.00	0.00	0.00	3131.25
D L-Methionine	0.00	0.00	0.00	0.00	3381.75
Oats - Groats	0.00	0.00	0.00	0.00	423.5
<b>Total Must Equal 1000kg</b>	<b>1000.00</b>	<b>1,000.00</b>	<b>1,000.00</b>	<b>1,000.00</b>	
Ration Cost \$/Tonne	675.08	562.07	466.63	436.83	

Source: Manitoba Agriculture and Resource Development, Gowans Feed Consulting, Allibaba.com

Diets can be complicated, which is why producers should seek out more than one source of information prior to making any adjustments.

the initial and ending weights for hogs in each stage of production.

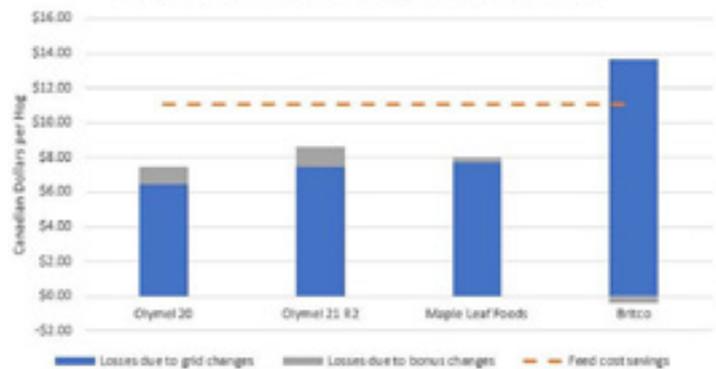
Before making any changes, producers should discuss diets with their nutritionists. The calculator can be useful in the conversation to compare cost impacts, but it should not be taken as a singular source of information. For example, Gowans diets indicate a feed cost of \$177.13, but using rations from Manitoba Agriculture and Resource Development, changing the starter to finisher cells in the 129.4 kg live weight example, feed cost increases by \$4.15 to \$181.28. In the hog industry, where meagre margins mean so much, \$4 per hog could mean the difference between profits or losses.

### Estimating the impact on producer bonuses

Weight changes also impact the bonus structure on shipped hogs. Except for the Britco contract, shipping lighter hogs could decrease net feed cost savings anywhere from \$0.25 per hog on the Maple Leaf contract to \$1.15 per hog on the OlyWest 2021 R2 contract. Due to contract bonuses giving slight preference to lighter pigs under the Britco contract, the bonus impact slightly reduces the net cost losses, but it is not enough to turn it to net cost savings.

Overall, slightly adjusting your shipping date may result net savings from \$2.40 to \$3.60 per hog or \$400 to \$600 per load shipped. It should be noted here that only weights were changed for this analysis. There may also be changes to the yield, fat content and loin depth that could affect both your index and bonuses.

Comparison of Feed Cost Savings and Revenue Losses



All in all, producers could save between \$400 and \$600 per load shipped, depending on their contract.

Ultimately, it boils down to where your cost of production sits relative to your revenue. Alberta Pork's Cost of Production initiative can provide answers.

Alberta Pork estimates that feeding a hog to 102 kg dressed weight (or 128 kg live weight) would cost around \$135.60, based on \$420 per metric tonne of wheat on a 97 per cent wheat-based diet. Shipping a week earlier would result in 26 kg less feed at a cost around \$124.55. This would mean that, if a producer's bins are empty and feed grains were purchased at these currently high prices, the producer could buy 26 kg of feed less per hog, which could result in estimated cost savings of around \$10.37 per hog. Each farm is different, and these numbers may not represent every producer's farm.

This is where a conversation with the hog purchaser (packer) would be a good thing, as a slight reduction in weights could be helpful with minimal grid and bonus losses during times of high feed costs. This could also be a benefit to the packer versus bigger shifts in alternative feed usage.

### Cost and revenue go hand-in-hand

As always, it is important for producers to consider the relationship between cost of production and revenue as the fundamental measure of profitability. As markets change, so should producers' strategies for protecting their bottom lines.

By taking a collaborative approach across the value chain, all stakeholders have an opportunity to support each other in ensuring the pork sector remains sustainable in uncertain times. ■

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# Public trust matters in modern agriculture

*Cam Dahl*

*Editor's note: Cam Dahl is the General Manager of Manitoba Pork. He can be contacted at [cdahl@manitobapork.com](mailto:cdahl@manitobapork.com).*

I find that many farmers react to the words 'public trust' like a cat running across hot pavement. The subject is often viewed as a threat, seen by some as rhetorical cover for those who want to dismantle modern agriculture.

While I understand the reaction, I have a different response. I see public questions on food production as an opportunity. Addressing consumers' questions will help enhance the connection and relationship between farmers and the public. This will also differentiate Canada's farmers – and the food they produce – in both domestic and international markets. It is a key tool to secure sustainable and long-term consumer demand.

Until relatively recently, Canadian agriculture did not have to consider questions from consumers on how their food is produced. Governments established food safety standards, registered farm input products and set environmental regulations. This provided the assurances that consumers were seeking – at least most of them. That has changed. Nowadays, farmers, processors and everyone involved in supporting agriculture production is required to actively engage in telling the story of modern farming.

Answering questions about the origins of food is not a fad that will be gone tomorrow like the latest internet diet. The growing focus by many consumers on food production practices is a true trend that agriculture needs to be ready to meet head-on. Consumer interest will only continue to grow for years to come.

Rather than responding to questions from consumers with skepticism, farmers can embrace them with optimism. That is because, when it comes to tending to the environment in

a sustainable way, and caring for animals humanely, our farmers are world leaders.

We need to do a much better job of telling the good news story of modern agriculture. Decades of land and water stewardship have proven that farming can be considered the oldest 'green job' in many jurisdictions, which is certainly true for Manitoba. For example, pork producers create more food today with less environmental impact than even 10 or 20 years ago.

Over the last 50 years, hog farms have significantly reduced their carbon footprint. Manure that was once thought of as a waste product is now viewed as a valuable organic nutrient. Using new technology, farmers inject manure below the soil so that it is efficiently taken up by crops. The modern practices that have made environmental gains possible are the result of years of investment by farmers, governments and industry.

The same progress has been made in ensuring animals are raised in appropriate housing, that they receive well-balanced and nutritious feed, that diseases are prevented where possible and judiciously treated when not, and that hogs are handled humanely at all stages of their lives. Animal welfare is assured through a combination of rigorous provincial animal welfare regulations and industry standards.

An important component of the standard for animal care is the science-based National Farm Animal Care Council (NFACC) *Code of Practice for the Care and Handling of Pigs* that all Canadian hog farmers are required to follow. The code is backed up by requirements for engagement with a veterinarian, including on-site visits. Adherence to the code is supported by audits, and farmers cannot deliver to federally inspected processing plants unless they are part of a national quality assurance program, like Canadian Quality Assurance (CQA) or Canadian Pork Excellence (CPE). Animal care requirements are regularly revised if scientific research demonstrates that changes in practices are warranted. Consumers can be confident that hogs in Canada are ethically raised.

Modern Canadian hog farmers take pride in their record on mitigating environmental issues and upholding animal care standards. It is also a record that should be a source of pride for consumers. Nutritious, high-quality Canadian pork is raised in a sustainable way that will help ensure the industry's ongoing contributions to our economy and job creation in our local communities. Telling this story consistently and more frequently will help reinforce demand for Canadian pork everywhere. ■



*The Canadian Centre for Food Integrity (CCFI) considers public trust a 'roadmap for success.' Farmers need to buy in to telling their story to preserve consumer confidence at home and abroad.*

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NOV. 23

<b>8:30 a.m.</b>	<b>Host opening speech</b>   Vincent Cloutier, Agr., National Bank
	<b>Trade between canada and china immune to political and diplomatic tensions</b> <b>F</b>   Zhan Su, Ph. D., Université Laval
	<b>Preventing farm-related losses</b> <b>F</b>   Jean-Claude Fecteau, In-Prev Inc.
	<b>Risk management, never without my costs</b> <b>F</b>   Eric Fournier, Agr., Fournier Agri-Conseil and Daniel Leblond, Groupe Porc LV

NOV. 30

<b>8:30 a.m.</b>	<b>Host opening speech</b>   Vincent Cloutier, Agr., Banque Nationale
	<b>North american hog and pork market dynamics</b>   Rob Murphy Ph. D., J.S. Ferraro
	<b>Is quarantining worth it?</b> <b>F</b>   Martin Choinière, DVM, Bureau vétérinaire Martin Choinière DMV Inc. and RP2R sec.
	<b>Quality weaned pig: a cornerstone of growing pig excellence</b>   Nathaniel Stas, B. Sc., M. Sc., PIC USA Inc.
	<b>Understanding better sow feeding behaviour in order to achieve an optimal feed intake</b> Bruno Silva, Ph. D., Federal University of Minas Gerais, Brazil

DEC. 7

<b>8:30 a.m.</b>	<b>Host opening speech</b>   Vincent Cloutier, Agr., Banque Nationale
	<b>Global pig farming situation amidst major health and commercial events</b> <b>F</b>   Jan Peter van Ferneij, IFIP
	<b>A world tour of swine welfare: what's driving change in the major pork producing countries?</b> Yolande Seddon, Ph. D., University of Saskatchewan
	<b>Working with government as a trade association in a very challenging and competitive environment</b> Christopher White, Canadian Meat Council
	<b>The pandemic and its impact on animal protein sales</b> <b>F</b>   Francis Parisien, Nielsen Canada
	— Lunch break —
	— Quebec pork showcase segment —
	<b>Millenials and meat consumption – What is the situation?</b> <b>F</b>   Christian Bourque and Philippe Léger, Léger Marketing

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## Producer political representation remains consistent

Following the most recent federal election in late September, Canada is once again led by a Liberal minority government, as Liberal candidates won 158 seats out of 338 total in the House of Commons. Conservative candidates won 119 seats, with all other parties winning a combined 61 seats. The Conservatives won the popular vote, at 34 per cent, followed by the Liberals, at 32 per cent. All other parties received a combined 33 per cent of the vote. Across the country, rural representation remained mostly unchanged compared to the 2019 federal election, including constituencies where many hog producers live and do business.



