

Better pork

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DEAR READER: LETTERS FROM A FAMILY FARM
CHARTING A PATH AHEAD

As I reflected on the content in this month's magazine, the adage "the best offence is a good defence" leapt to mind.

In this strategy, whether applied in sport or business, the concerted efforts of the individual and the larger team must come together to help ensure success.

On our individual farms, for example, we must diligently follow proper biosecurity protocols. We need to create solid marketing plans.

While these individual best practices provide a strong foundation for our sector, they must be supported throughout the industry.

We work closely with our vets, nutritionists and feed suppliers to provide the best care for our animals.

We rely on meat processors, butcher shops and retailers to process and market our products. We depend on consumers – at home and abroad – to recognize the value (and deliciousness!) of our pork.

We count on the officials at the **Canadian Food Inspection Agency** and the **Canada Border Services Agency** to patrol incoming cargo and people. We trust travellers to understand and follow the rules set out by these agencies.

All the puzzle pieces must come together to protect our food supply and foster a strong Canadian ag industry.

In our first feature, staff writer **Kate Ayers** examines a major global threat to the pork sector: African swine fever. She outlines the history of the disease, how it spreads and what the North American industry can do to protect itself.

In our second feature, writer **Geoff Geddes** connects with pork sector leaders to reflect on lessons learned from the NAFTA renegotiation process and how the Canadian industry can chart a path ahead. While the new trade deal relieves some of the uncertainty in the markets, it also underscores the need to strengthen trade relations with other countries, his interviewees say.

I hope you find this edition of *Better Pork* to be informative in this period of flux we face. Please get in touch if you'd like to discuss the issues our writers explore or another topic of importance on your farm.

On behalf of the *Better Pork* team, I would also like to wish you a happy holiday season with your family and friends. While we always have work to do on the farm, I hope you find the opportunity for some well-deserved relaxation! **BP**

Andrea

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Amy DeJong photo

"For the future, we would love to buy more property as well as expand our numbers in the hog industry," says Chris DeJong, a Northumberland County, Ont. pork producer. See his family's story on page 20.

Ben 185/iStock/Getty Images Plus photo



HOT TIPS FOR COLD-WEATHER TRANSPORT

Though they seldom complain, pigs are no fonder of the cold than farmers. By following a few key steps, you can keep your animals frostbite-free and prevent the cold from biting your bottom line.

“You want to focus on aspects like bedding, low densities and monitoring the temperature both at loading and at the point of arrival,” said **Frank Wood**, Ontario Pork’s manager of industry and member services.

Wind chill factor is another important consideration. Even at 0 C (32 F), once a truck is moving with air blowing through it, the wind chill is significant. When you reach your unloading point, open the truck promptly. If you do not, the temperature inside will increase rapidly, and you can overheat your load.

“In the colder weather, a common mistake is thinking that you can overload your truck because of the lower temperatures, but pigs need a bit of room to move. If they can’t get away from the sides of the truck, that’s when we see frostbite.

“Keep your pig density at proper levels based on the square footage of the truck and the amount of bedding available,” Wood said.

While the movement of pigs in winter can be a challenge, it’s one the industry is well equipped to tackle.

“Transporters usually get blamed when things go wrong, but they do a great job under trying conditions,” Wood added. **BP**

SOURCING NEW ORGAN DONORS

Scientists are one step closer in matching pigs as organ donors for human patients.

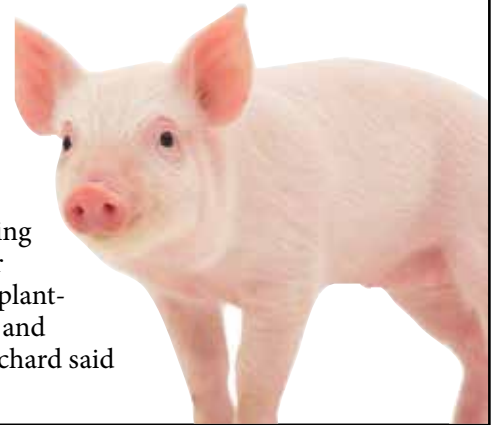
The **University of Alabama at Birmingham (UAB)** and other research sites are exploring gene-editing as a method to prepare these organs. The process allows scientists to modify pig kidneys and hearts, reducing the possibility of rejection.

“We’ve been trying to do xenotransplantation using pigs as suitable organ donors for humans for probably 30 years,” **Dr. Chris Hostetler**, director of animal science with the **National Pork Board**, told *Better Pork*.

The recent advances in the field could help to reduce wait times for organ transplants, he said.

To ensure the safety of such transplants, researchers needed a better method of detecting potential pathogens. So, **Dr. Mark Prichard**, a professor and director with UAB, along with colleagues, studied 30 measurable assays or tests for pig infectious agents.

The scientists found “the assays hold promise as part of the screening program to identify suitable donor animals, validate and release transplantable organs for research purposes, and monitor transplant recipients,” Prichard said in an August university release. **BP**



Tsakhmister/iStock/Getty Images Plus photo

PUTTING THE BEST HOOOF FORWARD

Narrower slat and gap widths can promote sow health while having no negative effects on manure drainage, a recent study shows.

On behalf of **Swine Innovation Porc**, **University of Manitoba (U of M)** and **Agriculture and Agri-Food Canada**, researchers compared slatted concrete flooring configurations, a September *Farmscape* article said.

First, the team “videotaped everything and analyzed the gait of sows to come up with the best slat and gap widths,” **Dr. Qiang Zhang**, a professor at the U of M, told *Better Pork*.

After analyzing their data, the researchers came up with the dimensions of 105-millimetre (4.2-inch) slats and 19-mm (0.76-inch) gaps. They then examined sows in one room with the common 125-mm (5-inch) slat and 25-mm (1-inch) gap flooring and sows in another room with the narrower widths.

Next, the scientists tested the flooring

configuration in a barn environment, looking at sow foot health, floor cleanliness and air quality.

The narrower gap has no effect on manure drainage but it “resulted in less foot lesions in the pigs,” Zhang said. **BP**

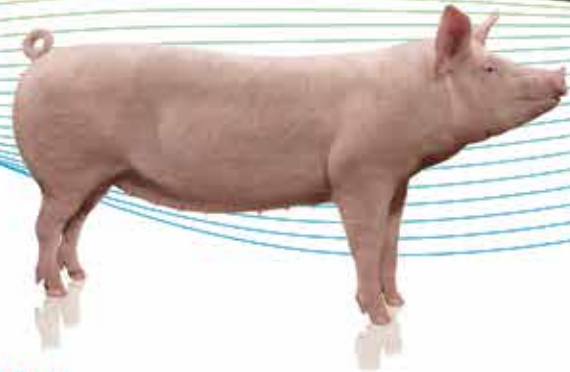


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KEEPING AFRICAN SWINE FEVER OUT OF CANADA

by KATE AYERS

The hog industry is on guard against the invasion of ASF in several pork-producing countries. Learn how to protect your farm from this virulent disease.

Officials have confirmed the presence of African swine fever (ASF) in Africa, Asia and Europe. North American pork producers are on high alert. Government and industry representatives are working diligently to monitor the movement of the disease and review Canadian biosecurity practices.

The entire industry – including producers, processors, veterinarians and feed suppliers – must join forces to ensure the continued good health of Canada’s pork sector.

“ASF would be devastating to Canada,” says Dr. Egan Brockhoff, the veterinary counsellor for the Canadian Pork Council.

“Commerce would be severely disrupted, borders would close, and international markets would close.”

Fortunately, the country’s pork producers and the Canadian Food Inspection Agency (CFIA) are taking necessary precautions to help keep ASF out.

Better Pork spoke with industry experts to learn more about the disease, its history and how we can prevent ASF from entering the North American hog sector.

What is ASF?

Since its major breakout in China in August, ASF has frequently made headlines. The disease is a hot topic of discussion for industry professionals around the world.

“African swine fever is one of the most severe viral diseases of pigs. It is a deadly, contagious, hemorrhagic disease of pigs,” Brockhoff explains.

“It is recognized globally as one of the major threats to

pig production, food security and biodiversity.”

ASF only infects members of the pig family including domestic pigs, wild boars and wild pigs. The disease does not pose a risk to human health, food safety or the health of other animals.

ASF can be compared to the Ebola virus in humans, says Mark Yungblut, president of Synergy Swine Inc. and an industry rep for Swine Health Ontario. Both diseases cause severe internal bleeding in infected organisms.

The most virulent strains of ASF cause bleeding in the pigs’ skin and internal organs, bloody diarrhea, high fever, loss of appetite, lethargy, vomiting or sudden death, the CFIA’s website says.

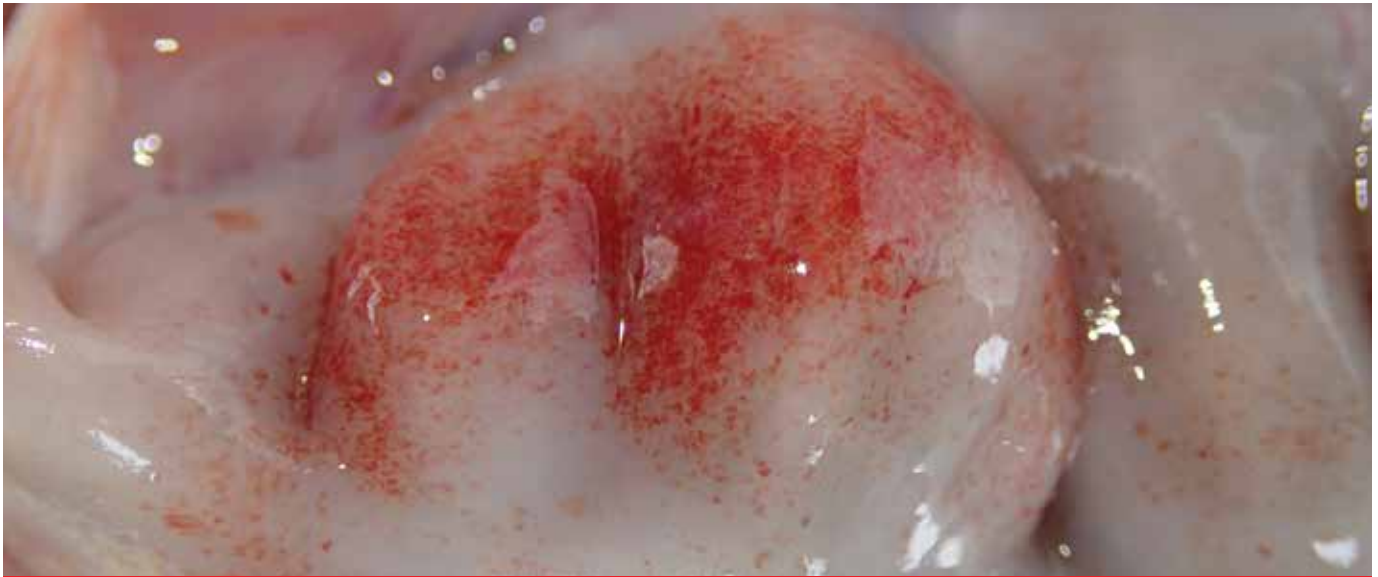
The clinical symptoms of ASF are like those of other diseases, such as classical swine fever, erysipelas, influenza A, porcine reproductive and respiratory syndrome (PRRS) or salmonellosis. These similarities can make it hard for producers to determine whether ASF is present in their herds.

However, a distinguishing symptom of ASF is that it causes illness in pigs of all age groups. Unlike many of the aforementioned diseases, ASF does not affect only a subset of pigs.

While pigs often have high mortality rates within about 10 days of the appearance of clinical signs, the animals can be asymptomatic for up to 21 days.

The mortality rate can also vary from farm to farm, Brockhoff says. The prognosis depends on the farm’s health status and season, for instance.

Dr. Egan Brockhoff photo



African swine fever causes bleeding in pigs' skin and internal organs. The photo above shows a hemorrhagic cecum.

At the time this article was written, the industry did not yet have commercially available treatment options or vaccines to protect pigs from the virus.

However, in October, the U.S. Department of Agriculture gave a notice of intent to license a preventative vaccine for ASF, which would be a significant development for the industry.

The ASF virus is hardy and can persist in barns for up to 30 days. It is unique among swine diseases because it can replicate in arthropods, such as insects and spiders, and vertebrate hosts (pigs and wild boars), says the

UN Food and Agriculture Organization's Animal Health Manual. The virus has a complex genome, and more than 20 serotypes exist.

ASF can remain stable over a range of temperatures and pH levels. The virus can survive in processed pork products, including cured, cooked, air dried, salted or smoked meat, the Canadian Pork Council says. The virus is infectious for 11 days in feces, months in bone marrow, 15 weeks in chilled meat and more than 15 weeks in frozen meat.

ASF is a federally and internationally reportable disease. All cases must be reported to the CFIA.

Disease pathways

Scientists know little about the history of ASF. However, researchers must investigate the disease's past to predict its path of projection.

ASF emerged in the early 1900s in east Africa. The disease then spread in domestic pig populations through sub-Saharan Africa, a 2017 *Veterinary Record* article says. ASF leapt from Africa to Portugal in 1957 and 1960. Later, Spain became infected.

Through these two countries, the virus moved to other European countries, as well as Brazil and Haiti.

In 2007, the ASF virus travelled from Africa to Georgia. From there,

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Russia and eastern European countries, including Poland and the Czech Republic, became infected, the article says.

More recently, officials in Africa, Asia and Europe have found the disease in domestic pig herds, wild boars or both.

Stopping the spread

Infected live animals pose a significant risk. They can transmit the disease.

“Transmission of the virus is through oral and nasal contact with the virus. It moves either through direct contact or indirect contact,” Brockhoff says.

Direct transmission occurs “via contact with infected domestic or wild pigs that carry the virus,” he adds. The virus can also spread indirectly through “contact with the virus from infected tissues and carcasses, or contaminated pork products, swill, feed, vehicles and footwear.”



Dr. Jette Christensen

Soft ticks can also spread the disease.

In some regions, like China and Europe, managing the disease is challenging because the scale of operations ranges from backyard farms to large, commercial farms. Small-scale operations may be more vulnerable if they have fewer bio-security measures in place.