Representation for rural Canadians held steady following the most recent Canadian federal election.

In Quebec, Marie-Claude Bibeau (Liberal), Member of Parliament (MP) for Stanstead-Compton, was re-elected. She most recently served as Minister, Agriculture and Agri-Food Canada (AAFC). In Ontario, Lianne Rood (Conservative), MP for Lambton-Middlesex-Kent, was also re-elected. She most recently served as Opposition critic for AAFC.

In B.C., Brad Vis (Conservative), MP for Mission-Matsqui-Fraser Canyon, was re-elected in the region where most of the province's producers are found. In Alberta, Glen Motz (Conservative), MP

for Medicine Hat-Cardston-Warner, was re-elected in the constituency with the greatest proportion of commercial producers in the province, especially Hutterite colonies.

In Saskatchewan, Cathay Wagantall (Conservative), MP for Yorkton-Melville, and in Manitoba, Ted Falk (Conservative), MP for Provencher, were both re-elected in regions where much of Saskatchewan's and Manitoba's hog production and processing takes place.

In Nova Scotia, Stephen Ellis (Conservative), MP for Cumberland-Colchester, was elected, flipping that constituency for the Conservatives after two terms of Liberal rule. And in PEI, Lawrence MacAulay (Liberal), was re-elected for a 10th time. He served as Minister for AAFC prior to Bibeau.

## Ag leaders express election priorities

Leading up to the most recent Canadian federal election, the Canadian Pork Council (CPC), the Agricultural Producers Association of Saskatchewan (APAS) and Keystone Agricultural Producers (KAP) of Manitoba published a list of political priorities for producers, while the Canadian Meat Council (CMC) published a list of priorities for packers. Alberta Pork published on its website a series of

articles describing constituencies where producers live, the candidates in those constituencies and a summary of policy proposals.

The Canadian Federation of Agriculture (CFA) hosted a live debate in early September, streamed online, for the agriculture leaders of the Bloc Québécois, Conservative Party, Liberal Party and New Democratic Party. Representing regions across the country were Marie-Claude Bibeau, Liberal candidate for Compton-Stanstead (Quebec); Dave Epp, Conservative candidate for Chatham-Kent-Leamington (Ontario); and Alistair MacGregor, New Democratic candidate for Cowichan-Malahat-Langford (B.C.).

On the topic of labour, as it concerns the Temporary Foreign Worker Program and processing shutdowns related to COVID-19, Bibeau, Epp and MacGregor all expressed their support for expanding and simplifying the program as a way to create greater resiliency in the value chain.

On the topic of carbon pricing, Bibeau referenced offering "half a billion dollars to help producers have the means to pay for technology to dry their grain and heat their facilities." Epp responded, "none of those innovative environmental responses to the challenges were done in the context of a rising carbon tax,"



The Canadian Federation of Agriculture's (CFA) debate for agricultural leaders provided an opportunity for candidates to directly address issues of concern.

stipulating, “the industry will respond far better to incentives than to the stick.” MacGregor affirmed his support for farm-based carbon tax exemptions.

On the topic of farm anti-trespassing legislation, Epp and MacGregor expressed their support for amending the federal *Health of Animals Act* to recognize threats to farm biosecurity; however, Bibeau struggled to clarify her position on the matter, suggesting that existing trespassing legislation is sufficient. When asked if improved legislation is needed, she answered, “No.”

“Trespassing on farms is already illegal. The enforcement is the responsibility of the police. The CFIA [Canadian Food Inspection Agency] is there with their inspectors – their scientists and vets – and what we can ask them is to follow up on biosecurity,” said Bibeau.

In response, Epp said, “Trespassing may be illegal, but it has not stopped the incidents from occurring... The mental health of farmers, and the biosecurity of our industry – African Swine Fever and a whole host of avian diseases – can be spread by this kind of activity. Protesting is a fundamental Canadian right; trespassing and disruption of farming activities is not, and it needs to be criminalized.”

When asked about the existing tax structure surrounding the intergenerational transfer of farms, Bibeau, Epp and MacGregor all expressed their support for making the process easier. However, Bibeau voted against Bill

C-208, “Tax Changes for Intergenerational Business Transfers,” which was passed into law in late June with support from the Bloc Québécois, Conservatives and New Democrats. The now-law provides tax relief when it comes to transferring farm ownership between members of the same family.

“The Liberal Party supports the intergenerational transfer of farms,” said Bibeau. “It was part of my mandate as minister... Unfortunately, the way the legislation was put forward, was incomplete. That’s why we didn’t support it.”

The topic of business risk management was addressed primarily in the context of this year’s western Canadian drought conditions, in terms of offering support to cattle and grain producers, but unrelated to hog farmers.

### **New ag ministers in Manitoba and Ontario**

The Governments of Manitoba and Ontario announced cabinet shuffles in mid-July, resulting in the appointment of new agriculture ministers for those provinces. A cabinet shuffle took place around the same time in Alberta, with no impact on the ag portfolio.

Manitoba Pork congratulated Ralph Eichler on his return to the role as Minister of Manitoba Agriculture and Resource Development, replacing Blaine Pedersen.

“Minister Eichler has a strong grasp of agriculture and rural issues,” said Rick Préjet, Chair, Manitoba Pork. “With

about 14,000 Manitobans depending on our sector to make their living, we look forward to continuing our strong and collaborative relationship with the provincial government as they recognize the importance of the hog sector.”

In Ontario, Lisa Thompson was named Minister of Ontario Agriculture, Food and Rural Affairs, replacing Ernie Hardeman.

### **Olymel strike ends**

Following a nearly four-month stalemate, with 150,000 backlogged market hogs on-farm, Olymel and the workers’ union at the company’s Vallée-Jonction plant, southeast of Quebec City, struck an agreement for the first time in mid-August to potentially resume operating the plant, which had been closed since late April.

In response to the agreement, *Les Éleveurs de porcs du Québec* (Quebec Pork), characterized the agreement as a “sigh of relief,” after previously suggesting that producers could “hit a wall,” with the potential for widespread euthanasia if a solution could not be achieved. Two days after the tentative agreement was proposed, 57 per cent of union members voted against the terms, further prolonging the strike and worsening the consequent backlog.

“The pressure on farmers and their families is enormous at the moment,” said Marcel Groleau, President, Agricultural Producers’ Union (UPA) of Quebec. “Financial losses accumulate, their animals suffer, they are short of solutions and at the end of their

*CONTINUED ON PAGE 28*

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resources. We feel the distress is growing among some, when many believed the conflict was settled.”

After the agreement was rejected, Quebec Pork and UPA appealed to Quebec Premier François Legault to intervene, referencing the provincial government’s obligation to “taxpayers who, since last May, have held a stake in Olymel of \$150 million to enable the company to carry out projects worth \$315 million.”

In the week following the initial rejection, Jean Boulet, Minister, Quebec Labour, Employment and Social Solidarity, expressed interest in having an agreement reached promptly.

“The situation is critical for pig farmers, and we will not accept another episode of food waste,” said Boulet. “The parties must come to an agreement. It has to stop.”

Following his statement, Boulet held a meeting with management from Olymel and union representatives, and after a re-negotiation, a new deal was struck in late August, with 78 per cent support from union members. Slaughter activities resumed in early September.

“Our producers paid the price for this strike, and it will continue until everything is back to normal,” said David Duval, President, Quebec Pork. “In the future, avenues will have to be considered so that situations like this do not happen again.”

Since the start of the strike, Olymel had been diverting some of its Quebec hogs to plants in Ontario and the U.S., with Ontario hogs being diverted to the U.S. and the company’s Red Deer, Alberta plant – halfway between Edmonton and Calgary.

Also in early September, Olymel announced the completion of \$3 million worth of renovations at the company’s Ange-Gardien plant, southeast of

Montreal. The plant was acquired through Olymel’s purchase of F. Ménard in July 2019. The new investment enables a second slaughter shift at the facility, expected to create 100 new positions for workers. Shortly thereafter, the company announced the closure of its Henryville plant, a former F. Ménard site also southeast of Montreal, scheduled for mid-November. The plant’s nearly 30 employees will be offered positions in other Olymel locations.

### Saskatchewan sow plant goes ahead

In mid-September, Donald’s Fine Foods announced a nearly \$13-million renovation to the former XL Foods beef plant in Moose Jaw, Saskatchewan to serve as a cull sow processing facility. A study to evaluate the feasibility of the plant’s conversion was conducted starting in May 2020.

“A lack of processing capacity has meant that western Canadian producers have been exporting sows to the U.S.,” said Dave Dewhurst, plant manager of the new facility. “We look forward to working with local producers to process sows closer to the farms where they are raised.”

The plant will be the first large-scale sow operation commissioned in western Canada in two decades and is expected to inject employment income, create growth and opportunities in the local economy, reduce the industry’s transportation

carbon footprint, and create a positive return for local producers.

Donald’s Fine Foods owns the Britco hog slaughter plant in Langley, B.C. and the Thunder Creek Pork plant in Moose Jaw, not far from the proposed sow plant site. The former beef plant at that site was closed in late 2010.

### Quebec packer receives federal funding

The Government of Canada announced in late July an investment of up to \$5 million to help CBCo Alliance increase capacity at its new hog processing facility in Les Cèdres, Quebec, southwest of Montreal.

“This is a significant development for the local economy and a big help to the processing capacity challenges we have experienced over the past number of years,” said Marie-Claude Bibeau, Minister, Agriculture and Agri-Food Canada. “With this investment, CBCo Alliance is setting up a state-of-the-art facility to increase hog processing capacity here in Quebec, which helps our producers continue to deliver quality pork products to our grocery shelves.”

The investment supports infrastructure upgrades, including the purchase of equipment to increase productivity. Plant upgrades will help the company process up to 20,000 hogs per week by 2024. The new facility began operations in



Donald’s Fine Foods will convert this former beef plant to a sow processing facility, opening next year.

November 2020 and is expected to create a total of 250 jobs.

## Costco expands Canadian pork offerings

Starting in late July, Costco Canada began carrying vacuum-packed organic ground pork from DuBreton of Rivière-du-Loup, Quebec – approximately 180 kilometres northeast of Quebec City. The company's vacuum-packed organic sliced ham is already found at some Costco locations in eastern Canada.

“This is good news for DuBreton but also for the entire organic sector, which is significantly increasing its access to Quebec consumers,” said Vincent Breton, President, DuBreton. “Being distributed in supermarkets and warehouse stores confirms that we made the right choice by concentrating our production on organic products.”

More frequently, Costco Canada sources its vacuum-packed fresh whole loins, tenderloins and racks of ribs from U.S. packers, while certain processed products from federally inspected Canadian packers – including Olymel, Maple Leaf Foods, Sofina Foods and Harvest Foods – are also available.

In 2017, Costco Japan replaced its U.S. chilled pork with Canadian pork, resulting in a 300-tonne monthly increase in sales. In early August, Costco Japan hosted its latest ‘Canada Fair,’ featuring Canadian product offerings for Japanese customers, including pork, maple syrup, honey and other goods.



Fresh pork from Canada is not a common sight at Costco's Canadian locations, but that reality may be changing with the introduction of DuBreton organic ground pork.

## Canada Pork adds to talents and strengths

CanadaPork announced in early August that Jeremy Yim had joined the organization as Domestic Marketing Manager, responsible for promoting domestically produced pork to Canadian retailers.

Yim comes to Canada Pork with more than seven years' experience in the red

meat sector, recently serving as Ontario Pork's retail and foodservice marketing specialist, as well as Sofina Foods' national retail and foodservice account manager. He will operate out of Toronto, reporting to Kevin Mosser, Senior Director, Global Marketing. Yim replaces Mosser, who took on his current position earlier this year.

CONTINUED ON PAGE 30

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Jeremy Yim, Sophie Lamontagne and Kevin Mosser

In early April, Sophie Lamontagne was promoted to Senior Director, Strategic Operations, after serving as Director, Operations and Communications since September 2018. In addition to her current leadership of Canada Pork's communications and facilitation of events delivered nationally and globally, Lamontagne will be focussed on strategic planning for the organization.

### Pork import levy draws closer

Canada's Pork Promotion and Research Agency (PRA) was formed in November 2019 to support the competitiveness and sustainability of the pork sector by enabling the development and implementation of promotional and research activities.

Part of the PRA's mandate is to impose a levy on imported pork products. Imports, especially from the U.S., may be an attractive option for domestic retailers looking to maximize their margins by positioning less expensive foreign pork products against more expensive pork products from Canada.

In late July, the PRA submitted its proposal to the Farm Products Council of Canada (FPCC) as a first formal step toward creating the levy. Following a series of internal procedures to review the proposal and associated business plan, the levy is expected to be approved by the Government of Canada soon.

### North America reports ASF cases

The U.S. Department of Agriculture (USDA) confirmed in late July that African Swine Fever (ASF) was detected in samples collected from pigs in the Dominican Republic. In late September, Haiti reported its first case of ASF on a 2,500-head hog farm in an area near the Dominican Republic border. The disease would have devastating consequences for the commercial swine industry in Canada and the U.S. if it was detected in either country.

"While much progress has been made, there remain opportunities to eradicate wild pigs, enhance biosecurity and develop the response policies and programs that will be needed should there ever be a Canadian outbreak [of ASF]," said Rick Bergmann, Chair, Canadian Pork Council (CPC). "We look forward to collaborating with the Canadian government to further strengthen our capacity to maintain the health of our Canadian pig herd and pork industry."

The Dominican Republic and Haiti share the island of Hispaniola, in the Caribbean. Hispaniola is located about 100 kilometres away from Puerto Rico – an unincorporated U.S. territory. International air traffic between the Dominican Republic and Canada is considered a risk factor for spreading ASF. Multiple Canadian airlines operate direct flights from Toronto Pearson Airport to Punta Cana, Dominican Republic – a popular vacation destination – several times weekly. There are no direct flights between any Canadian airports and Haitian airports; however, the migration of people from Haiti to the U.S. over land via Mexico could be a transmission concern.



Until July 2021, North America had been free of African Swine Fever (ASF) since a one-off case in Cuba, in 1971. The virus has since been discovered in the Dominican Republic and Haiti.

## Germany reports first ASF cases on-farm

In-mid July, the German government reported that three farms had experienced confirmed cases of African Swine Fever (ASF). Since September 2020, Germany has discovered more than 2,000 ASF cases in native Eurasian wild boar carcasses, after the disease entered the country from neighbouring Poland.

Following the first cases in wild boar, many global markets closed to German pork, including China, Japan, South Korea and the Philippines. Vietnam has since reopened. In an effort to contain the disease spread, Germany has erected fencing around areas of concern, and state officials in Brandenburg are appealing to the country's federal government and the European Union (E.U.) for additional resources. In mid-September, Brandenburg state officials announced it would take another five years for the region to become ASF-free.

As Germany struggles to deal with the ASF influx, pork industry stakeholders in Canada are looking on with caution. If ASF were to arrive in Canada, international buyers would almost certainly ban Canadian pork. Canada currently has ASF zoning agreements with the U.S., E.U., Singapore and Vietnam, and the industry continues to eye such agreements with key partners like Japan.

## Long-time rare pig breeder passes away



Wayne Collingridge

In late July, long-time rare pig breeder Wayne Collingridge passed away at the age of 78-years-old. Collingridge was familiar to many in Manitoba, where he raised purebred pigs for more than half a century near Roseisle – about 110 kilometres southwest of Winnipeg.

Collingridge was a farmer and entrepreneur, dedicating most of his life to the purebred hog industry, helping to preserve the existence of many heritage breeds in Canada. He ran semi-annual auction sales and marketed hogs worldwide for at least five decades, establishing a purebred Berkshire meat marketing network with clients in Japan.

## Ontario Pork supports food education

In collaboration with Ontario Pork, in late August, AgScape launched its latest in-classroom educational resource – a teachers' guide for grades five to 10. Topics covered include the history of pig farming, modern pig production, and the economic and environmental impacts of the sector.

“While healthy, sustainable food is essential to all of us, the vast majority of Ontarians have little or no direct connection to farming,” said Stacey Ash, Manager, Communications and Consumer Marketing, Ontario Pork. “That disconnect can allow misinformation to take root and cause people to question the quality and value of food businesses that they don't fully understand.”

AgScape is looking forward to sharing this new resource with students and teachers.

“A key aspect of our shared missions is to engage and inspire the next generation about the agriculture and food industry so that they can make informed decisions and consider the diverse career opportunities within the sector,” said Taylor Selig, Executive Director, AgScape. “This resource will play an important role in bridging that gap within the classroom.”

## Federal cost recovery threatens pork insulin

Health Canada's cost recovery framework for fees set under the *Food*

*CONTINUED ON PAGE 32*

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and Drugs Act is a method by which the federal government has sought to recuperate the regulatory cost of some drugs since 1995. A recent change is set to increase the annual licensing fee from \$2,000 to \$30,000 for the only supplier of porcine insulin in Canada: Wockhardt, which manufactures the product in the U.K. and currently exports it to Canada at no net profit.

Don Davies (New Democratic), Member of Parliament for Vancouver-Kingsway (B.C.) sent an open letter to Patty Hajdu, Minister, Health Canada in late July, urging her government's support for "immediate action" related to maintaining a stable and affordable supply pork-based insulin, which is



More than 400 Canadians rely on porcine insulin to treat diabetes, but a proposed federal government fee hike threatens the sole manufacturer's ability to export the drug into Canada.

exclusively relied upon by more than 400 known Canadians for the treatment of diabetes.

Until the 1990s, biosynthetic insulin was not commercially available in Canada. Over time, it has taken a

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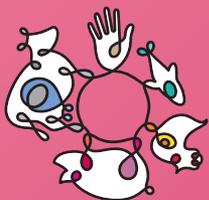
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dominant position in the insulin market, but individual needs have made animal-sourced insulin a preferred choice for some users.