ASF can move across borders through five main pathways, says Dr. Jette Christensen, manager of the Canada West Swine Health Intelligence Network. CFIA officials and industry stakeholders must monitor these vectors carefully:

- live animals, semen and embryos
- food scraps and swill feeding
- contaminated feed ingredients
- human travel
- wildlife

“One of the most common ways ASF is spread from country to country is through people feeding

pigs uncooked food scraps that are infected with the virus,” the CFIA’s website says. This transmission can occur when producers feed their pigs contaminated swill.

The likelihood of disease transmission through contaminated feed depends on the ingredient being transported and environmental factors such as time, relative humidity and temperature, a study found that Dr. Scott Dee and others published this year. Dee is the director of research for Pipestone Veterinary Services in Minnesota. The virus can also survive in empty containers for more than 30 days without a feed matrix.

“Typically, the highest risk feed ingredients include bulk agricultural products that originate from countries with ASF or are from unknown sources (e.g., organic soybean meal),” says Melissa Dumont, executive director of the Animal Nutrition Association of Canada.

Yungblut also noted this risk.

“The threat is real, especially for imported commodities from Asia. Much of the organic soybean meal used in Canadian organic pig production comes from China,” he says.

In addition, ASF is human driven. Global travel and trade spread the disease. Our activities move this virus from country to country, Brockhoff says.

“If people travel to Canada from farms in affected areas and visit a farm here, they could be bringing African swine fever in,” explains Christensen. People travelling to Canada with meat from infected countries could also bring the virus because it can survive in meat casings.

Wildlife has spread ASF in Europe and, although wildlife cannot cross the Atlantic Ocean, hunters could carry the disease into Canada.

Fortunately, wild pigs in North America do not yet carry the virus.

“Wild pigs in Canada do not have African swine fever, so that risk of transmission is zero,” Brockhoff says.

However, “if wild pigs were to become infected in the future, they could act as a significant virus reservoir.”

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“If people travel to Canada from farms in affected areas and visit a farm here, they could be bringing African swine fever in,” Jette Christensen says.

Monitoring movement

The CFIA carefully monitors any pork products coming into Canada from infected countries as ASF would be a big blow to the North American pork industry.

“If pork was not able to be export-

ed from Canada, it could cause an oversupply of domestic pork and therefore a large reduction in price,” says Dr. Mike DeGroot, a technical programs veterinarian at Ontario Pork.

Yungblut agrees.

“If the disease is found in North America, it would devastate the U.S. and Canadian pig and pork markets. Importers would shut off the importation of pork from Canada or the U.S. or both,” he says.

Any infected farms would be quarantined and depopulated, Brockhoff adds.

However, as long as the disease stays out of Canada, the swine industry could develop more export opportunities as many countries will not import from ASF-positive countries, Yungblut says.

Depending on the severity of the disease’s spread in the European Union, for example, significant export demand could develop for American, Canadian and Brazilian pork as well as for competing proteins, says an article published in September by Rabobank, a Dutch multinational banking and financial services company.

Prevention is paramount

Limiting the disease’s movement and keeping ASF out of North America are vital for the global pig population and food security.

The CFIA has imposed import controls and regulations to prevent contaminated animals and products from entering the country. The CFIA works closely with the Canada Border Services Agency to reduce the spread



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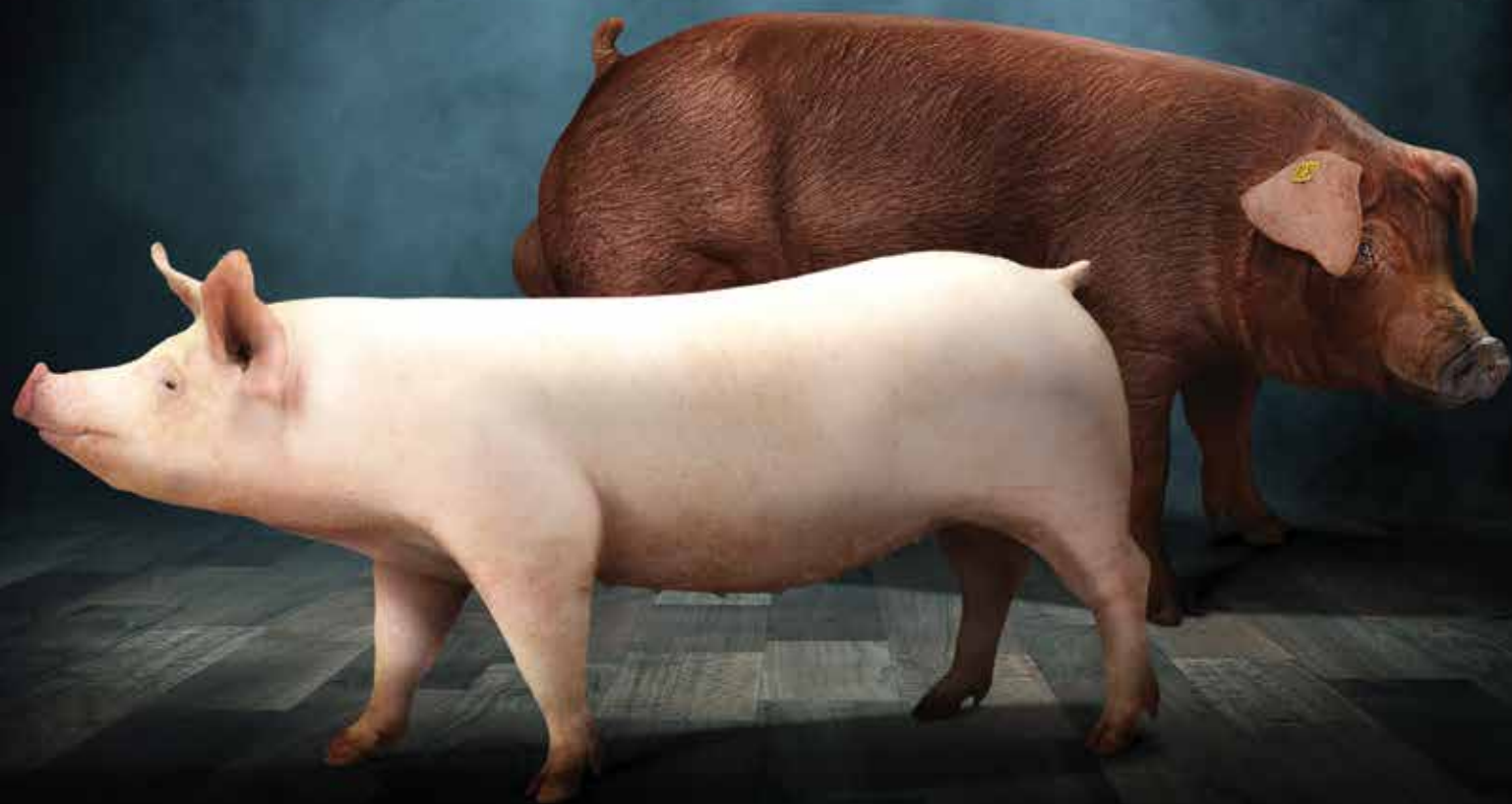
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AFRICAN SWINE FEVER

of disease through travellers.

Officials must also ensure the proper disposal of waste food from aircrafts, ships and vehicles travelling from infected countries, the World Organisation for Animal Health's website says.

At the farm level, biosecurity should be a top priority to keep operations free of disease.

"External biosecurity is critical," Brockhoff says.

"Work with your herd veterinarian on biosecurity training, and insist they audit your site annually.

"Keep visitors and travellers away from your farm. Ensure no one brings pork or meat products from Asia or other countries onto your farm," he adds.

Producers must know the travel history of their farm workers and the people who visit their operations including vets, nutritionists and maintenance crews.

Individuals who have travelled to ASF-positive countries or who have visited farms outside Canada can pose a risk to herd health, Christensen says.

Even commercial feed could cause disease movement. Although the threat from contaminated feed is low, it is not zero, Brockhoff says.

"Due to the potential devastation to the pork industry resulting from an outbreak, feed companies and pork producers who manufacture their own feed should be vigilant," Dumont says.

"The threat of transmission via feed transport can be greatly diminished by applying rigorous supplier approval protocols and ensuring strong biosecurity throughout the supply chain, including sourcing, manufacture, transport and storage."

Do not feed human food scraps or swill to pigs, and know where your pig feed is coming from, she adds.

"The CFIA regulates the import of all feed ingredients, including those from China. These regulated sites are required to be certified," Brockhoff says.

"Unfortunately, some feed ingredients are likely being imported directly from brokers that are not working



Dr. Egan Brockhoff photo

Dr. Egan Brockhoff worked on a hemorrhagic fever case in southern China.

with certified sites. The processes these sites have in place are unknown and the risk is also unknown.

"Working through regulated pathways with known quality assurance and HACCP (hazard analysis and critical control point) standards is critical to minimize the risk," he says.

Producers should also ask questions and fully understand the health status of the animals coming onto their farms.

"The absolutely highest risk of

passing ASF onto a farm is by movement of infected pigs, semen and embryos," Christensen says.

If a producer suspects an animal is infected with ASF, he or she should call the vet and CFIA district office right away.

"As an industry, we need to be aware of what is happening around us and how the virus has spread into eastern Europe and China.

"We need to do our best to keep it from coming over to North America," says DeGroot. **BP**



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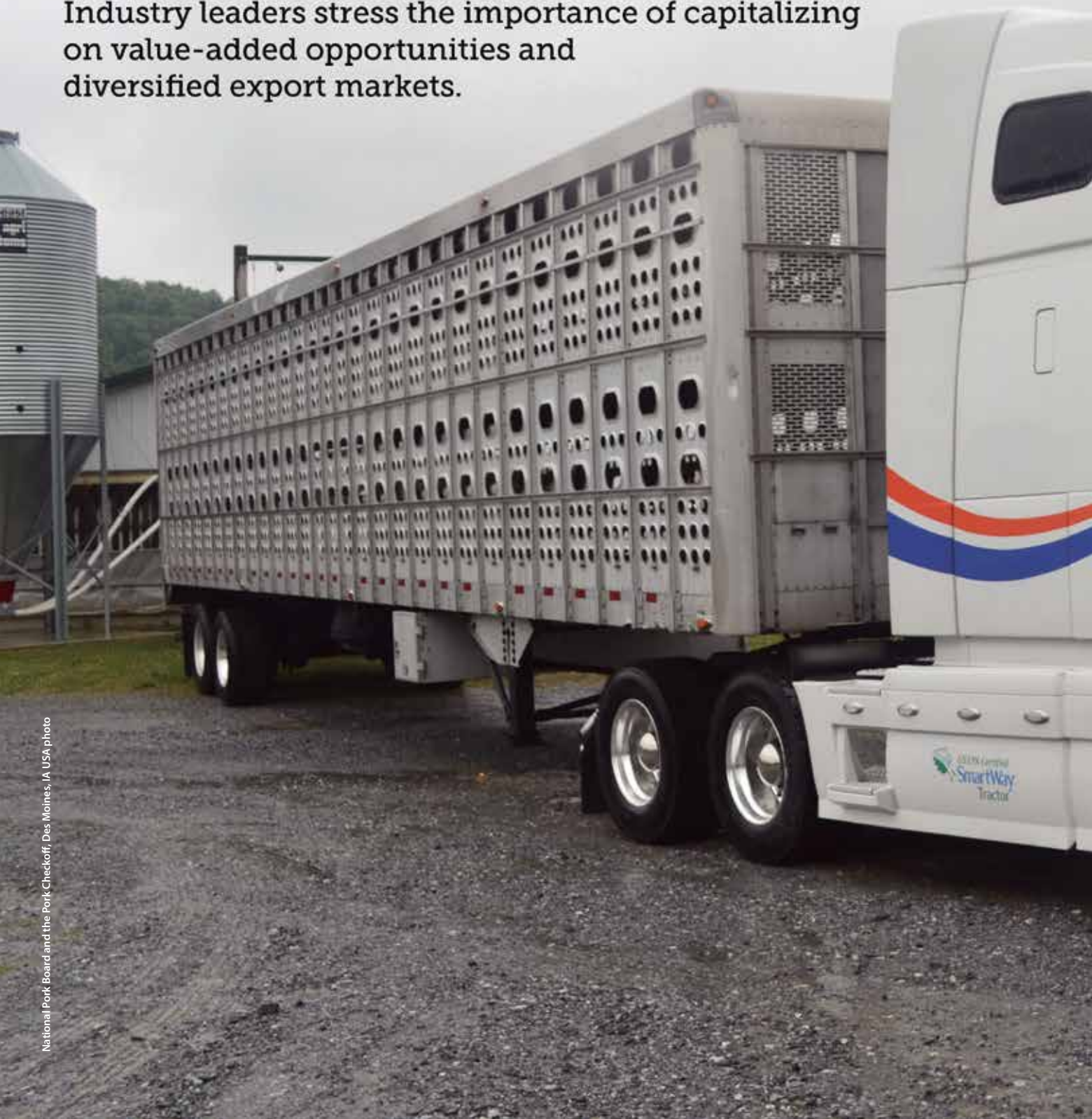
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AFTER NAFTA

by GEOFF GEDDES

Industry leaders stress the importance of capitalizing on value-added opportunities and diversified export markets.



■ ■ WHAT NOW?



AFTERNAFTA

As night falls, a loud bang pierces the silence. "Phew! It was just a loose shutter," a woman says. She closes it, turns around and ... the killer strikes.

It's a classic horror movie scene, but could it embody the mixed feelings about NAFTA (North American Free Trade Agreement) 2.0? As Canadians breathe a sigh of relief, some members of the pork industry see the USMCA (United States-Mexico-Canada Agreement) putting trade fears to bed. For others, however, the deal signed on Sept. 30 serves as a wake-up call that we ignore at our peril.

"We're pleased that a deal was reached, as the alternative was uncertainty which is bad for the market," said Gary Stordy, director of government and corporate affairs for the Canadian Pork Council.

"There were some hard areas where countries wanted to have discussions, but there is no indication of new tariffs on pork products or hindrances at the border. So, for us, that's a win."