### **Former B.C. politician discourages animal ag**

Paul Manly (Green), former Member of Parliament for Nanaimo-Ladysmith (B.C.), introduced a motion in the House of Commons in late June, demanding “the government should phase out subsidies to industrial-scale animal agriculture, including for crops grown strictly for livestock feed.”

The text of the motion introducing the bill asks the government to recognize that “industrial animal agriculture contributes significantly to climate change above and beyond the direct emissions impact of livestock, such as deforestation to create grazing land and grow feed crops and other land-use factors.” The motion adds, “the Canadian government currently provides substantial direct subsidies to the industrial animal agriculture industry.”

As such, the bill asks to “revise the *Greenhouse Gas Pollution Pricing Act* to bring the GHG emissions of the animal agriculture industry under its provisions.” The motion cites the United Nations Food and Agriculture Organization (UNFAO), which suggests “the emissions impact of livestock alone represents 14.5 per cent of all anthropogenic GHG emissions.”

Manly was asked to provide clarity on his assertions regarding deforestation and subsidies, as they relate to Canadian livestock production, but he declined to comment. In the most recent federal election, Manly lost his seat. The Green Party’s 2021 platform on agriculture favoured a “transition away from the industrial model controlled by large agri-business and toward locally and regionally based, ecologically sound

and humane agriculture and food systems.”

### **Cell-based meat under the microscope**

The U.S. Department of Agriculture’s (USDA) Food Safety and Inspection Service (FSIS) announced in early September a review of labelling requirements for cell-based meat and poultry products. The public comment period is open until early November.

The use of terminology around products resembling meat has been a hot topic for the conventional meat industry in recent years, as simulated products may employ deceiving claims to create equivalency between real meat and cell- or plant-based alternatives.

Starting in November 2020, the Canadian Food Inspection Agency (CFIA) conducted a similar survey, with results released in June 2021. Of the approximately 2,500 people surveyed, 52 per cent self-identified as purchasers of meat or poultry products, while 74 per cent indicated they are purchasers of simulated meat or poultry products. The survey response base may be inconsistent with the broader Canadian consumer base, as polling results in recent years from Dalhousie University suggest that more than 90 per cent of Canadians

regularly eat meat, while only about two per cent consider themselves ‘vegans.’

Like CFIA, USDA-FSIS will use its survey results to inform future policy around labelling. A full CFIA report is expected to be delivered this fall, but the timeline for the USDA-FSIS report is unknown.

The announcement of the USDA-FSIS survey comes on the heels of an announcement by CellX – a Chinese lab-grown meat developer – which showcased its new cell-based pork for investors in Shanghai in early September. The company aims to be cost-competitive with conventional meat by 2025.

### **California Prop 12 worries U.S. producers**

In November 2018, more than 63 per cent of voters in California supported Proposition 12, which sets new housing space requirements for barn-raised livestock, including hogs. Some conditions of Prop 12 went into effect at the start of 2020, while the full set of requirements will go into effect at the start of 2022.

As in Canada, roughly one-third of U.S. producers have already converted to group sow housing, but for those



*A piece of cell-based pork from China's CellX. Products like these are currently under regulatory review in Canada and the U.S.*

who have not, profitability barriers make this capital cost a challenging endeavour. Prop 12 effectively bans the sale of pork in California that does not comply with the new requirements, representing the vast majority of the pork currently sold on the retail level in the state.

In late August, researchers from the University of California released a study on the potential impacts of Prop 12. The study places the cost increase for farmers at \$15 per compliant hog. Practically speaking, "Prop 12 will result in only slightly fewer sows in stalls and a bit more space for sows already in group housing. Thus, impacts on sow housing will be much more modest than claimed." Additionally, the study authors concluded, "We estimate the cost of Prop 12 to California consumers is \$320 million annually, through paying about eight per cent more for uncooked pork cuts and consuming about six per cent less of that pork."

The U.S. National Pork Producers Council (NPPC) characterizes Prop 12 as "arbitrary production standards" that are "unscientific." In February 2021, the North American Meat Institute (NAMI) filed a legal challenge with the Supreme Court of California to delay the implementation of the new requirements, while allowing U.S.

producers time to adjust. The challenge was struck down in June. NPPC and NAMI, along with the American Farm Bureau Federation, unsuccessfully tried to sue the State of California prior to the supreme court challenge.

## Rich Smith joins Design Concrete

Paul Dolmage, Agricultural Sales and Service Manager, Design Concrete Inc. is pleased to announce that Rich Smith, P. Eng., will join Jim Haggins as a Sales Representative for western Canada.

"Rich has worked in the agriculture industry for more than four decades, bringing an impressive amount of knowledge and experience," said Haggins. "From his many connections in the livestock sector, we know he will be a great business asset and advocate for our products and services."

In the course of his career as an agricultural engineer, Smith has worked extensively on policies, regulations, approvals, design, construction and management of livestock housing. After 16 years with the former Alberta Agriculture and Rural Development, he joined the private sector in 1997 and has worked in several capacities as an engineering and environment manager for companies such as Sunterra Farms



Rich Smith

and Elite Swine. From 2007 until 2020, Rich served as Executive Director of Alberta Beef Producers.

Based in Seaforth, Ontario, Design Concrete specializes in custom manufacturing of hog slats to replace aging infrastructure as well as new sow and grow-finish housing. They deliver both large and small orders to production sites. Since 1979, the company's CSA-certified precast facility has produced both wet cast and dry cast products. The company appreciates the widespread support of producers in western Canada in addition to its Ontario base. ■

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# Pork's place in an increasingly plant-based world

Mary Ann Binnie

Editor's note: Mary Ann Binnie is the Nutrition Manager for the Canadian Pork Council (CPC). She can be contacted at [binnie@cpc-ccp.com](mailto:binnie@cpc-ccp.com).

Recent promotion of plant-based protein foods stems from growing international pursuit of 'sustainable healthy diets' to address climate change and chronic disease concerns.

However, many plant-based protein products entering the market are highly processed and are arguably not healthier alternatives to animal-based protein foods, such as pork. Makers of simulated meat have used semantics to their advantage, playing up the notion that these products are plant-based and, therefore, somehow better.

Health Canada released dietary guidance in 2019 encouraging Canadians to choose plant-based protein foods more often. The cover of Canada's Food Guide still includes

*CONTINUED ON PAGE 34*



At this Canadian grocery store, imported and domestic plant-based meat alternatives are found in the frozen section of the meat department, alongside other processed products. Some stores integrate these options directly within the fresh meat cooler, but the shelf life is shorter. Low sales volumes can lead to waste.



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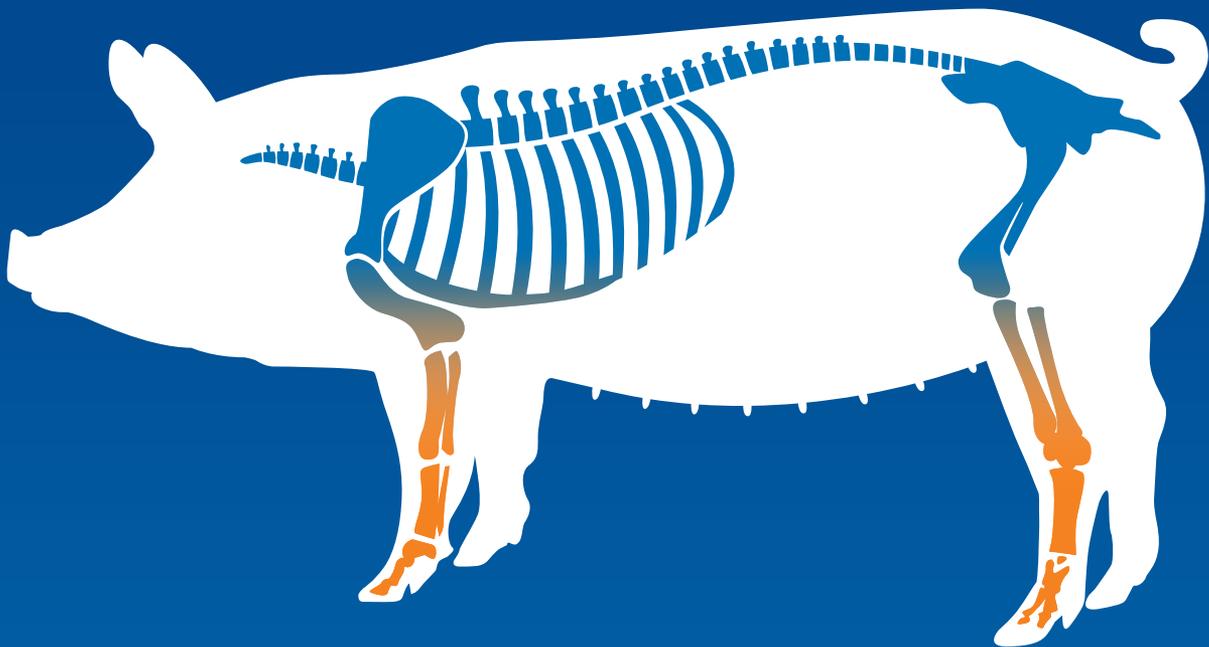
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animal-based proteins – meat, poultry, fish, eggs and milk products – however, they are given little prominence compared to previous versions. Additionally, milk products are now considered part of the ‘protein’ food group, along with meat and alternatives. Plant protein sources – such as tofu, lentils, beans, peas, nuts and seeds – make up roughly half of the ‘protein’ group visually.

### Impact of plant-based alternatives on Canadian food supply

In June 2021, Health Canada released its ‘Food and Nutrition Highlights 2020’ annual report. This report provides an overview of what this federal agency is doing to make it easier for Canadians to pursue healthier choices. As part of the report, Health Canada is tracking the Canadian market availability of foods high in nutrients of public health concern

– including saturated fat, sugars and sodium – to assess the impact of the agency’s ‘Healthy Eating Strategy’ on the nutritional quality of the Canadian food supply.

Health Canada examined how the Canadian food supply changed after the launch of the current food guide. It looked at the impact of plant-based foods on Canadians’ dietary choices, using recent market research data. Between the launch of the current food guide in January 2019 and December 2020, research showed that 120 new plant-based products entered the Canadian market. Of these new products, they found that 15 per cent were processed meat, fish or egg alternatives; 30 per cent were dairy alternatives; 26 per cent were snack foods; and 11 per cent were desserts.

Many of the new plant-based alternative were high in sodium, saturated fat or sugar, often containing 15 per cent or more of

the recommended daily value for these nutrients of concern. The 2020 annual report states: “Although plant-based, many of these products are not in line with Canada’s Food Guide recommendations... More than half of the new plant-based, processed alternatives to meat, fish or eggs were high in sodium... Moreover, more than one-third of dairy alternatives, snacks and processed meat, fish or egg alternatives were high in saturated fat... In addition, the majority of the plant-based desserts were high in sugars and saturated fat.”

There is clearly reason for concern in terms of the health implications of these new food products. Processed plant-based meat alternatives are often not the healthier options they are marketed to be. This trend is reminiscent of the marketing of lower-fat food products that are often high in sugar, and the marketing of foods made with trans fats following Health Canada’s national dietary guidance to reduce total fat and saturated fat consumption back in the 1990s.

### Impact of pork on Canadian diets

A recent study conducted at the University of Toronto found a significant number of Canadian adults do not meet the dietary intake recommendations for several essential nutrients. Study findings noteworthy to meat consumption included:

- **Iron:** Nearly 30 per cent of women between the ages of 19- and 50-years-old did not get enough iron from their diet. Iron is critical for women during childbearing years and to prevent anemia – a lack of healthy red blood cells to carry oxygen to body tissues.
- **Zinc:** Between 20 per cent and 40 per cent of both men and women are deficient in zinc, and the risk of inadequate intake increases with age. Zinc is essential for healthy pregnancies, normal brain function and resistance to infection.

CONTINUED ON PAGE 40



The evolution of Canada’s Food Guide shows how food groups have changed. Meat, poultry, fish, eggs and milk products were once prominently featured, but their positioning has changed from 1944, 1977, 1992, 2007 to 2019.

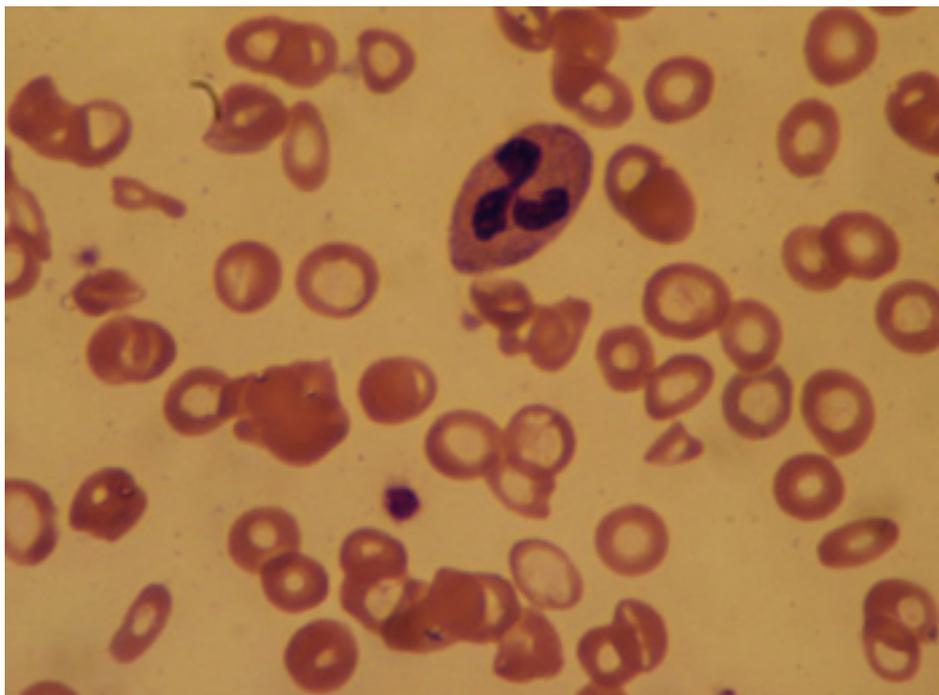
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Nearly one-third of adult women in Canada are deficient in iron. Consuming red meat – like pork – helps meet this dietary need. Iron deficiency can lead to anemia, shown in this magnified blood smear.

- **Magnesium:** Nearly two-thirds of women and half of men are deficient in magnesium. Magnesium is important for blood pressure regulation. More than two-thirds of Canadian seniors have high blood pressure. High blood pressure is the number-one risk factor for stroke.
- **Potassium:** The average intake of potassium for all Canadian demographics is considered inadequate. Like magnesium, potassium helps regulate blood pressure.

This study is extremely useful to help us understand meat's valuable role in the diets of Canadians. Pork is a naturally nutrient-dense protein food that contains several of the nutrients that many Canadians are lacking in their diets. A relatively small portion of pork can go a long way toward helping Canadians meet these specific nutrient needs.

Steering Canadians toward eating more whole, nutrient-dense foods – like pork – and away from highly processed, nutrient-poor foods can help address

the nutrient shortfalls identified in the study.

### Plant and animal proteins are not equal

Plant and animal proteins are not nutritionally equivalent. Animal proteins contain all nine essential amino acids in amounts that can be used to grow

and maintain our bodies. These essential amino acids remain available for absorption and protein synthesis even after digestion. Evidence suggests high quality animal-based proteins stimulate muscle protein synthesis more effectively than plant-based proteins.

Recent studies indicate that there are large differences in the nutrients and metabolites found in ground meat versus plant-based substitutes. As researchers point out, these should not be considered as nutritionally similar or interchangeable, despite comparable nutrition facts.

Processed plant-based veggie patties or 'grinds' generally contain added fat in the form of vegetable or coconut oils. If these added fats are grouped together, they may be the largest component by weight.

A substantial body of evidence shows the nutrients in red meat – such as high-quality protein, iron, zinc and B-vitamins – play a powerful role in nourishing Canadians, from fueling physical activity and helping manage weight, to developing cognitive skills and aging vibrantly. Pork provides nutrients that can be difficult to obtain in adequate quantities from plant-based foods alone.

	<h3>Lean ground pork</h3>
	<p><i>Ingredient: Pork</i></p>
	<h3>Simulated meat burger</h3>
	<p><i>Ingredients:</i> Water, pea protein, expeller-pressed canola oil, refined coconut oil, rice protein, natural flavors, dried yeast, cocoa butter, methylcellulose, and less than 1% of potato starch, salt, potassium chloride, beet juice color, apple extract, pomegranate concentrate, sunflower lecithin, vinegar, lemon juice concentrate, vitamins and minerals (zinc sulfate, niacinamide [vitamin B3], pyridoxine hydrochloride [vitamin B6], cyanocobalamin [vitamin B12], calcium pantothenate).</p>

Ultra-processed foods – such as simulated meat – can be deceptive in terms of their dietary value. Unlike imitation plant-based products, pork provides a naturally rich and complex nutritional profile, along with complete protein, without the need for additives.

## **A balanced diet, for people and planet**

As one of the most nutrient-dense foods available, pork makes an important contribution to the food security and diet quality of Canadians.

The global push to reduce meat consumption has led to an increase in plant-based simulations in response to mounting international calls, public health policy and marketing messages to choose more plant-based proteins to address climate change and chronic disease concerns. However, processed, plant-based, simulated meat products are not necessarily healthier than nutrient-dense, single-ingredient animal protein foods, such as pork.

Most Canadians do not eat enough

vegetables, fruits or fibre. So, encouraging more consumption of whole, minimally processed plant foods may provide benefits in terms of the prevention and management of certain chronic diseases. However, increasing plant-based foods does not need to mean replacing meat. In fact, pork adds many essential nutrients to a plant-based diet.

Research indicates that, since animal- and plant-based protein foods differ in their nutrient profiles and make different contributions to diet, they should not be viewed as nutritionally interchangeable.

Animal- and plant-based foods provide different nutrients that are complementary. Food synergy makes them better when consumed together.

Villainizing whole foods – like red meat – confuses and distracts from the priority nutrition concerns of Canadians, which are contributing to the rising rates of obesity and other chronic diseases. The age-old advice of eating a balanced diet continues to make sense for most Canadians, and it leaves room on the plate for both animal- and plant-based foods. ■



*Eating minimally processed plant- and animal-based foods is central to a healthy diet.*

# Evaluating the merits of creep feeding

Dan Columbus & Jade Sands

*Editor's note: Dan Columbus is a research scientist at Prairie Swine Centre. He can be contacted at dan.columbus@usask.ca. Jade Sands is a former research assistant at Prairie Swine Centre.*

## Introduction

Creep feeding is a common practice throughout the pork industry with many perceived benefits, including provision of nutrients, higher weaning weight and improved transition at weaning; however, these benefits only occur if the creep feed is consumed.