National Pork Board and the Pork Checkoff, Des Moines, IA USA photo

"Since implementation of NAFTA, agri-food exports to the United States have grown fivefold," said Claire Citeau.



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Industry representatives are also pleased that NAFTA's Chapter 19 dispute resolution mechanism remains intact in the new agreement.

"Chapter 19 is a great tool to have in the toolbox in the event of any disruptions in the trade flow," said Stordy.

"We have good working relationships with our counterparts in the U.S. and Mexico, but sometimes things pop up that can't be resolved through conversation. When that occurs, Chapter 19 is invaluable."

Deal us in

While not everyone in the ag industry is pleased with the new agreement, the alternative of no deal is one many shudder to contemplate.

"Since implementation of NAFTA, agri-food exports to the United States have grown fivefold," said Claire Citeau, executive director of the Canadian Agri-Food Trade Alliance.

"The agreement has encouraged the integration of the supply chain and contributed to economic growth, jobs and opportunities for farmers, exporters and food manufacturers. If you remove one piece from the puzzle, though, it all falls apart. So, losing NAFTA would have been devastating."



Gary Stordy

Because close to C\$1-billion worth of pork products moves back and forth between Canada and the United States every year, an open border is critical. Even so, casting a wide net for market opportunities remains a priority.

"It's extremely important to access multiple markets, as it gives us flexibility to maximize value for our product," said Stordy.

Finding a silver lining

Given a choice, Canadian officials would likely have opted to keep NAFTA intact. Yet the renegotiation may have a silver lining.

"The difficulties around NAFTA

underlined that we can't put all our eggs in one basket," said Chris White, president and CEO of the Canadian Meat Council.



Chris White

"Over the past several months, government and industry

(representatives) have recognized the need to diversify our export markets.

"What you like for pork products may not be what I like; so, the more we branch out, the greater the opportunities."

Given that reality, White is pleased with the Canadian government's recent efforts at concluding several trade deals, including CETA (Comprehensive Economic and Trade Agreement), CPTPP (Comprehensive

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and Progressive Agreement for Trans-Pacific Partnership) and USMCA.

“It’s great that we have a strong relationship with the U.S., but it’s not healthy to be so dependent on one market, especially



Michael Young

in light of the ups and downs they’re going through,” said White.

“The NAFTA experience has forced industry to be more rigorous in its analysis of where we could export (products than) before and how we can work more effectively with government officials.”

Trade is unpredictable these days, so broadening our scope is not just advisable; it’s essential.

“The aggressive protectionism we

are seeing is unprecedented,” said Citeau. “It puts the global trade system at risk, and the need to diversify has never been greater.”

Though new pork markets are scarce, great potential exists to boost business with some customers.

Differentiation is the key

“Over the last three decades, Canadian pork exports have grown exponentially,” said Michael Young, vice-president of technical programs and marketing services with Canada Pork International (CPI).

“We are now the third-largest pork exporter in the world behind the EU and the U.S., accounting for 16 per cent of global pork sales volume.

“Canadian pork is enjoyed in more than 100 countries and we have the precarious position of being the most export-dependent pork-producing nation, with 65 per cent of our production destined for the world’s table.”

The U.S. is still Canada’s largest single export market destination, but does not account for the phenomenal growth that Canadian supply partners have achieved in volume and value over the last three decades. Mexico remains our fourth-largest market by volume and will continue to be an important trading partner for Canada.

“Canadian export growth has come from other markets including China, South Korea, Philippines, Taiwan, Australia and Chile,” said Young.

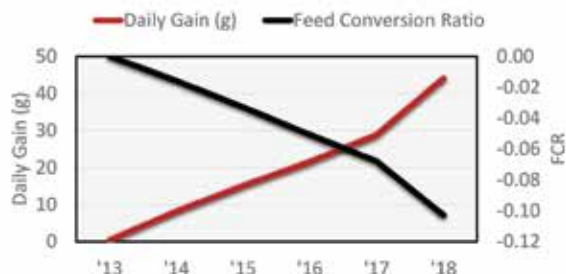
“Canadian supply partners have focused on differentiating their products in highly commoditized market segments through meat quality, specifications and yield performance, combined with a value and service proposition that stands out in the marketplace.”

Canadian supply partners continue to capture a larger share of the lucrative chilled pork business in mature markets like Japan. China has recently opened the door for chilled pork exports from Canada. High-end Chinese retail, foodservice and online customers look for Canadian quality to differentiate their product lines in the marketplace.

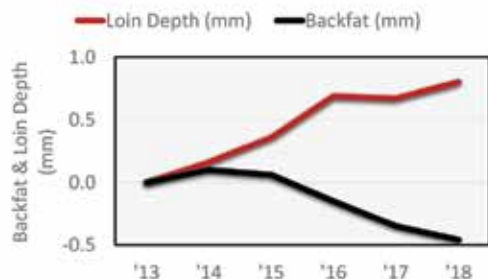
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Though CPI plays a major role in expanding export opportunities for the Canadian pork industry, Young is quick to give credit where credit is due.

“Our pork producers and processors are the real stars and we work to support them,” said Young.

“It is their vision and collective marketing strategies to create and secure continued growth within these channels that are really impressive.”

“Our competitors are upping their game, and a lot of high-quality pork is coming out of the EU and the USA,” said Young. “We can never fall asleep at the wheel as we are not the largest or lowest-cost suppliers.

“We must continue to work hard at identifying the opportunity gaps and focusing on the points of differentiation that Canadian supply partners can offer.”

Tossing the tariffs

Even as the industry celebrates USMCA and explores opportunities abroad, we have some unfinished business to address with our southern neighbours.

“The new NAFTA is a good first step, but the second step is fixing the steel and aluminum tariffs imposed by the U.S. on Canada and Mexico during NAFTA negotiations,” said Eric Schwindt, chair of Ontario Pork.



Eric Schwindt

“When Mexico retaliated with tariffs on American pork, it chopped C\$20/head from market hog prices. That’s something our producers just can’t afford, so repealing the tariffs is essential.”

In general, Schwindt said producers are pleased to see a deal done, but he noted one possible pitfall in the aftermath of NAFTA.

“There is real concern around how the Canadian government will react in assisting the supply-managed industry. If those sectors are compensated much more than pork, it makes for an uneven playing field in terms of buying resources like land and crops,” he said.

“We understand that the supply-managed industry faces potential hurt in the future, but our (sector) has suffered actual hurt for the last eight or nine months. It’s vital that all commodities receive equitable treatment so one is not unfairly advantaged over another.”

If the NAFTA wrinkles are ironed out and USMCA proves to be a sound replacement, many observers feel the future holds promise.

“The long-term forecast for global pork consumption is very positive so, if we do expand, there will be markets for our product,” said Young.

“We are in the right business, in the right country. As long as we maintain robust biosecurity to avoid market closures and grow the industry by adding value to what we’re already doing, we’ll be in good shape.”

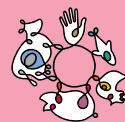
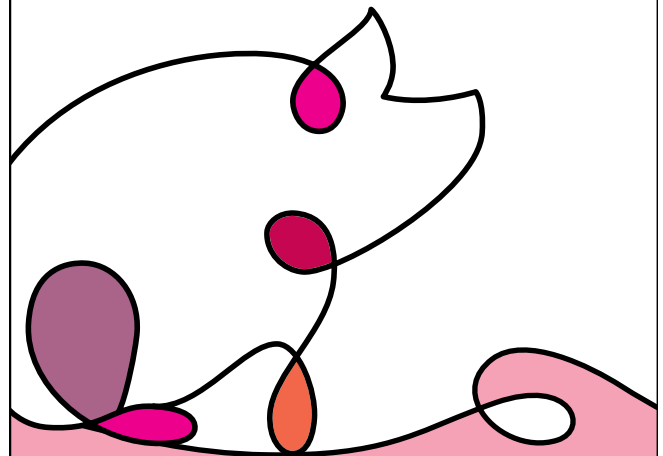
If the industry can take the initial fear and uncertainty sparked by a NAFTA reboot and turn it into more opportunity worldwide, the sector might just achieve the impossible: a horror story with a happy ending. **BP**

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by
**KATE
AYERS**

SHARING A FAMILY PASSION FOR FARMING

An eastern Ontario cash crop and hog farmer steadily expands his family's farm operations.

Amy DeJong photo



The DeJong family gathers for a photo in front of the farm sign.
Left to right: Chris, Kaitlyn, Marnee, Trevor and Amy.

Chris DeJong is proud that his pork and cropping operations are family-run businesses.

He and his wife Amy have a 230-sow farrow-to-finish operation in Northumberland County, Ont.

Chris also cash crops with his brothers Rod and Mark. In total, the brothers cultivate about 3,200 acres under three operations – Knollcrest Swine, DeJong Family Farms and Knollcrest Poultry.

At Knollcrest Swine, Chris and Amy use a corn and soybean rotation. Chris has a local elevator roast the beans and then he brings the crop back to the farm for pig feed. The brothers also grow some hay for the beef cows that Chris has as well.

Over the years, the family has steadily grown its operations. Gerben and Anne DeJong, the parents of Chris, Rod and Mark, bought the original 175-acre farm in 1966.

After Chris completed Ridgetown College's Livestock Management diploma program in 1993, he and Mark bought a 96-acre parcel adjacent to their parents' farm. The brothers began with a herd of 50 beef cows.

In 1995, "we decided to tile the farm and sell off three-quarters of the cattle. We now use this land to produce feed for the pigs," Chris says.

Mark and Chris bought their parents' hog operation in 1998. That year, the business partners also built a

sow barn and hot nursery rooms on the home farm.

In 2000, the pair purchased 102 acres of land within 10 kilometres (6.2 miles) of the home farm to produce enough feed for the pigs. Two years later, they purchased an additional 58 acres for cropping.

Through these expansions, Chris and Mark grew the operation from 125 sows to 230.

The sows and piglets are located on the home farm. Here, the family raises the piglets up to 150 lbs. (68 kgs). The DeJongs then move the animals to a finishing barn at another location, bringing the pigs up to market weight. The family uses loose housing for the nursery and finishing



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Amy DeJong photo



Chris DeJong and his wife Amy have a 230-sow farrow-to-finish operation in Northumberland County, Ont.

pigs but they use stalls for the sows.

Two years ago, Mark retired from swine production, but he still works for DeJong Family Farms, which is the cash crop operation that Chris, Mark and Rod own together.

And Chris's family also play a central role in the farming operation. Chris and Amy have three children – Kaitlyn, 19, Trevor, 16, and Marnee, 14. All the kids help on the farm.

When the couple's children reached school age, "Amy worked at

the local credit union, where she stayed until 2016. Amy has been on the farm full-time since then, as we decided that would be the best for the farm," Chris says.

And Chris and Amy look forward to growing the farm again soon.

"For the future, we would love to buy more property as well as expand our numbers in the hog industry. More land would provide us with more feed as well as more land to spread manure on," he says.

What contributed to your decision to become a pork producer?

Chris: Growing up here on the farm.

I have always had a love for the pigs.

Every day brings a new challenge and there is always something new going on.

Describe your role on your farm operation.

I am the herd manager.

I oversee every activity on the operation and am the one who makes all the repairs.

Hours you spend in the barn per week?

Probably about 30 hours a week.

Hours you spend in the office per week?

Zero. (Laughs.)

Amy manages this work.

How many emails do you receive per day?

About five to 10 emails per day.

How many text messages do you receive per day?

Five to 15 text messages.

Hours a day on a cellphone?

About two hours.

Email or text?

I use both.

Any favourite apps?

The Weather Network.

Hours a day on the Internet?

Probably about one to two hours a day.

How often do you travel?

Not often enough. (Laughs.)

We probably travel during four weeks of the year. We go camping and four-wheeling in the summer.

And we snowmobile in the winter.

Where did you last travel to?

We travelled to North Bay.

My daughter goes to school up there.

What do you like best about farming?

Being your own boss, working the hours you want and having pride in what you do.

What do you like least?

When things break down on the farm on a weekend.

What's the most important lesson you've learned?

Always be open-minded.

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What's your top tip about farm transition planning?

Plan ahead and always have the farm's best interest in mind.

All parties have to be happy at the end of the day.

Are you involved in any committees, boards, associations or volunteer efforts?

I am involved in the Northumberland Quinte Pork Producers Association.

I am a deacon at our church and help out at the Northumberland Christian School.

In the past, I was a hockey trainer for the Baltimore Atom Ice Dogs.

What are your hobbies or recreational activities?

I like four-wheeling, snowmobiling and fishing.

What does your family think of farming?

My kids think farming teaches you valuable life skills, like hard work.

It is a lifestyle worth getting up for and you can work towards self-accomplishments.

The kids help with chores every other weekend to give Amy and me a break. They also help on weaning days, washing in the barn, moving pigs and with some of the daily tasks.

Trevor helps out with planting and harvesting the crops as he loves driving the tractor, cutting hay, packing and running the grain buggy.

The kids don't really like when they are called out to pick rocks.

Amy looks after farrowing and helps with keeping the litter numbers up. She is a great partner.

What's your top goal?

To continue to produce a quality product.

And to have a weaning average of 13 piglets per sow.

How do you define success?

Everything goes well.

Good livestock health and meeting your targets.

As well as being happy with what you do for a living.



Trevor DeJong, 16, helps with planting and harvesting. He loves driving the tractor, cutting hay, packing and running the grain buggy.

Is your farm vehicle messy or neat?

I would say dirty. (Laughs.)

What are three items that are on top of your desk?

Bills, the newspaper and *Better Pork* magazine.

What was the last piece of shop equipment you bought?

I just put new LED lighting in the barn.

What are the best times of day?

First thing in the morning, after chores are done.

And at supper time when the family is all together.

What was your most memorable production year?

It was probably last year.

We hit our targets in terms of pigs born per sow and for shipping.

What do you see as current or future challenges for the industry?

One of the challenges for the pig industry is the lack of packers in Ontario. We also count on a lot of export markets as well – we need free trade.

Our pricing is based off the Chicago Board of Trade. If U.S. pigs aren't moving, our price will be

influenced by the American market and not by the trading markets that we have gained over the years from other countries.