It is estimated somewhere between four and 40 per cent of piglets will consume creep feed during lactation. Intake of creep feed is usually low and highly variable among pigs, with smaller piglets having higher intake

and larger piglets having little to no consumption. The achieved benefit of creep feeding on growth performance in the lactation and nursery period remains inconsistent.

The benefits of providing creep feed may have less to do with provision of nutrients and more to do with exposing piglets to a dry feed and enhancing exploratory behaviour. Dietary diversity, such as particle size variation, has been shown to have a greater influence on pre-weaning feed intake than dietary flavour. Therefore, it is possible that provision

of expensive creep diets is not necessary to achieve creep feeding benefits related to weaning weight and overall performance. Feeding simple diets, such as a typical lactation diet, may be sufficient. Identifying less expensive alternatives will help to reduce cost of production in the pork industry.

## Methodology

A total of 50 sows and litters with between 12 and 14 piglets per treatment were randomly assigned to one of four creep feeding treatment protocols. The protocols were:



*'Creep feeding' refers to the practice of providing prepared feed to piglets, but is the practice helpful at all?*

1. No creep feed provided
2. Complex creep feed provided
3. Simple creep feed provided
4. Combination of complex and simple creep feed provided

The complex creep consisted of a standard nursery starter diet, and the simple creep consisted of a standard lactation diet. For the combined treatment, one feeder contained the complex creep and one contained the simple creep.

Sows were moved into the farrowing room approximately five days prior to the expected farrowing date and placed on a commercial lactation feed. Upon farrowing, total pigs born alive and litter weight were recorded. Within a day of farrowing, piglets were cross-

fostered, if needed, equalizing the number of piglets per sow.

Litter weight was recorded weekly on the seventh, 14th and 21st days. On the 28th day, at weaning, all mortalities were recorded and litter size was adjusted. On the 14th day post-farrowing, litters were placed on their respective creep protocol treatment. The type of creep provided and intake were recorded daily and adjusted for wastage. Fresh creep feed was provided each day until weaning.

Upon weaning, piglets were housed in pens of 10 to 13 pigs per pen, with each treatment having 14 to 16 pens within pre-weaning treatment groups. Individual pig body weight and feed intake per pen were recorded weekly for four weeks.

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## Results

There was no difference in litter performance prior to provision of creep feed or in average daily gain throughout the first week after creep was provided. However, the second

CONTINUED ON PAGE 44

Item	Treatment				SEM	P-value
	Control	SC	CC	SCC		
n	14	12	12	12		
Birth weight, kg	1.52 <sup>a</sup>	1.53 <sup>a</sup>	1.45 <sup>ab</sup>	1.43 <sup>b</sup>	0.030	0.041
d 14 weight, kg	4.69	4.74	4.57	4.60	0.138	NS
Wean weight, kg	8.17	8.59	8.19	8.25	0.209	0.081
Average daily gain, kg/d						
d 0-7	0.180	0.187	0.181	0.187	0.010	NS
d 7-14	0.273	0.273	0.262	0.265	0.007	NS
d 0-14	0.219	0.223	0.216	0.220	0.008	NS
d 14-21	0.278	0.291	0.294	0.283	0.112	NS
d 21-28	0.221 <sup>b</sup>	0.259 <sup>a</sup>	0.223 <sup>b</sup>	0.239 <sup>ab</sup>	0.015	0.002
d 14-28	0.274	0.290	0.276	0.284	0.008	0.062
Creep consumed, g/pig/d						
d 14-21	-	6.02	4.14	6.68	1.41	NS
d 21-28	-	13.85	13.83	20.62	4.37	NS
d 14-28	-	9.88	9.04	13.62	2.55	NS

BW, body weight; CC, complex creep provided; Control, no creep feed provided; NS, not significant; SC, simple creep provided; SCC, both simple and complex creep provided; SEM, standard error of the mean

<sup>1</sup>Values are least square means.

<sup>2</sup>Creep feed was offered to piglets from d 14 after birth until weaning.

Table 1: Pre-weaning performance

Item	Treatment				SEM	P-value
	Control	SC	CC	SCC		
n	14	16	15	14		
Initial BW, kg	8.14	8.19	8.13	8.08	0.283	NS
Final BW, kg	21.60	21.91	21.99	22.15	0.445	NS
<b>Average daily gain, kg/d</b>						
d 0-7	0.163 <sup>b</sup>	0.181 <sup>ab</sup>	0.209 <sup>a</sup>	0.192 <sup>a</sup>	0.015	< 0.05
d 7-14	0.446	0.454	0.452	0.453	0.047	NS
d 14-21	0.584	0.588	0.604	0.621	0.040	NS
d 21-28	0.723	0.731	0.721	0.742	0.020	NS
d 0-28	0.480	0.496	0.489	0.502	0.124	NS
<b>Average daily feed intake, kg/d</b>						
d 0-7	0.163	0.172	0.185	0.176	0.010	NS
d 7-14	0.468	0.466	0.488	0.490	0.022	NS
d 14-21	0.732	0.725	0.744	0.772	0.034	NS
d 21-28	0.970	0.971	0.978	1.002	0.034	NS
d 0-28	0.584	0.583	0.599	0.610	0.017	NS
<b>Gain:Feed, kg/kg</b>						
d 0-7	0.985	1.048	1.099	1.087	0.046	NS
d 7-14	0.935	0.971	0.919	0.931	0.078	NS
d 14-21	0.803	0.802	0.817	0.797	0.035	NS
d 21-28	0.754	0.751	0.742	0.731	0.018	NS
d 0-28	0.867	0.823	0.852	0.825	0.031	NS

BW, body weight; CC, complex creep provided; Control, no creep feed provided; NS, not significant; SC, simple creep provided; SCC, both simple and complex creep provided; SEM, standard error of the mean

<sup>1</sup>Values are least square means.

Table 2: Nursery performance

week saw an increase in average daily gain in piglets, with an overall trend for improvement in litters receiving the simple and combined creep treatments. There was no difference in creep feed intake across treatments. There was no preference for simple or complex feed (Figure 1) in piglets that had access to both dietary treatments.

Overall, there appears to be little benefit to providing creep feed under the conditions of the current study. It should be noted, however, that the data represents averages by litter (or pen), which does not account for potential positive effects of creep feed on individual piglets.

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Previous work has indicated there may be a benefit of providing creep feed but only in those piglets that actually consume it.

Another factor to consider: while creep feed had no benefit on overall pig growth, there may be other benefits that were not determined in this study. For example, quicker adaptation to feeding and adjustment to plant-based diets versus milk may help to improve gut development and health, improving long-term robustness of the pig. Future work should focus on the non-growth impact of creep feeding.

Results indicate piglets had no preference between the simple or complex creep diets. Intake of both creep types was similar in the group that had access to both diet types.

### Conclusions

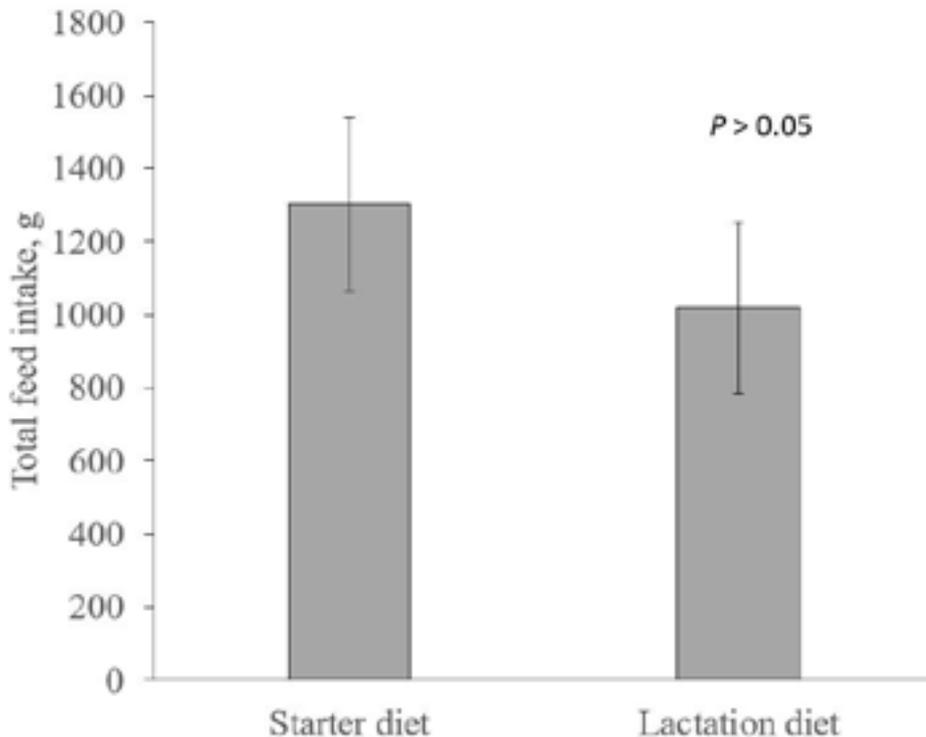
This study has shown how providing creep feed has little impact on pre-weaning performance, with increased average daily gain only in the final

week pre-weaning. While there was a slight benefit to providing creep feed on growth performance in the first week post-weaning, this was not maintained through the nursery period.