It would be great to have Canadian pricing and not to have to rely on the U.S. market. **BP**

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by
**DR. JESSICA
LAW**

REPRODUCTIVE TOOLS: USES AND BENEFITS

Use reproductive tools effectively to maximize the benefits and minimize the side effects on your sows.



Continuous access to water is critical at all stages of a sow's life, especially during lactation.

In the October edition of *Better Pork*, I discussed the precautions issued by the U.S. Food and Drug Administration regarding altrenogest and other risks to humans when using reproductive aids in swine. This month's article will outline how to use some of these aids in conjunction with good herd management and how to avoid adverse effects in swine.

Along with best practices for safety, producers should follow best practices for the administration of these products. You should develop and review these best practices with your herd veterinarian to ensure that the protocols fit your goals and needs.

As discussed last month, altrenogest is a synthetic progesterone commonly used for estrus suppression and synchronization of swine.

Producers should administer the

product for at least 14 days in sows and gilts that have had at least one heat. You should line up the timing of administration so that the last day of treatment corresponds with the day of weaning for the batch of sows for which you are synchronizing the replacement gilts.

Once you stop administering altrenogest, the animals will come into heat within four to six days post-treatment or post-weaning.

You can use reproductive aids in swine when you are synchronizing your sows and gilts for batch farrowing to tighten up the breeding window. You can also use these products if you are adding multiple replacement gilts to fill a gap in production.

You must administer altrenogest at the same time every day and the gilt or sow must ingest the full dose. If

the product is administered improperly, gilts and sows can develop cystic ovaries.

This condition will occur when multiple follicles develop on the ovary and continue to grow rather than ovulate. When enough ovarian tissue is cystic, it causes anestrus, meaning that the gilt or sow will not cycle normally or show heat.

You can employ treatments for cystic ovaries in gilts and sows with some success. Simply avoiding the development of cystic ovaries in swine, however, is preferable.

In Europe, the dose for Regumate (a brand of altrenogest) is 18 days at 20 milligrams per day (mg/day). In Canada, the label dose is 14 days at 15 mg/day. Your veterinarian will use his or her discretion to decide at which dose to prescribe the selected

altrenogest compound.

Some producers may employ an off-label use of altrenogest to maintain sow pregnancy. However, this use is not advised due to cost, risk of exposure and risk of cystic ovaries.

Last month, I also discussed gonadotropins, including P.G. 600 and Pregnenol 6000. These products are labelled for the induction of estrus in swine. Farmers can use these products to target three reproductive stages: sows at weaning, non-cycling or pre-pubertal gilts, and sows that failed to cycle after weaning.

Often, producers use gonadotropins without thinking critically about timing. But the sow or gilt's ovary is only responsive to the product 16 days into the estrus cycle, meaning timing is key.

Two-thirds of the time, a sow's ovary has corpora lutea (CLs) which develop after follicles ovulate. Once these CLs begin to regress, the luteal phase is over and the follicular phase begins. Gonadotropins are most effective when follicles are present in the ovaries to respond to the stimuli induced from the injection and no CLs exist to block those stimuli.

You can use gonadotropins at any time in pre-pubertal gilts to induce estrus as they should not have any CLs to block the effects of the product. After the administration of the label dose, the gilt should come into her first estrus within three to seven days.

Continue heat checking and boar exposure for around 30 days post-administration, depending on your production and space constraints, to ensure the animals are not cycling before you cull them.

You can use gonadotropins to treat anestrus in gilts. You should develop this protocol in conjunction with your veterinarian to meet the needs of your farm.

You can also administer gonadotropins the day of weaning to shorten the sow's time to estrus post-weaning.

In this scenario, you should target the use of the product to certain groups of animals, rather than using as a blanket treatment when the average wean-to-first-service interval fails to meet target. Such a blanket treatment approach can exacerbate the issues in your herd and increase the time to first service on subsequent parities.

You can use gonadotropins in parity one sows that generally have a longer wean-to-first-service interval or on more parities in the summer months. You can administer this product to sows that need an extra push if they have not come into heat 10 to 12 days post-weaning.

If your farm has a high wean-to-first-service interval, consider assessing

- body condition score
- boar exposure frequency, duration and quality
- weaning age
- access to feed and water at weaning
- feed and water consumption during lactation

Reviewing and adjusting these areas – and others – in consultation with your veterinarian can improve sow health and performance post-weaning. In turn, these changes can result in shorter wean-to-service intervals.



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Reproductive aids can help maximize performance when used appropriately and judiciously.

Cloprostenol, another reproductive aid, is present in products such as Cloprostenol Veyx SW, Planate and Estrumate. Do not use these products interchangeably, as the first two contain different concentrations of the active ingredient than the third product.

You should always check the label and consult your veterinarian prior to introducing these products to your herd.

Classically, producers use cloprostenol for farrowing induction. This product is generally used to increase daytime farrowings, resulting in increased supervision and decreased stillborns.

Do not use cloprostenol at any other point in gestation as it will result in abortion. The use of cloprostenol earlier than day 111 of gestation can result in increased numbers of low viability piglets and stillborns.

Some producers also use oxytocin to reduce the number of stillborns.

This product is a bit controversial, however, as practitioners have differing opinions about the timing of administration and dosage.

Sows produce oxytocin, a natural hormone, to induce uterine contractions and milk let-down. As a result, producers use it for farrowing assistance, as well as for treatment of agalactia or dysgalactia (lack of or decreased milk production).

You should limit the use of oxytocin to multiparous sows. You should only administer this product after the sow has farrowed 50 per cent of her litter, as using oxytocin too soon can increase the number of stillborns and low-viability piglets. Some farmers, however, have success in reducing stillborns by using this product sooner and more frequently.

The recommendations vary for use of oxytocin in sow's milk let-down. You must follow veterinary instructions on frequency and dosage.

You must administer this treat-

ment in conjunction with a physical exam and assessment of the sow to determine the cause for agalactia.

Is she off-feed? Does she have a fever or mastitis? You must assess the whole sow and not just the udder to get to the root of the problem.

Review your oxytocin usage with your veterinarian and follow the protocols outlined above to maximize the value of this product and avoid its adverse effects.

It is important and beneficial to have a close relationship with your veterinarian to understand reproductive aids, the uses and the side effects. Each product has a significant effect on the reproductive status and functionality of the gilt and sow.

We must understand the products, their usage and their drawbacks to use them effectively. **BP**

Dr. Jessica Law is a veterinarian with Prairie Swine Health Services in Red Deer, Alta.

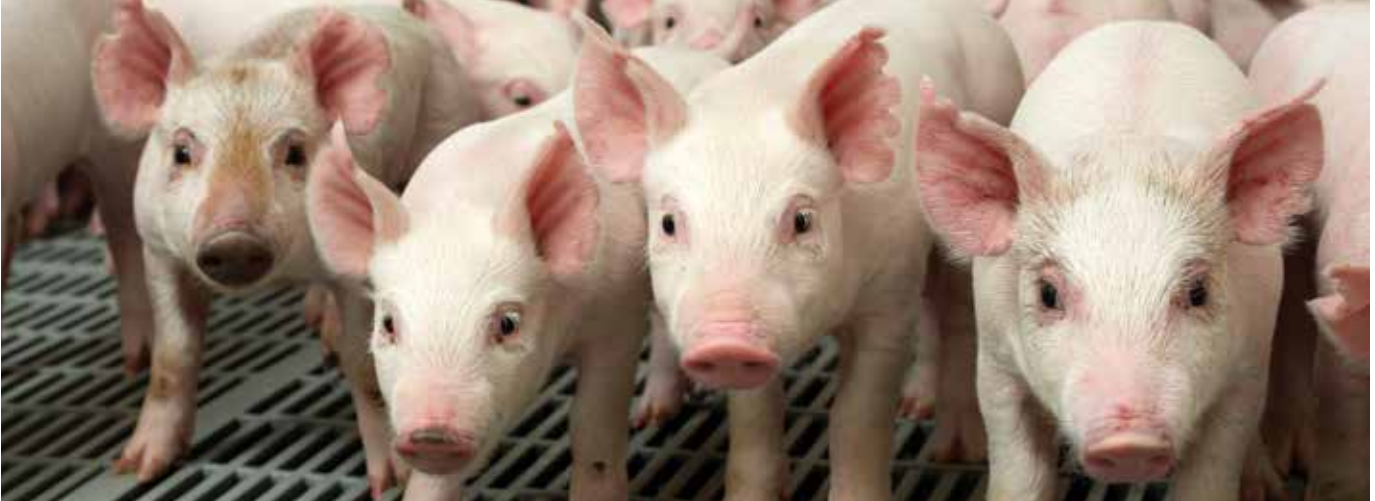
by
**MOHSEN
 POURABEDIN,
 PHD**



REDUCING POST-WEANING DIARRRHEA IN PIGLETS

Producers can employ the following nutritional strategies to help overcome this herd health challenge.

Martin Schwalbe photo



High-quality and highly digestible protein sources improve pigs' post-weaning performance.

Scouring in weaned piglets is a major concern for the swine industry.

This issue commonly occurs in pigs weaned between 14 and 28 days of age. Several factors, such as weaning sociological stress, nutrition and environment affect digestive health and can cause scours in weaned pigs.

When it comes to nutrition, an abrupt change in the piglet's digestive system happens when switching from milk to solid food.

During the weaning period, the gut bacteria and digestive enzymes are not fully developed, the intestinal barrier is weak and the immune system is suppressed due to weaning stress.

Pathogens, such as enterotoxigenic *E. coli*, can take advantage of the piglet's compromised situation, proliferate rapidly in the intestinal tract and cause scours.

Weaned piglets can eat and digest good amounts of solid food in the post-weaning period if they are given the correct ingredients and nutrients, as well as kept in the right environmental conditions.

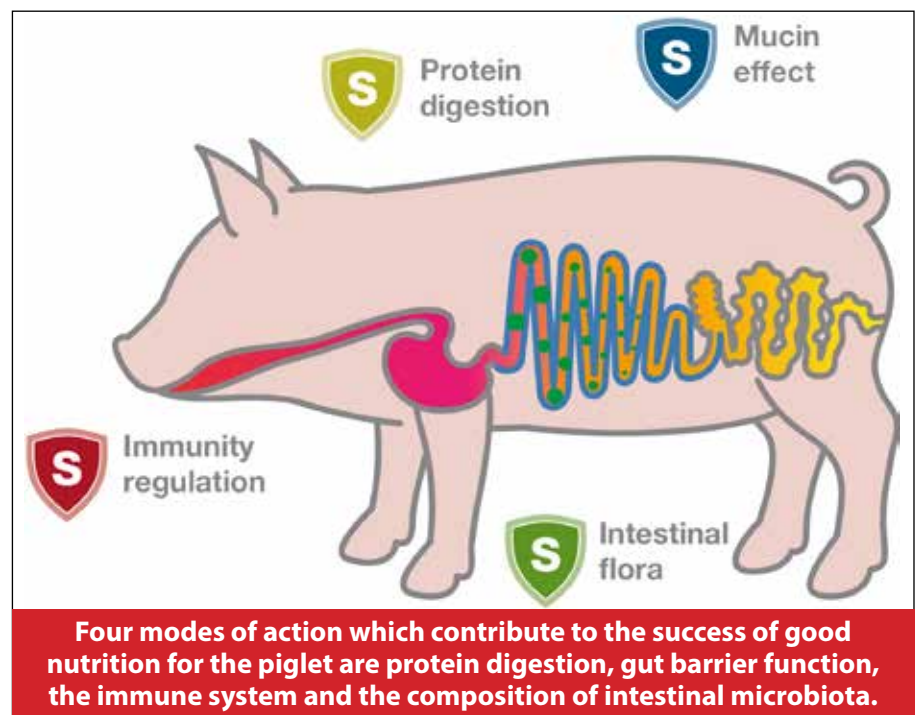
The following nutritional strategies can help to improve gut health and reduce the incidence of scours at weaning time.

Protein choice

Proteins of low digestibility are more likely to be fermented by pathogens in the gut. The amount of protein that can be fermented in the large intestine should be minimized to reduce the risk of diarrhea.

High-quality and highly digestible protein sources improve pigs' post-weaning performance.

Milk by-products such as skim milk and whey concentrate, as well as processed soy proteins with low anti-nutritional factors, typically increase feed intake in piglets. Milk proteins also contain several bioactive compounds with many potential health benefits. Bioactive compounds consist of growth factors that are present in milk to promote the devel-



NUTRITION

opment of the neonatal gut.

An excellent source of functional proteins and maternal antibodies is spray-dried plasma. This feed ingredient improves stool quality, intestinal health and average daily gain.

Carbohydrate choice

The pig intestinal tract harbours a diverse population of bacteria, which provide important protective effects against pathogens. These bacteria also carry out many metabolic functions including digestion of plant carbohydrates (fibres) that are otherwise undigestible by digestive enzymes.

Piglets must be fed an optimum level of non-digestible but fermentable carbohydrates (soluble fibre). Beneficial bacteria, such as lactobacillus, can break down carbohydrates as the main energy source for their maintenance and growth.

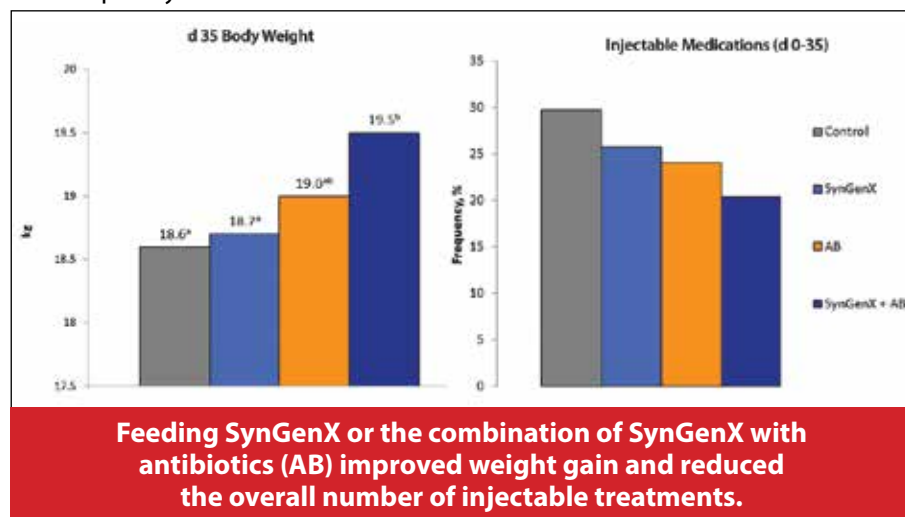
This carbohydrate fermentation process produces short-chain fatty acids (SCFA) – mainly acetate, propionate and butyrate. SCFA reduce the pH in the digestive tract, which results in fewer undesirable bacteria in the gut. SCFA benefit the pig, providing an additional source of energy, suppressing potential pathogen growth and inhibiting inflammation.