Overall, there appears to be little benefit of providing creep feed in general or of providing complex, expensive creep feed. Further research is required to determine the impact of creep feed on individual pigs and to determine if increasing the number of pigs consuming creep feed will create potential benefits.

### Acknowledgements

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Total intake of starter and lactation diet in litters offered both diets during the pre-weaning period. Values are least square means  $\pm$  SEM.

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# Extruded canola meal: is it worth it?

Eduardo Beltranena, Charlotte Heyer, Lifang Wang & Ruurd Zijlstra

Editor's note: All authors are researchers in the Department of Agricultural, Food and Nutritional Science; Faculty of Agriculture, Life & Environmental Sciences; University of Alberta. Zijlstra can be contacted at ruurd.zijlstra@ualberta.ca.

## Introduction

Does extruding canola meal prior to feeding it to pigs make a difference? If you have been feeding extruded canola meal, you might like to consider whether the added cost of processing generates worthwhile benefits.

To determine the nutrient digestibility of extruded canola meal in growing pigs and assess its affect on growth performance in weaned pigs, we extruded solvent-extracted canola meal at increasing screw speeds, then fed extruded canola meal to these pigs.

In Canada, more than 20 million tonnes of canola seed is produced annually, and domestic crushing generates 4.6 million tonnes of canola meal. Canola meal is widely included in pig diets but has a lower energy value and contains less digestible amino acids (chain-linked building blocks of protein) compared with dehulled soybean meal, partly due to a greater content of water-insoluble, wood-type hull fibre that reduces the digestibility of energy and protein. This high-protein but fibrous feedstuff is a particular challenge for young pigs with immature digestive capacity.

Extrusion is characterized by a high shear force produced from a rotating screw with a narrowing flight, constricting the canola meal against the barrel and towards its exit hole, with the aid of added steam. The process is designed to disrupt the rigid cell walls of the canola seed hull and increase fibre solubility, as a result. Heat generated from the friction created by the process may cause canola proteins to break down and may also degrade glucosinolates (bitter-tasting, mustard-flavoured compounds). These bitter compounds could encourage pigs to turn their noses up to unextruded canola meal, reducing feed intake.

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Canola meal is often included in pig diets, but the extra step of extrusion adds cost.

## Methodology

To measure the effects of extrusion on canola meal, we extruded dark-seeded, solvent-extracted *Brassica napus* canola meal at three different screw speeds and fed these meals to growing and weaned pigs in two trials conducted at the University of Alberta's Swine Research and Technology Centre (SRTC) in Edmonton.

The canola meal was sourced from Altona, Manitoba for the growing pig trial and from Lloydminster, Alberta for the weaned pig trial. The canola meals were extruded at the University of Alberta's Agri-Food Discovery Place, also in Edmonton, using a single-screw extruder at three screw speeds: low speed, at 250 revolutions per minute (rpm) (CM-250); medium speed, at 350 rpm (CM-350); and high speed, at 450 rpm (CM-450). As the extruder screw speed increases, so does the specific mechanical energy and the shear force, which creates higher temperatures. Extrusion temperature was set from 80 degrees-Celsius in the first zone of the barrel to 100 degrees-Celsius in the fifth zone. The unextruded and extruded canola meal were then ground using a hammer mill fitted with a 2.78-millimetre screen.

In the first trial, eight crossbred barrows with an initial body weight of 68.1 kilograms (kg) (Duroc crossed with Large White/Landrace F1 from Hypor in Regina) had a T-cannula surgically implanted at the end of the small intestine to collect the material being digested. By comparing the undigested nutrients in collected feces, we could calculate the portion of microbial fermentation in the hindgut. We fed the pigs with one of four diets containing 50 per cent unextruded or one of three extruded canola meal samples in each of the four nine-day periods. Prior to feeding the canola test diets, we fed the pigs a nitrogen-free diet without any protein sources to measure the basal endogenous losses of protein and amino acids, which is a common process



The University of Alberta's Agri-Food Discovery Place in Edmonton, home to the Wenger-brand extruder, manufactured in Kansas, used in the study.

when studying standardized amino acid digestibility of feed ingredients; it helps account for gut enzyme secretions or microbial contributions to protein content in the gut content found in the small intestines of pigs.

In the second trial, 200 of the same type of pigs from the first trial were weaned in three groups at 21-days-old, randomly placed in 50 pens, with two male and two female pigs per pen at heavy and light body weights. Starting two weeks after weaning, pigs with an initial body weight of 8.3 kg were fed one of five experimental diets for three weeks. The five wheat-based diets contained 20 per cent soybean meal, unextruded or extruded canola meal, and were balanced for net energy by addition of canola oil and digestible amino acids, including supplemented crystalline lysine, threonine, methionine and tryptophan. Diets did not contain antimicrobials or growth promoters. Mash diets were mixed at the University of Alberta's feed mill in Edmonton. Pens measuring 1.1 metres by 1.5 metres with plastic slatted flooring and polyvinyl chloride partitions were equipped with a dry feeder, providing four feeding spaces and a nipple drinker. Pigs had free access to feed and water. Rooms were ventilated using negative pressure, to help the pigs maintain a comfortable ambient body temperature, with 12-hour light and dark cycles.

## Results

Short-term heating during extrusion did not cause protein damage compared to unextruded canola meal, as indicated by similar chemically available lysine content. Extrusion did not cause much change in seed hull fibre content, and it did not convert this mostly insoluble fibre to soluble fibre.

Extrusion, which may increase availability of denatured protein to the pig's digestive enzymes, indeed increased small intestine digestibility of protein (*Figure 1*), digestibility of most amino acids (*Figure 2*) and reduced hindgut fermentation of protein. Extrusion did not affect small intestine or total tract digestibility of energy. Increasing extruder screw speed did not further alter protein and energy digestibility in growing pigs, indicating that

*CONTINUED ON PAGE 48*

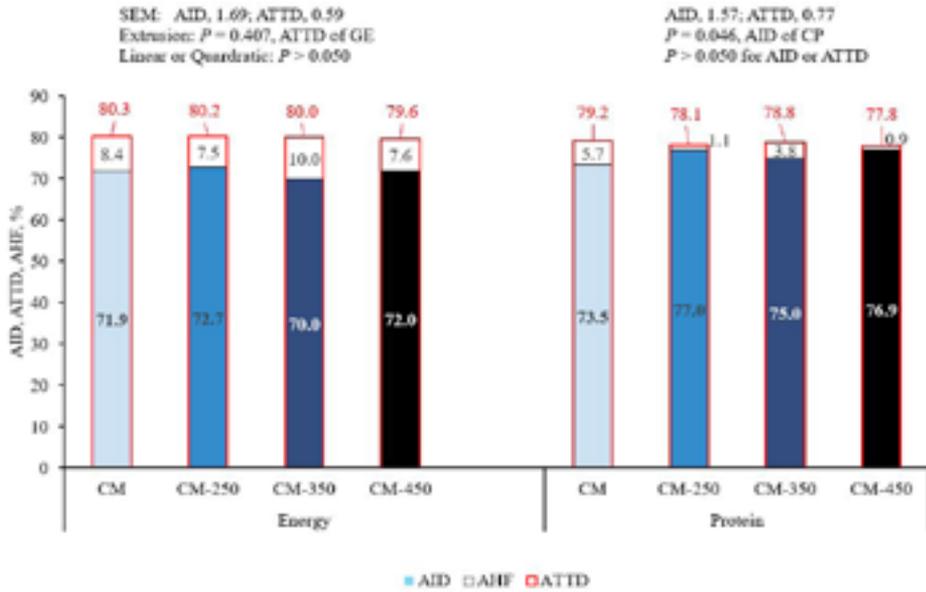


Figure 1: Proportions of protein and energy digested in small intestine (AID) and total tract (ATTD) or fermented in hindgut (AHF) of cannulated growing pigs fed diets with 50 per cent unextruded canola meal (CM) or extruded at 250, 350 and 450 rpm.

the increased mechanical energy was not sufficient to open up the mostly insoluble fibre structure of the canola seed hull. The overall picture emerging from the

present study indicates that extrusion processing at the settings applied did not disrupt the hull cell wall. However, extrusion did decrease the content of total glucosinolates by 14 per cent.

In weaned pigs, extrusion of canola meal decreased the total tract digestibility of protein by three per cent but not the energy value (data not shown). Increasing extruder speed did not further alter the total tract digestibility of protein and energy, and it did not change the digestible energy or calculated net energy. Given that canola meal contains approximately three times more insoluble fibre than dehulled soybean meal (27 per cent versus 8.5 per cent fibre), diet nutrient digestibility of extruded canola meal was upwards of six per cent lower than that of soybean meal.

Extrusion of canola meal did not affect



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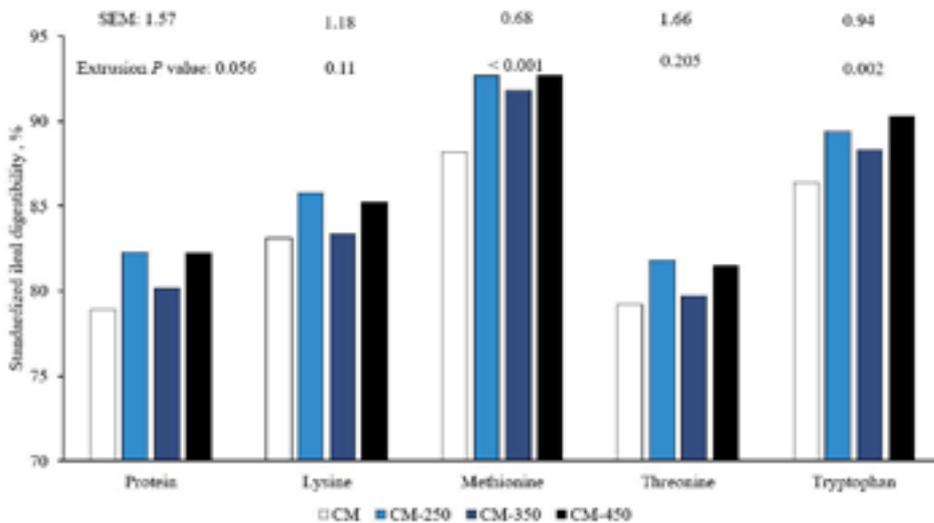


Figure 2: Digestibility of crude protein and key amino acids at the end of the small intestine in growing pigs fed diets with 50 per cent unextruded canola meal (CM) or extruded at 250, 350 and 450 rpm.

feed intake, body weight gain or feed conversion in weaned pigs for the entire trial (Figure 3). Increasing extruder

screw speeds linearly increased body weight gain in the first week and improved feed conversion for the entire

trial.

Because we balanced the diets for equal net energy and several important amino acids, pigs fed diets with extruded canola meal did maintain feed intake and had similar body weight gain and feed conversion compared with pigs fed dehulled soybean meal diet for each week and the entire trial.

These results suggest the importance of adopting the net energy system for diet formulation of high-protein, fibrous feedstuffs like canola meal. As shown in growing pigs, extrusion somewhat increased the availability of amino acids; however, this increase in amino acids supply did not increase growth performance in weaned pigs.

### Conclusions

Our study confirms that extrusion of dark-seeded, solvent-extracted

CONTINUED ON PAGE 50

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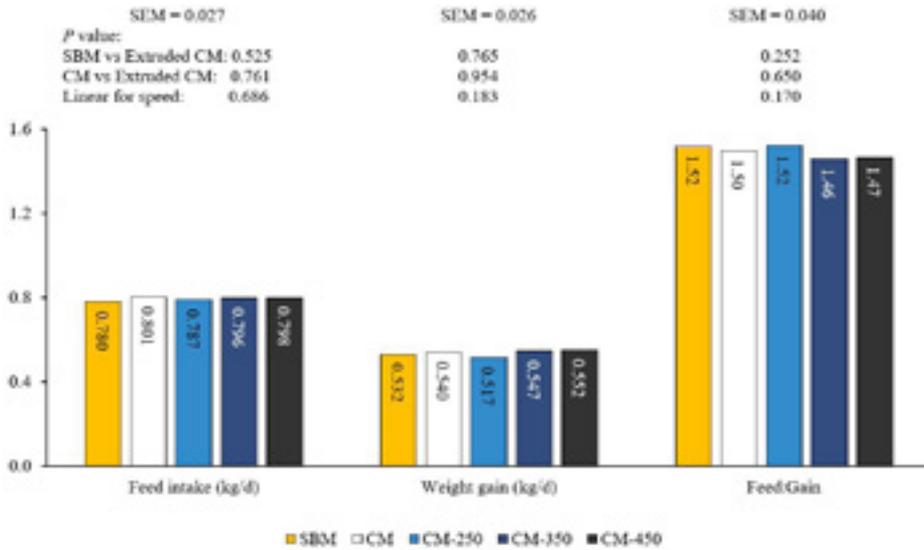


Figure 3: Growth performance of weaned pigs fed diets with 20 per cent dehulled soybean meal (SBM), or 20 per cent unextruded canola meal (CM) or extruded at 250, 350 and 450 rpm.

*Brassica napus* canola meal increased small intestine digestibility of most indispensable amino acids in growing pigs, which provided to the pigs slightly more available amino acids from the

canola meal. However, increasing extruder screw speeds and mechanical energy did not increase energy digestibility in growing pigs and did not improve growth performance in

weaned pigs. Extrusion processing, considering its added cost, did not show benefits on growth performance of weaned pigs.

### Acknowledgements

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# Lowering pork's carbon footprint by feeding peas

Denis Tremorin

Editor's note: Denis Tremorin is the Director of Sustainability for Pulse Canada. He can be contacted at dtremorin@pulsecanada.com.

## Introduction

Canadian pulses are one of the world's most sustainable crops – driven by the nitrogen-fixing capacity of pulses, as well as water and soil health benefits of including pulses in crop rotations. As feed production represents a significant portion of the carbon footprint of the livestock industry, using pulses in feed gives us the opportunity to lower the environmental impact of livestock production.

Pulse Canada wanted to highlight this opportunity to show pork producers and processors that pulses can help them reach their sustainability goals. That is why we commissioned a research project investigating the environmental impacts and benefits of including Canadian peas into animal feed rations for western Canadian pork. The findings were clear: through a change in hog rations toward a pea-based diet, producers can reduce greenhouse gas (GHG) emissions by up to 18 per cent.

The research investigated the environmental impacts and benefits of including Canadian peas by undergoing a life cycle assessment, guided by the International Organization for Standardization. Life cycle assessment is a science-based, internationally recognized tool for evaluating the relative potential environmental and



Not only in terms of greenhouse gas emissions, but also in terms of water usage, feeding peas can provide benefits.

human health impacts of products and services. The method can be used to identify opportunities to improve the environmental performance of products, inform decision-making, along with supporting marketing, communication and educational efforts.

## Methodology

The research was conducted by Groupe AGÉCO – a Canadian consultancy specializing in life cycle assessments of food and agricultural products – and was supported by a technical team of livestock researchers from western Canada. Through this study and others preceding it, the pulse industry has identified the use of pulses within livestock diets as an opportunity to reduce the environmental footprint of pork production systems, while also creating the potential to develop and market livestock products with low environmental footprints.

## Results

The findings of the study were substantial, demonstrating a 28 per cent reduction of GHG emissions in the feed production alone, leading to an overall 18 per cent reduction in the final product's GHG emissions. The study

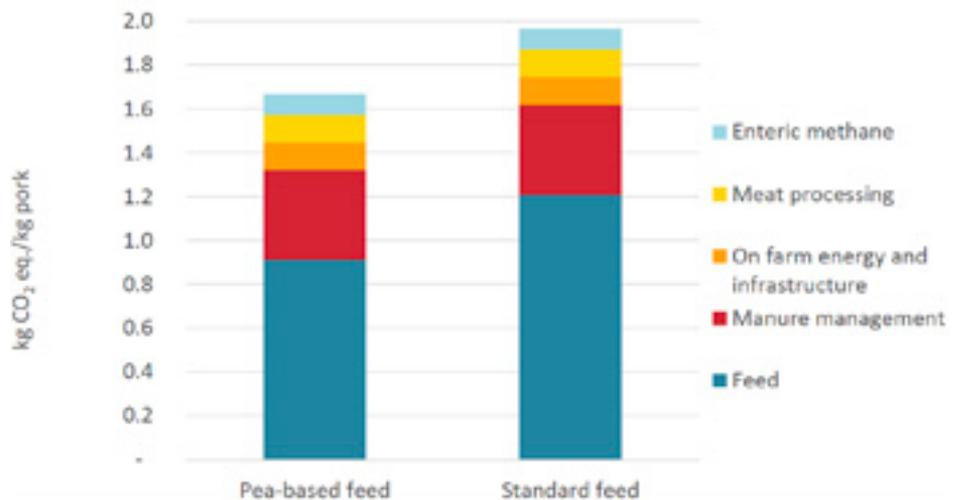


*These yellow peas are... 'green'? Yes! As time goes on, public trust in the Canadian hog sector increasingly depends on environmental stewardship.*

looked at four environmental impact categories that were recognized to be significant areas of concerns in Canada:

- Climate change: Replacing wheat, barley, soymeal or any of the compared grain products by a pea-based feed allows a 28 per cent reduction of GHG emissions related to swine feed production.
- Water scarcity indicator: Including peas in swine feed production represents a benefit by reducing water use by 23 per cent.
- Land use and biodiversity: Changing standard rations to pea-based rations does not significantly affect

*CONTINUED ON PAGE 52*



Comparing environmental impacts of feeding peas versus other feed ingredients

the land use or biodiversity indicators.

## Conclusions

This study demonstrates that the inclusion of Canadian peas into western Canadian hog rations has a strong potential to reduce the life cycle greenhouse gas emissions from pork production. This reduction is largely driven by using peas to replace feed ingredients with a higher carbon footprint, such as wheat, barley, canola meal and soybean meal. The low-nitrogen fertilizer needs of peas is an important consideration that favours pulses over other crops from the perspective of combatting climate change.

As the global food system continues to explore how to reduce environmental impacts of food production, pulses have been shown to be a potential solution-provider, with benefits from both their production and consumption. In the case of livestock production, the inclusion of peas and other pulses should be considered as a potential strategy in reducing the GHG impacts of livestock production. ■

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