Fat choice

Nursery pigs' abilities to digest fat are lower than those of growing pigs. The lower activity of pancreatic enzymes, particularly lipase, after weaning is the main cause of this condition.

Polyunsaturated fatty acids are

Figure 1: Effect of a Lactobacillus acidophilus fermentation product (SynGenX) and dietary antibiotics, alone or in combination, on nursery pig performance and frequency of medical treatment



the most preferable fat sources for young pigs. Vegetable oils are more digestible than animal fats. However, extracted oils are not bound to any cellular material. Such free fat can form a layer in the stomach causing a reduction in feed intake via changes in satiety signaling. Fat contained within raw materials has a higher proportion of bound and less free fat.

Replacing free fat with bound fat has resulted in linear improvements in pig performance, suggesting that fat type can influence satiety signaling and feed intake.

Enzyme choice

Insufficient enzyme production results in incomplete digestion, excess nutrient flow to the hind gut, and pathogenic bacteria overgrowth.

Adding exogenous enzymes to the young pigs' diet reduces the viscosity of the digesta and provides an opportunity to overcome the animals' limitation in enzymatic digestion.

Different types of enzymes, mainly xylanases, phytases, mannanases and proteases, are available on the market, each working on specific substrates. The effects of enzymes are more prominent when diets are formulated below animal requirements or when pigs are exposed to health or environmental challenges.

Decide which enzyme to use for a given diet and then determine the correct dosage.

Feed additives

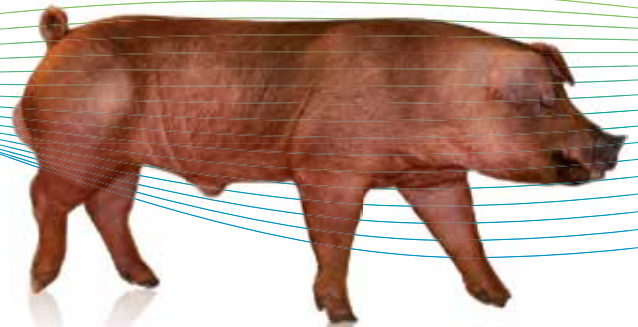
The federal government has introduced new legislation to aid in the

Table 1: Zootechnical efficacy of a phytogenic feed additive (Vita FF) in piglets: Meta-analysis of five studies.

Parameter	Control	Vita FF	p-value*	Difference (%)
Mortality, 28-70 days (%)	6.2	4.6	0.299	
Live weight, 28 days (kg)	7.55	7.56	0.938	
Live weight, 70 days (kg)	23.4	24.2	0.002	+3.6
Daily gain, 28-70 days (g/day)	378	398	0.002	+5.2
Feed intake 28-70 days (g/day)	553	575	0.009	+4.0
Feed:gain, 28-70 days	1.47	1.44	0.204	

* p-value less than 0.05 means that the difference is statistically significant.

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prudent use of antibiotics.

Industry researchers have tested the efficiency of several non-medicated feed additives to support pigs in their defense against pathogenic bacteria. The scientific community and producers have devoted the most attention to fermentation derivatives, essential oils (plant extracts) and organic acids.

Fermentation products: Specific fermentation products offer health benefits to pigs, such as providing nutrients, preventing pathogen adhesion to host cells, interacting with host immune systems and affecting gut structure.

Acosta and others (2016) conducted an experiment on 424 pigs at Iowa State University to evaluate the effects a *Lactobacillus acidophilus* fermentation product (SynGenX, Diamond V) and dietary antibiotics, alone or in combination, on nursery growth performance and the frequency of injectable medications.

Treatments included:

- a control diet (Ctl)
- Ctl plus SynGenX
- Ctl plus antibiotics (AB)
- Ctl plus both SynGenX and antibiotics

The researchers added SynGenX at 1 kilogram/metric ton (kg/mt) in phases 1 to 3 and 0.5 kg/mt in phase 4. For the antibiotic treatments, the scientists added chlortetracycline (441 grams/metric ton) and tiamulin hydrogen fumarate (39g/mt) in phases 1 and 2 only.

In this study, the SynGenX in combination with antibiotics improved growth performance and decreased the number of medications in nursery pigs. (See Figure 1 on page 28.)

Phytogenic additives: Selected plant extracts (essential oils), dried spices and herbs have anti-inflammatory and antibacterial effects. They can also increase sensorial stimulation, palatability and encourage early feed intake which is critical in the post-weaning period.

Table 1 on page 28 summarizes the data from five studies that examined the efficacy of dietary supplementation with phytogenic feed additives



Martin Schwalbe photo

Producers should devote special attention to the weaning period in pigs to manage potential health problems.

(VITA FF, Delacon) in weaned piglets (Ester Vinyeta, 2015).

Organic acids: Organic acids lower the pH in the pig's digestive tract. They also offer the following benefits:

- enhance the digestibility of proteins and the absorption of minerals
- improve the shelf-life, taste and smell of the feed
- enhance palatability and increase feed intake
- promote the development of gut membrane cells
- offer antimicrobial properties

Feed processing conditions

Physical (e.g. grinding) and thermal treatments (e.g. starch gelatinization) of feed prior to animal consumption have many nutritional benefits including increased nutrient availability, improved nutrient utilization efficiency, and inactivation of anti-nutritional factors such as trypsin inhibitors. Anti-nutrient factors reduce nutrient absorption and cause allergic reactions in the gut.

The pelleting process also reduces pathogen exposure.

Conclusions

Producers should devote special attention to the weaning period in pigs to manage potential health problems.

A high-quality starter feed supports digestive health during this period. Such diets support a healthy gut through careful selection of highly digestible ingredients and by reducing the negative effects of protein fermentation in the pig gut.

The inclusion of moderately

fermentable fibres, together with research-proven additives, reduces the growth of harmful bacteria and the incidence of intestinal disorders in pigs.

Since pigs typically significantly reduce feed intake during the weaning transition phase, producers should choose highly palatable and digestible feed ingredients to enhance intake and digestibility for the piglet. **BP**

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Cargill's animal nutrition business offers a range of compound feed, pre-mixes, feed additives, supply chain and risk management solutions, software tools and animal nutrition expertise that is unmatched in the industry. For more information about Cargill Animal Nutrition, visit: cargill.com/animal-nutrition.

High Mycotoxins Present in 2018 Corn Crop

The 2018 Grain Corn Ear Mould and DON Survey was released in October by the OMAFRA Corn Specialist and OMAFRA Field Crop Pathologist. For more information, please visit the survey at <https://bit.ly/2ql54m9>. For links to current Best Management Practices and other new messaging on this topic track the OMAFRA Swine Team posts at <https://onswine.wordpress.com> or Field Crops News at <http://fieldcropnews.com>. The big take home message from this survey is that 19% of grower samples tested had DON levels greater than 5 ppm, and another 15% of samples fell between 2 and 5 ppm. Since this report, we have heard of many samples testing above 5 ppm, and of loads being rejected by elevators for being too high.

Mycotoxins are chemicals produced by moulds or fungi that infect different types of grain. Although there are over 400 known mycotoxins, only a small number of these affect pig performance. The primary mycotoxins of concern in Canada are deoxynivalenol (DON), aflatoxin, zearalenone, ochratoxin A, fumonisins, T-2/HT-2 toxins and ergot alkaloids. Reports indicate DON to be the primary mycotoxin found in this year's corn harvest.

Several factors such as temperature, humidity and oxygen availability during growth, harvest, transport or storage periods, as well as insect and/or bird damage can contribute to the production of mycotoxins. Samples of grain should be submitted to a commercial laboratory

for testing. A list of laboratories offering mycotoxin analysis can be found at <https://bit.ly/2Rr3x9A>. When present, mycotoxins are often distributed unevenly through a load of grain, making it difficult to collect a representative sample for testing. The best practice for sampling is to collect 12-20 subsamples from different locations within a load, which should then be composited and mixed thoroughly (Whitlow et al., 2014). After a sample is collected it should be kept in a cool, dry place to impede further mycotoxin production prior to testing. The CFIA has regulatory guidelines for including mycotoxin contaminated grain in livestock feeds (Charmley and Trenholm, 2015). These guidelines outline the tolerated levels for certain mycotoxins in livestock feed (across species). Pigs are generally more susceptible to mycotoxins than other species, and thus hog producers should be extremely careful when feeding contaminated grains. DON should not be present at levels greater than 1 ppm in the final (mixed) diet for swine. This means that if your diet contains 50% contaminated corn, the corn itself can contain no more than 2 ppm DON (as long as DON is not present on any other ingredient in the diet). To give you an idea of how small of an amount that is, 2 ppm (parts per million) is equal to 2 contaminated grain kernels in a sample of 1 million non-contaminated kernels. Thus when collecting samples, the more subsamples you are able to collect the more accurate your laboratory results will be. It is also important to remember that mycotoxin contamination

tends to be higher in lighter fractions (grain dust, screenings, etc.), and extra care should be taken when handling these fractions. Mycotoxins are able to affect human health as well as animal health, thus ensure anyone handling the mycotoxin contaminated grain or feed is wearing a dust mask to reduce exposure. The benefit of this is, however, that by using a grain cleaner and removing some of those lighter fractions, you can reduce the amount of DON in the corn to a certain degree. This will depend on the initial concentration, and the proportion of lighter fractions in the whole sample, but in some cases it can bring the concentration of DON down by several ppm.

Practical tips for dealing with DON contaminated grain in swine diets:

- Clean grain as soon as possible to remove lighter, more contaminated fractions
- Dry grain as soon as possible to help stop continued mould growth
- If you have to feed contaminated grain, keep it out of the diets of your breeding herd and newly weaned piglets, as they are the most susceptible to its effects
- Blend contaminated grain with non-contaminated grain to reduce the final diet concentration of DON
- Avoid going above the CFIA recommended levels of 1 ppm in the final diet.
- DON may reduce feed intake in pigs, so increase the nutrient density of the diet to help balance for reduced intakes

- Remember, mycotoxins can also impact human health. When handling grains or feeds contaminated with DON, wear a properly fitting dust mask!

For additional reading material on feeding pigs with mycotoxin contaminated grain, please visit the OMAFRA swine website at <http://www.omafra.gov.on.ca/english/livestock/swine/nutritio.html#Mold-sandMycotoxins>.

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Benchmarking: Are you timing your sprints?

My son recently inherited some track equipment that his school was replacing, which had us then looking for training drills online and I stumbled across this saying 'if you aren't timing your sprints, then you aren't getting faster'. This struck me as a great variation on the often used (overused) 'you can't manage what you don't measure' benchmarking quote. Farmers,

lenders, researchers and governments alike are all looking for farm financial benchmarks; finding them is the hard part.

One initiative to standardize farm financial reporting has begun with AgriFood Management Excellence (AME) through their Canadian Total

Table 1: Standardized Farm Financial Reporting.

Farm Revenue	Revenue from farming operations
Cost of Goods Sold	Feed, livestock purchases, vet, breeding, crop inputs
Direct Operating Expenses	Operating labour, fuel, repairs, custom work, marketing costs
Operating Overhead Expenses	Utilities, insurance, office, professional fees, management labour
Annual Cost of Capital	Depreciation, leases, rent, property taxes
Interest Expense	Operating and term loan interest

Table 2: Standardized Farm Financial Reporting – Margins.

Gross margin	Farm revenue minus Cost of goods sold
Contribution Margin	Gross margin minus Direct Operating Expenses
EBITDAR (Operating Efficiency): Earnings before interest, income taxes, depreciation, amortization, rent	Contribution margin minus Operating overhead expenses
EBIT (Operating Profit): Earnings before interest and taxes	EBITDAR minus Annual cost of capital
EBT (Farm Profit): Earnings before taxes	EBIT minus interest

Figure 1: Farm Financial Benchmarks*

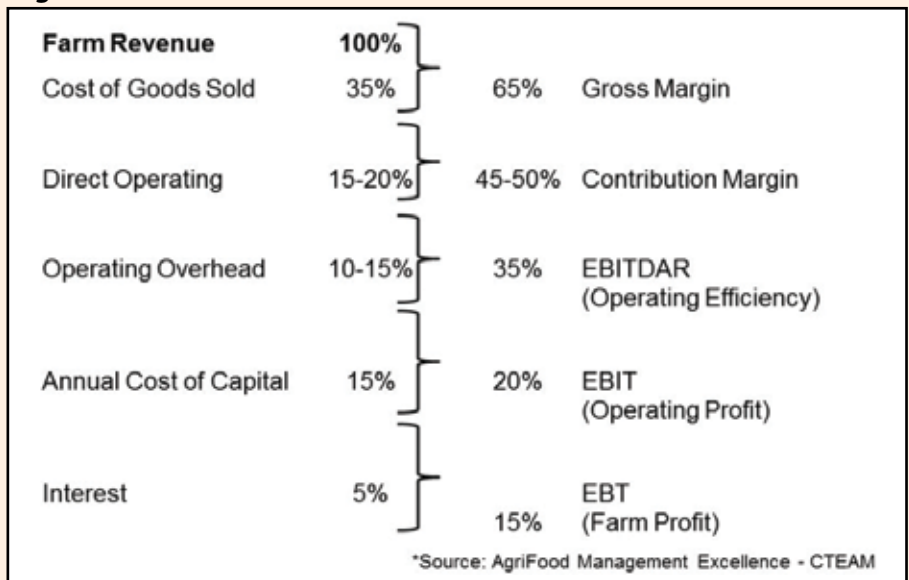


Table 3: Financial results: As a percent of Farm Revenue, Swine Farrow to Finish (5 year average: 2012 to 2016).

	Benchmark (AME)	All Farms (178 farms)*
Cost of Goods Sold	35%	60%
Gross Margin	65%	39%
Direct Operating	15-20%	11%
Contribution Margin	45-50%	28%
Operating Overhead	10-15%	8%
EBITDAR	35%	18%
Annual Cost of Capital	15%	10%
EBIT	20%	7%
Interest	5%	3%
EBT	15%	4%

**due to rounding, numbers may not add precisely*

Table 4: Swine Farrow to Finish (5 year average: 2012 to 2016).

	All Farms*	Top 25th quartile *
Cost of Goods Sold	60%	49%
Gross Margin	39%	51%
Direct Operating	11%	8%
Contribution Margin	28%	42%
Operating Overhead	8%	7%
EBITDAR	18%	33%
Annual Cost of Capital	10%	9%
EBIT	7%	23%
Interest	3%	2%
EBT	4%	20%

**due to rounding, numbers may not add precisely*

Table 5: Swine Farrow to Finish Benchmark results from BRM data.

Cost of Goods Sold	50 - 60%
Gross Margin	40 - 50%
Direct Operating	10%
Contribution Margin	30 - 40%
Operating Overhead	5 - 10%
EBITDAR	25 - 30%
Annual Cost of Capital	10%
EBIT	15 - 20%
Interest	5%
EBT	10 - 15%

Excellence in Agricultural Management training program. They are using a standard financial reporting format to help their course participants benchmark their farm operations; both within their commodity and across other farm types. Table 1 shows how the reporting breaks down farm expenses into five categories showing the types of costs included in each category. The first three (cost of goods sold, direct operating and operating overhead) are operating and the last two (annual cost of capital and interest) are related to managing capital. Read more about the reporting approach at www.agrifoodtraining.com

Farm revenue minus each of these cost categories presents a margin that provides insight into farm performance and can help pinpoint areas that may need improvement. Table 2 lays out the margin analysis working down the cost categories. Terms like EBITDA and EBIT have been commonly used in other industries as measurements of financial performance but has not yet been widely used in farm finance.

Based on previous work and work AME has completed with BDO Canada they have established benchmark targets for the agriculture sector outlined in Figure 1. They are reported as a percent of Farm Revenue. Their work is continuing to explore the question 'Do these benchmarks apply to all commodities and farm types or do they vary depending on the commodities produced?'

Given the differences in cost structures of crop and livestock farm types it seems reasonable to think that there would be differences. The Ontario Business Risk Management program data was used to look at the benchmarks for swine starting with farrow to finish operations. Financial data from specialized swine

farrow to finish operations were summarized using the standardized financial reporting format outlined above. Table 3 presents the results. There are some clear differences in the benchmarks and the swine data. Cost of goods sold is much higher due mostly to feed expenses but also livestock purchases.

Benchmarking is measuring yourself against the top producers. The top 25th quartile based on EBT% were analysed and the results are displayed in Table 4. The biggest difference with the top 25 was their management in cost of goods sold, feed being the largest contributor to the difference. This can also indicate better productivity (more pigs per sow) or better marketing or both. The Top 25 were not hitting any home runs in any of the other cost categories but they were incrementally better in each to give them a 16% advantage in farm profit (EBT).

A 16% profit advantage on a \$190 market hog (the average market value for 2012 to 2016) translates into a \$30 per head advantage. In times of tight margins that difference is significant.

The benchmarking effort with the swine data will continue with more swine enterprises, per unit analysis and drilling down into the cost categories more closely to tease out the differences and potential reasons why. Other crop and livestock farm types will also be analysed to allow for comparison across commodities.

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Enrichment for Nursery Pigs

In the August 2018 issue of Pork News and Views there was an article

called "Environmental Enrichment to Improve Pig Health and Performance". That article discussed the importance of enrichment, as well as different types and how best to deliver them to your pigs. This article details results from an enrichment demonstration conducted throughout the summer of 2018 in a commercial nursery barn in Ontario. The goal of the project was to demonstrate that burlap and cotton rope can be used as viable enrichment items for nursery pigs, as these items are natural, inexpensive materials. Pigs gain satisfaction when they are able to destroy things, and thus burlap and rope toys are viable, destructible toy options. The demonstration aimed to answer the following questions:

1. How durable are rope and burlap toys for nursery pigs?
2. Do pigs prefer rope or burlap toys?
3. What happens to activity levels over time when the same toy is left in place?
4. Is there a clear time point in which pigs become less interested in a toy?
5. Is replacing a toy with a new version of the same toy enough to rekindle interest in the toy, or is a different new toy needed?
6. Is palatability a factor when using natural enrichment sources (does replacing an old used toy with an identical but new toy rekindle interest in the toy)?

The demonstration barn was located in Perth County, and used 6 consecutive nursery rooms, each with 8 pens. The pens measured 10 x 16 feet, and housed approximately 50 pigs per pen. Visual observations of each pen were conducted twice weekly using scan sampling for 6 weeks in each of the nursery rooms. Toys were suspended from the ceiling trusses so the toys hung at the snout level of the smallest pigs in the pen, and were raised as the pigs

grew. Figure 1 shows the chain set up used to suspend toys within each pen. The chains and hardware were a one-time cost (\$13/pen including tax). Toys consisted of 3 strand cotton rope (half inch diameter) or a 12 inch wide strip of burlap. A 4 foot length was used for each toy, for a total cost of \$1.90 per rope toy and \$1.04 per burlap toy (including tax). Rope and burlap toys were presented to the pigs as either a 'string' or a knotted ball (Figure 2).

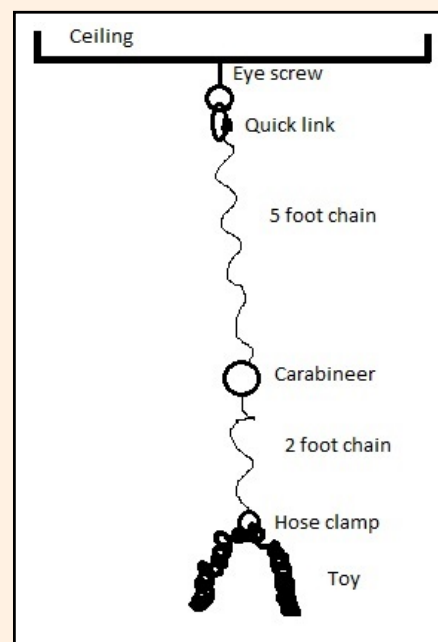


Figure 1: Hardware set-up for hanging toys



Figure 2: Rope and burlap toys were provided as a knotted 'ball' (left) or 'string' (right).

Table 1: Minimum and maximum number of times a toy had to be replaced within a given pen, the shortest and longest amount of time a toy lasted before needing to be replaced within a given pen, and the average number of times the toy was replaced across all pens over the course of the 6 week demonstration

Toy Type	Min. # of toy changes/pen	Max. # of toy changes/pen	Shortest time toy lasted (days)	Longest time toy lasted (days)	Average # of replacements	Cost (average replacements x toy cost)
Burlap String	3	7	3	20	4.8	\$4.99
Burlap Knot	1	6	3	23	4.3	\$4.47
Rope String	2	7	2	18	4.7	\$8.93
Rope Knot	0	3	3	41	2.1	\$3.99

Results

How durable are rope and burlap toys for nursery pigs?

In general, the rope ball lasted the longest of each of the different toys, followed by the burlap ball, rope string and burlap string respectively (Table 1). As pigs got older, all toys needed to be replaced more frequently than at the start of the demonstration, as pigs were able to destroy the toys over time. Durability was also impacted by the amount of use a toy received within a pen, as those which were used more frequently (see below) did not last as long as those that were used less. For on farm use, you will want to find a balance point between how long a toy lasts, how well it retains the interest of the pigs, and of course, the cost.

Do pigs prefer rope or burlap toys?

Figure 3 shows the average

percentage of piglets within a pen interacting with the different types of toys. This data is the average across the 6 week data collection period, and was based on twice weekly observations. The rope string was the most popular of the toy types, and string type toys (rope and burlap) were more popular than the knot form. Based on Table 1, the knot toys had the lowest replacement rates, which fits given they were used less.

When we looked at rope vs. burlap, regardless of toy shape, over the full 6 week period there was no difference in the average percent of pigs interacting with the toys. From this data, it is evident that rope and burlap can equally hold the interest of pigs; however, the form of the toy (string vs. knot ball) has a greater impact.

What happens to activity levels over time when the same toy is left in place?

Because most of the toys did not last for long periods of time, it is hard to determine what happens to activity levels over time. Most of the toys had to be replaced weekly (or every week and a half) throughout the 6 week trial. We did observe that each time a new toy was put into a pen, activity levels increased. Electronic monitoring of toy movement revealed that one or more pigs were interacting with the toys at all times of the day and night.

Is there a clear time point in which pigs become less interested in a toy?

In the 6 week trial, there was no clear time point in which the pigs became less interested in the toy. This may be because toys were replaced on a regular basis as the pigs

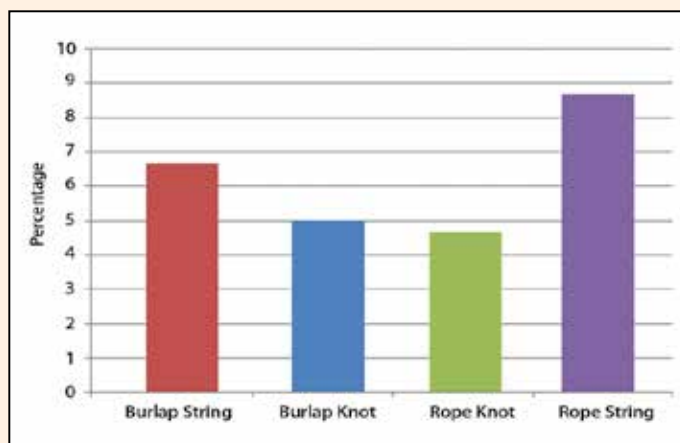


Figure 3: Average percentage of pigs interacting with toys during visual observation periods over 6 weeks.

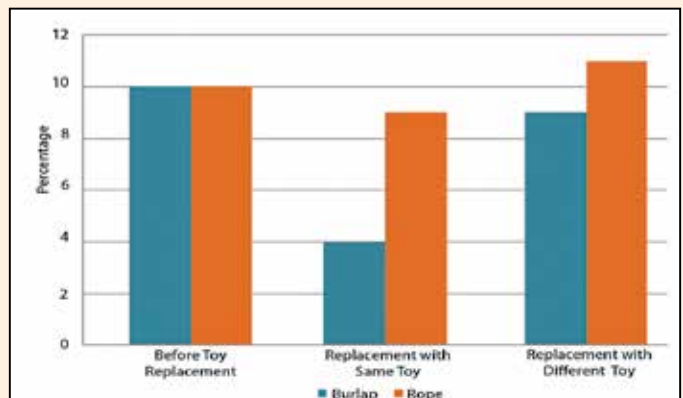


Figure 4: Percentage of piglets interacting with toys during visual observations before toys were replaced, after they were replaced with the same toy (rope to rope, burlap to burlap) or switched to a different toy (rope vs. burlap).

destroyed them. As long as the toys were replaced once they were almost gone/used up, the interest level was maintained throughout the 6 week period.

Is replacing a toy with a new version of the same toy enough to re-interest the pigs, or is a different new toy needed?

Figure 4 shows the impact of toy replacement on the interest levels of the pigs. When a burlap pen was given a replacement burlap toy the interest level decreased. However, when a burlap pen was given a rope toy replacement, their interest peaked. When a rope pen was given a replacement rope toy the interest level stayed the same. However, when they were rotated to a burlap toy, their interest peaked slightly.

Is palatability a factor when using natural enrichment sources?

Palatability does appear to be a factor when it comes to natural toys. The pigs preferred to play with new toys over used toys when given the choice. Two nurseries were set up so each pen had 2 suspended identical toys (rope knot or rope string), except one was new and one was used (by a different group of pigs). When toys needed replacing, they were replaced with another new or

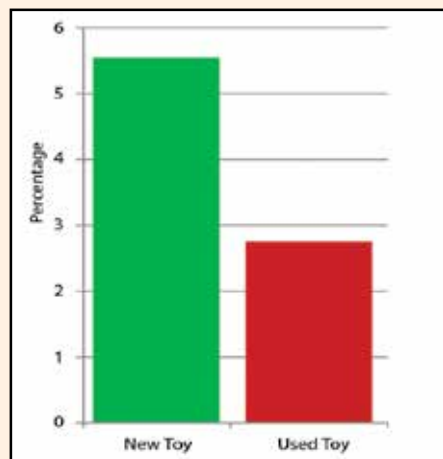


Figure 5: Average percentage of pigs interacting with a new or used toy throughout the 6 weeks when given a choice of both

used toy respectively. Throughout the 6 weeks an average of 5.54% of pigs played with a new toy, and an average of 2.75% of pigs played with a used toy (Figure 5).

Summary

This project demonstrated that natural enrichment items such as cotton rope and burlap can be used as viable toys for nursery pigs. Unlike most commercially available toys, natural materials are destructible, a trait which provides satisfaction to pigs. However, this also means that there is an increase in the amount of labour needed to replace toys as they become used. In this demonstration, the replacement rate on average was a new toy every week to week and a half. The toys lasted longer at the start of the trial, but as the pigs grew the replacement rate increased. We also found that because the toys were destroyed by the pigs and replaced, there was no major lack of interest in the toys over time. Pigs played with the toys at all times of day and night. The pigs did become more interested when a replacement toy was added back into the pen, but there were no times throughout our visual observations in which the toys were not being used. In this demonstration, the 'string' toys (burlap and rope) were the most popular, and thus had the highest replacement rates. This worked out to a cost of approximately \$8.93 per pen for the rope and \$4.99 for the burlap for the full 6 week period, plus the one-time cost of the mounting hardware and chain.

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Hog Margins Remain Strong

From the Nov-Dec 1978 issue of Pork News and Views.

(O.P.P.M.B. provided information for this article)

Hog marketings (in 1978) in Ontario during the 3rd quarter were up 19.5% over 1977. Each hog was carrying approximately 5% more pork, due to heavier carcass weights. It would now appear that by year end Ontario and Quebec will have produced 20% more pork than in 1977. Hog prices are holding high, mainly due to a strong U.S. hog market. The September 1st 1973 U.S. Hogs and Pigs Report estimated a total U.S. hog inventory at 48.9 million head, 1% below 1977. Breeding herd inventory was estimated at 7.40 million head, 3% higher than a year ago. The Ontario average weighted price for the 3rd Quarter was \$67.57 (\$/cwt) up 4.3% above 1977. It would now appear that the 1978 Ontario average weighted price will be the best in history, surpassing the 1975 price of \$66.98.

Ontario weekly hog marketings have been heavy, averaging over 65,000 head. Movement in the chain stores has been good. Most beef cuts are now higher priced than pork. November-December pork prices should hold in the high sixties or low seventies. Corn and soybeans have shown some recent strength. Farmer harvest hold back in the U.S. and a weak U.S. dollar in relation to European currency are credited with improving prices.

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(some tables of data have been omitted)

African Swine Fever; Pig and Pork Exports

Two related topics important to Ontario pork producers.

African Swine Fever (ASF) is a serious viral disease that has never been reported in Canada or the United States. It poses absolutely no risk to people or public health. It can spread rapidly by direct contact, through contaminated clothes, equipment, or imported meat products, and by wild boar or feral pigs. It can persist for a long time in the environment, so if contaminated imported meat is disposed of outdoors, wild animals could pick it up and spread it. If it gets into the wild pig population, which exists in some areas of North America, it will be extremely difficult to control. It is a notifiable disease because of the harm it causes to pigs and its ability to spread quickly. ASF is causing great concern in Europe. It is also causing headlines because of several outbreaks in China recently. This is of particular concern because Canada and the US import feed ingredients from China and it has been shown that certain viral pathogens of livestock may survive the trip from China if these products were contaminated. We do not import pork from China. (Information

taken from CFIA and OIE reports.) For more information:
 ■ www.oahn.ca
 ■ www.swinehealthontario.ca
 ■ www.inspection.gc.ca (search for ASF)

Canada has an impressive track record as an exporter of pork and live pigs to countries around the world. Canada produces nearly three times as much pork or pork products as we consume, in order to supply export markets. This contributes to the 850 million dollars of GDP that the Ontario pork industry generates each year. Aside from pork, each week over 80 thousand live animals go from Canada to the US (see Table). Valuable breeding stock goes to many countries around the world.

You may be seeing the connection between these topics. If ASF appeared in Canada a lot of pigs and pork could be stuck in the country because our export markets may refuse our pigs and pork. The extent of the economic impact and hardship for producers and others in the industry is difficult to estimate but it would be massive.

There is no effective vaccine or treatment for African Swine Fever. So, the best strategy is to keep it out of Canada. The infographic to

the side is available on the Ontario Animal Health Network website (link above). Print it out and post it somewhere prominent. Never bring meat products home from other countries - it is, in fact, illegal. Re-evaluate your biosecurity protocols with everyone, including visitors who may have been to other countries.

We cannot afford to have this disease enter Canada.

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ASF PREVENTION TIPS

WHEN TRAVELLING
 Don't bring meat products back to Canada with you
 Ensure human food waste is not fed to your animals
 Disinfect all footwear/clothing upon return from travel

EVALUATE HEALTH AND BIOSECURITY
 For all staff/visitors
 Confirm staff/visitors have not travelled to countries where ASF is detected, BEFORE entry to the farm. Ensure all visitors abide by on-farm biosecurity practices.

CONTACT YOUR HERD VETERINARIAN
 Immediately
 ASF mimics other swine diseases such as Erysipelas, PRRS and Circovirus. Contact a veterinarian ASAP to determine the cause of disease.

STOP ALL PIG MOVEMENTS
 To/from your farm
 Never move/sell or send to auction yards sick or compromised pigs on your farm to prevent further spread of infection.

SIGNS OF ASF ILLNESS

- Fever
- Loss of appetite
- Skin hemorrhages
- High mortality within 10 days of initial signs

SOURCE: OMAFRA 2018

U.S. Weekly Imports by State of Entry from Canada (# of pigs)*			
Week Ending on Friday.....	05-Oct-18	12-Oct-18	19-Oct-18
Feeder Pigs - Total from Canada	81,454	81,872	80,372
@ North Dakota	63,424	59,032	63,812
@ Michigan & New York	18,030	22,840	15,060
Market Pigs - Total from Canada	6,076	6,248	5,928
@ North Dakota	826	1,791	1,564
@ Michigan & New York	2,039	1,695	1,835
# of Sows & Boars Imported from Canada for Slaughter	8,823	7,033	8,495

*From OMAFRA Weekly Hog Market Facts report; based on USDA report WJA_LS635.

Income (\$/pig)	Farrow to Wean	Nursery	Grow-Finish	Farrow to Finish
Market Pig @ 101% of Base Price \$159.01/ckg, 110 index, 102.65 kg plus \$2 premium				\$183.34

Variable Costs (\$/pig)

Breeding Herd Feed @ 1,100 kg/sow	\$14.01			\$15.36
Nursery Feed @ 33.5 kg/pig		\$16.94		\$17.85
Grower-Finisher Feed @ 277 kg/pig			\$85.30	\$85.30
Net Replacement Cost for Gilts	\$1.91			\$2.10
Health (Vet & Supplies)	\$2.16	\$2.10	\$0.45	\$5.03
Breeding (A.I. & Supplies)	\$1.80			\$1.98
Marketing, Grading, Trucking	\$0.90	\$1.50	\$5.76	\$8.33
Utilities (Hydro, Gas)	\$2.35	\$1.38	\$2.13	\$6.17
Miscellaneous	\$1.00	\$0.10	\$0.20	\$1.40
Repairs & Maintenance	\$1.26	\$0.61	\$2.15	\$4.19
Labour	\$6.27	\$1.85	\$4.00	\$12.83
Operating Loan Interest	\$0.29	\$0.36	\$1.25	\$1.95
Total Variable Costs	\$31.96	\$24.84	\$101.24	\$162.47

Fixed Costs (\$/pig)

Depreciation	\$4.22	\$2.04	\$7.18	\$13.95
Interest	\$2.36	\$1.14	\$4.02	\$7.81
Taxes & Insurance	\$0.84	\$0.41	\$1.44	\$2.79
Total Fixed Costs	\$7.42	\$3.59	\$12.64	\$24.55

Summary of Costs (\$/pig)

Feed	\$14.01	\$16.94	\$85.30	\$118.51
Other Variable	\$17.95	\$7.91	\$15.94	\$43.96
Fixed	\$7.42	\$3.59	\$12.64	\$24.55
Total Variable & Fixed Costs	\$39.38	\$28.43	\$113.88	\$187.03

Summary	Farrow to Wean	Feeder Pig	Wean to Finish	Farrow to Finish
Total Cost (\$/pig)	\$39.38	\$69.42	\$143.84	\$187.03
Net Return Farrow to Finish (\$/pig)				-\$3.69
Farrow to Finish Breakeven Base Price (\$/ckg, 100 index) includes 101% Base Price & \$2 Premium				\$162.24
Farrow to Finish Breakeven Base Price (\$/ckg, 100 index) excludes 101% Base Price & \$2 Premium				\$165.64

This is the estimated accumulated cost for a market hog sold during the month of October 2018. The farrow to wean phase estimates the weaned pig cost for May 2018 and the nursery phase estimates the feeder pig cost for July 2018. For further details, refer to the "2018 Budget Notes" posted at <http://www.omafr.gov.on.ca/english/livestock/swine/finmark.html>.



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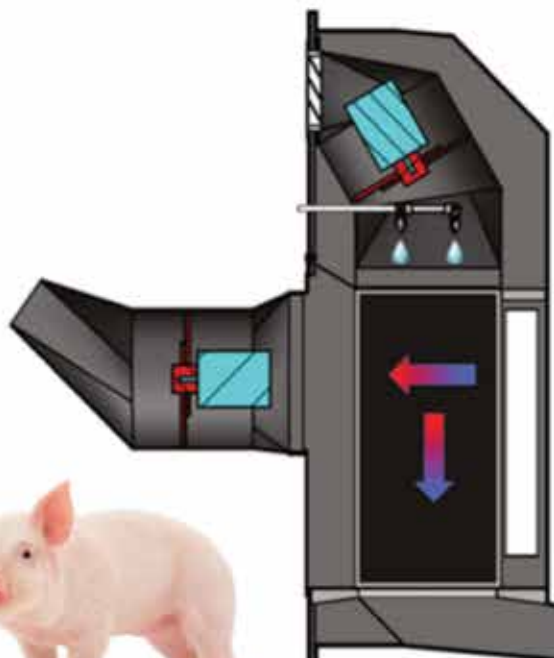
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by
**LILIAN
SCHAER**

SHO RELEASES NEW STRATEGIC PLAN

The leadership team aims to contain and eliminate key swine diseases from Ontario within five years.

Swine Health Ontario (SHO) plans to create a cohesive and collaborative system for swine health management in the province, as outlined in its new five-year strategic plan.

SHO built the plan around three main areas: targeted disease management, a swine health information system and disease response.

Together, these targets will create an integrated approach to help the swine industry prevent, detect, contain and eliminate disease.

“Our end result is a co-ordinated, inclusive and timely system that is relevant to the industry and will help everyone make better decisions in swine health management,” says Amy Cronin, chair of SHO.

The province’s swine health stakeholders created SHO in 2015 as a management group to provide overall guidance and co-ordination of swine health efforts among the partner organizations.

Those partners include Ontario Pork, the Ontario Pork Industry Council and the Ontario Swine Health Advisory Board. OMAFRA serves as an ex-officio member.

Under the new strategic plan, SHO will develop an effective process to contain and eliminate such diseases as Porcine Epidemic Diarrhea (PED), Porcine Reproductive and Respiratory Syndrome (PRRS), and Senecavirus A (SVA) from the Ontario swine industry. These efforts will include developing solutions to reduce transmission risks associated with the cull marketing chain.

“Our cull assembly points are a direct contact point with pig production in the U.S. and its disease challenges, as well as a contact hub for a transport network that serves much of our industry,” Cronin says.

“This makes identifying and preventing risk in these areas very important components of our transmission reduction strategy.”



kongjinguang/Stock/Getty Images Plus photo

The long-term goal is elimination of PED from all Ontario farm sites by the end of the plan’s five-year window, Amy Cronin says.

The long-term goal, she adds, is elimination of PED from all Ontario farm sites by the end of the plan’s five-year window.

SHO will also develop a Swine Health Information System (SHIS) to provide co-ordinated, inclusive, timely and relevant information for the industry.

The aim is improved identification, control, containment and elimination of swine diseases through producers’ self-declaration of disease outbreaks and documenting known disease status for all swine sites. This information will help in the implementation of orderly marketing plans and reduce disease transmission risks.

“SHIS will let us communicate essential information to stakeholders in a timely fashion, so we can make important business decisions that can reduce disease transmission, like a voluntary cease movement and decisions regarding pig placement, routing and scheduling,” Cronin explains. The system will integrate data from AgManifest and the Ontario Area Regional Control and Elimination program to improve accuracy of the available information.

SHO hopes to have the system operational and in use by more than 80 per cent of Ontario’s sow base

across the province within five years.

A new command centre structure, combined with disease emergency preparedness priorities, will help the Ontario swine industry respond to disease challenges – whether a foreign animal disease or emergence of an economically significant but non-regulated disease – in a co-ordinated fashion. This plan includes strengthening collaborative relationships with OMAFRA.

As part of its disease prevention efforts, SHO will also continue to focus on biosecurity and risk management measures for on-farm, assembly and transport.

“SHO is committed to continuous and collaborative improvement in swine health management that engages the entire industry and is based on practicality, simplicity, efficiency and cost-effectiveness,” Cronin says. “Ultimately, this will enable Ontario’s swine industry to maintain a global competitive advantage.”

For more information, please visit swinehealthontario.ca. **BP**

Swine Health Ontario is a leadership team focused on improving and co-ordinating the industry’s ability to prevent, prepare for and respond to serious swine health threats in Ontario.

by
**LAUREN
ARVA**



LET'S GATHER TO TALK GROUP SOW HOUSING

Ontario seminar will help producers address challenges of sow management in the new housing system.

The Canadian swine industry continues to prepare for the new loose sow housing regulations and an upcoming Ontario conference will provide some practical advice.

The London Swine Conference, the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Ontario Pork, the Ontario Pork Industry Council, and the Prairie Swine Centre worked together to plan the Group Sow Housing & Management Seminar. Taking place on Dec. 4 at the Best Western Plus (Arden Park) Hotel in Stratford, Ont., the seminar will focus on the challenges of sow management in group housing.

The seminar aims to increase producer and industry understanding about the requirements for group



Ontario Ministry of Agriculture, Food & Rural Affairs photo

The seminar aims to increase producer and industry understanding about the requirements for group sow housing, said Laura Eastwood, OMAFRA swine specialist.

sow housing, said Laura Eastwood, OMAFRA swine specialist.

"We aim to provide practical solutions to challenges encountered by those who have group housing

systems in place, and to equip producers who are in the planning stages with information to avoid some of those challenges," she told *Better Pork*.



Better Pork Magazine, October 2018

"Planning for loose housing success"
by Tom Stein



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“We also have a dedicated exhibitor area to facilitate networking.”

Attendees will learn practical information from some of the leading North American experts on sow housing and management and have the chance to connect with them during breaks, Eastwood said.

“As the swine industry moves towards group sow housing, industry members such as veterinarians, nutritionists, geneticists, sales representatives and technical specialists will need a firm understanding of how to manage sows in group settings,” she added.

“These industry representatives must be aware of different housing systems and management practices to improve animal welfare and production, as they work closely with producers.”

This year’s seminar will consist of three farmer profiles in addition to a panel discussion to encourage audience interaction, Eastwood explained.

Scott Hyshka from Mountain Vista Sow Unit, Sunterra Farms in Alberta will discuss his low-cost conversion project. Matt Davis from Hord Family Farms in Ohio will review the four group housing systems his family uses. Sylvén Blouin from Jyga Technologies in Quebec will examine “Common Challenges with Group Sow Housing.”

Industry professionals will also participate in the panel discussion.

Francis Jolin St-Laurent from Production Porc Plus/Ferme Porc-Saint in Quebec will share his experiences with electronic sow feeding.

Dr. Jennifer Brown from the Prairie Swine Centre in Saskatchewan will address “Mixing Practices to Reduce Aggression and Improve Production.”

Dr. Karine Talbot from Hylife in Manitoba will explain “Health Management for Group Housing.”

Dr. Laurie Connor from the University of Manitoba will present the latest information on flooring and lameness. (In the previous edition of *Better Pork*, staff writer Kate Ayers discussed the challenges of this condition in sow housing conversions. See page 6 of the October magazine.)

The seminar is designed for all sow producers, including those who are in the transition process as well as those who have already transitioned to group housing, Eastwood said.

Indeed, some sessions are tailored to producers at different stages of the process.

Mark Chambers from Sunterra Farms, along with Hyshka, will lead a breakout session for those farmers who have not yet converted to group housing or have had group housing for less than one year. This panel will focus on “Start-up Challenges.”

Dr. Greg Wideman from South West Ontario Veterinary Services will run a breakout session for producers who have had group housing systems for over a year. The session is titled “Improving Production Efficiencies and Benchmarking.”

Visit londonswineconference.ca to learn more. **BP**

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by
**KATE
AYERS**



OPC GEARS UP FOR NEXT YEAR'S EVENT

The congress chose its new executive and presented industry awards at the annual meeting.



Glenn Ruegg photo

**Back row L-R: Henry Groenestege, Tom Murray, Francisco Trejo.
Front row L-R: Kevin Varley, Meghan Kirkpatrick, Kirk McLean, Chris Crump, Kristy Perrin.**

The Ontario Pork Congress (OPC) chose a new executive for 2019 and presented awards at its October annual meeting in Stratford.

Kirk McLean is the OPC's new president. He has been involved with the congress for many years and has held such positions as chair of the exhibits committee and vice-president.

The other members of the congress executive include:

- Chris Crump (past president)
- Henry Groenestege (recording secretary)
- Meghan Kirkpatrick (1st vice-president)
- Kristy Perrin (director)
- Tom Murray (treasurer)
- Francisco Trejo (2nd vice-president)
- Kevin Varley (director)

For the next event, congress organizers aim to "improve the numbers for the show – always keeping the number of exhibitors up – keeping it interesting and keeping the social aspect of the show up as well," McLean said to *Better Pork*.

The educational aspect of the con-

gress is also important, as is giving industry stakeholders an event through which to connect and network.

The OPC executive wants to continue the tradition of having "a venue where there is business and socializing going on ... under one roof," McLean said.

He looks forward to expanding on the OPC's past work and "keeping things fresh and exciting going forward."

Scott Dingwell of Hometown Pork in P.E.I. was a guest speaker at the meeting. He is an eighth-generation hog farmer.

He spoke about promoting involvement in the ag industry and recruiting new leaders.

"When we talk about leadership, it can't just be the president or the chairman. It is everyone who is involved" in the industry, Dingwell said.

"We've lost so many farmers while maintaining our production. The pool of potential leaders is dramatically shrinking"

Those in the industry must actively invite, engage, empower and then

respect potential leaders, he said.

"Inviting means finding them and bringing them into the (industry) circle. Then we have to engage them. We have to ask them to be involved, we have to listen to what they say ... especially the younger generations," Dingwell said.

"Empowerment is giving permission – it's saying, 'we need you, we want you' and ... the last R is respect. It goes back to industry members and leaders, knowing they are truly being respected and when they are truly being listened to."

In addition, the OPC presented its Industry Leadership Award to Joe Dwyer for his years of contribution to the pork sector.

And the OPC exec presented the Hog Jog cheque to the Local Community Food Centre in Stratford. The cheque was for \$54,000.

Over the past 13 years, the Hog Jog has raised over \$476,000 for multiple charities.

Save the dates for next year's show, which will be held on June 19 and 20, 2019. **BP**



by
**CURTISS
LITTLEJOHN**

CRITICAL FARM DATA MANAGEMENT

We increasingly depend on automated systems in our barns but we must ensure proper maintenance for success.

Canarm AgSystems photo



We must back up the data for our swine feeding systems.

It's 8 p.m. on a Friday night when the phone rings and I see a customer's name on the caller ID.

Part of my job is providing 24-7 technical support for swine feeding systems. To do this work, I must be able to remotely access customers' systems.

I can help with such run-of-the-mill support calls as small log jams in logic function, diagnosing a bad sensor or even figuring out that the system won't work because, oops, it's out of feed. I receive plenty of calls for more in-depth challenges, too.

For example, one Saturday night, about an hour after a lightning storm rolled through, my phone rang. A

local customer had trouble getting his system running again after a power outage. He asked if I could remotely log onto his system and provide some assistance.

After several failed attempts to do so, I dispatched a service tech to the farm to offer on-site support. The technician called me awhile later to report that a power surge damaged or corrupted the computer's hard drive.

Fortunately, several years ago, we switched our systems from an industry standard internal computer hard drive to a CFAST card or removable drive.

"Not a problem," I told the tech. "Is the hardware still good?"

He replied yes instantly.

Pleased with this news, I gave instructions to the technician to pop out the current card and install the replacement. (We ask all farmers to keep a mirror image of the original card on hand.)

Once that is done, you simply reload the system and management data from the backup memory stick. This process should have put the farmer back in business.

Then I heard the deep sigh on the other end of the phone and I knew what to expect.

"He doesn't have a replacement CFAST card," the technician explained. "It was on the desk and got



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filled with cold coffee a while back. He never made a backup of his farm management or herd management data.”

Everyone’s worst nightmare had come true.

The farmer had a critical system out of order but the on-site tech could not repair it because the producer had not maintained his part of a critical data management stream.

Now the livestock were at risk of not being cared for properly, which is a definite no-no in today’s social media world of blistering posts.

Automation can enhance animal comfort and care. Technology can promote better time management, lower input costs and increase productivity. Farmers can use these systems to make more informed decisions based on accurate and timely data. But technology also has pitfalls.

With the support of a tech, you must be able to restore any automated farm system to what I call “the clean slate state” in a quick and efficient

manner. In some cases, you might need off-site backup and storage on a cloud-based solution. On most farms, you must regularly perform scheduled backups of key systems data or programming.

I recommend producers make a mirror image of all basic system setups and data structures the same day that they have the systems installed. Do this work as soon as the installers confirm that the technology works properly.

In fact, as part of the sign-off procedure, the installers should formally hand over a hard copy backup or mirror image of your system(s). This step ensures that, if you suffer a catastrophic failure, you have a reference point to bring your system(s) back to life.

The installers should walk you through how to restore your system(s) in such an event.

We rely on memory sticks or flash drives for backup but these devices have a finite lifespan due to their construction. I recommend that you

replace them every five years.

You should also have a standard operating procedure for backing up management data, and, if possible, it should be automated.

For herd data, I recommend a daily, weekly, monthly, quarterly and annual backup logistics tree. If you ever suffer a failure or corruption from any source, you will have multiple points to return to in the past to restore your records.

All barn equipment or control circuits that are connected to electronic devices should have online surge protection, which is an inexpensive way to protect yourself and your equipment. Uninterrupted power supplies for all computer-controlled feeding systems can also give you peace of mind.

Let’s talk about the “when” – not “if” – you have a computer hardware, software or connectivity issue.

Data is the currency of farm management today. This information should be guarded and protected like any other valuable and potentially irreplaceable asset. The key to bringing your system back online quickly and with minimal disruption is the reliable backup and storage of critical farm data.

It’s easy to overlook the importance of regular data backup as we move into the age of the cloud and big data. The challenge we face is one of complacency.

We think we can access anything on the web so we grow complacent about backing up the critical data for livestock systems.

These feeding systems are integral in providing superior animal care and attaining increased productivity. The combination of these factors makes a profitable and successful operation, so we must set and stick to a strict data backup policy. **BP**

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REVAMPING VENTILATION FOR GROUP HOUSING

by
BERNARDO
PREDICALA &
ALVIN ALVARADO



In the transition to group housing, producers should consider updates to their ventilation systems.



National Pork Board and the Pork Checkoff, Des Moines, IA USA, photo

Since under-ventilation can create an unhealthy environment and over-ventilation wastes energy, finding the right balance is key to a healthy environment for both animals and workers.

Ventilation affects many aspects of the animal housing environment as well as barn operating (i.e. energy) costs.

Retaining the existing ventilation system in converted sow facilities will lead to over-ventilation during winter months, because these minimum ventilation fans are designed for higher animal densities. If producers keep the old system, they need to use extra heating fuel and risk chilling the animals, which affects performance.

If farmers continue ventilation at the pre-remodeling level (meaning the level set prior to housing conversion), the building would be ventilated 33 per cent more than required. In turn, these conditions can cause a rise in heating energy consumption of

75 per cent. During the summer, the impacts are less pronounced but over-ventilation still uses extra electricity which translates to higher costs.

Producers must also carefully reconfigure the ventilation system to ensure proper air distribution to eliminate dead spots (unventilated areas) and unwanted drafts. Air exchange reduces humidity and gases like ammonia and carbon dioxide. In the process, air exchange provides a healthy environment that fosters efficient pig growth.

Since under-ventilation can create an unhealthy environment and over-ventilation wastes energy, finding the right balance is key to a healthy environment for both animals and workers. The correct level also

ensures energy savings and efficiency.

This balance can only be achieved by careful redesign of the existing ventilation system of a converted gestation barn.

In this project, a computer simulation technique used computational fluid dynamics (CFD) principles to numerically simulate fluid flow, heat and mass transfer, and mechanical movement. Researchers examined various design configurations and determined the most effective ventilation system design for a converted group sow housing facility.

Ventilation system design parameters investigated included capacity and location of exhaust fans, and size and location of air inlets. Researchers configured these two parameters in

such a way that the resulting design adhered to the following principles: upward airflow, downward airflow, or horizontal flow ventilation.

Barn implementation

Scientists used two group-housed gestation rooms. Researchers modified the treatment room to incorporate the horizontal flow configuration, identified from the simulation work. Scientists made the control

room's ventilation system like those in pre-converted (stall) gestation barns. Researchers carried out eight replicates: four for winter and four for summer.

In treatment rooms, air inlets were located at one end of the room and exhaust fans at the opposite end. This setup allowed air to flow horizontally through the entire length of the room.

In control rooms, inlets were located on the ceiling while the fans were

on one of the external walls. This configuration represented a downward air flow direction which is typical in commercial sow barns.

Conclusions

Results from the computer simulation work confirmed the need to redesign the ventilation system of a newly converted group sow housing facility.

Among all the design configurations researchers tested, the horizontal flow ventilation system was the most effective in removing heat from the animal-occupied zone in the room during both summer and winter.

In-barn evaluation of this system showed about a 21 per cent reduction in natural gas consumption during heating season versus the unmodified system.

The horizontal flow ventilation system also produced a 14 per cent reduction in electricity consumption.

The horizontal ventilation system design for group sow housing provided better air quality and cleaner floors than the unmodified design.

Animal performance and productivity were not adversely nor beneficially impacted by having a horizontal flow ventilation system in a gestation room.

In terms of behaviour and welfare, pigs' use of enrichment materials was greater in the treatment room. This information implies that sow comfort was better in the room with the horizontal ventilation design. **BP**

Prairie Swine Centre (PSC) conducts near-market research that can be applied by the pork industry within a one- to seven-year time frame.

Financial support for this project was provided by Agriculture Council of Saskatchewan Inc. through the Advancing Canadian Agriculture and Agri-Food Saskatchewan (ACAAFS) program, and the Saskatchewan Agriculture Development Fund. Strategic funding provided to the PSC by the Saskatchewan Pork Development Board, Manitoba Pork Council, Alberta Pork, Ontario Pork, and the Saskatchewan Ministry of Agriculture is also acknowledged.

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by
**LAUREN
ARVA**



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Launched over 30 years ago for the hog and poultry sectors, the show has grown to serve the entire livestock industry. This year, the Expo will showcase the newest technology and information for producers in over 140 exhibits across more than 30,000 square feet of display space.

“If you’re in the livestock industry, this is an opportunity for you to meet producers and representatives of companies that support livestock production in Manitoba,” said Andrew Dickson, general manager of Manitoba Pork, to *Better Pork*.

“A significant number of attendees are from the swine sector of Manitoba, so you’ll be able to meet

who’s who in the hog industry.”

The Expo “will be a chance for attendees to engage, on a very informal basis, with a lot of people that they deal with on a regular basis,” he added.

Highlights of the Expo include:

- a multi-species livestock show, which includes hogs, cattle and poultry
- educational sessions led by experts on new research and upcoming technologies
- Wingstix for Wishes, which is a chicken wing-eating competition and charity event for the Children’s Wish Foundation
- Canada’s largest pork quality competition

The latter event brings producers together in friendly competition to

showcase their hog production. Judges assess carcasses on such criteria as quality, weight, colour and size.

The winners donate their prize money to charities of their choice and, altogether, participants donate more than 7,500 kilograms (16,535 pounds) of pork to Manitoba food banks in time for the holidays.

The Expo also provides an opportunity for producers to meet with representatives from the major ag building expansion companies, Dickson said.

“The livestock industry in Manitoba is doing well. There’s a lot of construction of new dairy barns, poultry barns and hog barns.

“The cattle industry has had a tough year in terms of feed supplies but we’re hoping some producers will



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The Expo “will be a chance for attendees to engage, on a very informal basis, with a lot of people that they deal with on a regular basis,” said Andrew Dickson.

still be able to make it,” he said.

Presenters and attendees can discuss recent government changes, Dickson added.

“The provincial government brought in some new regulations dealing with building codes, municipal approval processes and environmental licensing, which were very restrictive under the former government. ... The

more sensible regulations will do a lot for growth and development.”

Attendees will benefit from the Expo, Dickson said.

“We hope producers leave with a better perception of what’s going on in the industry ... and that they will feel more comfortable about their potential future having talked to the major players in the business,” he said.

The day “is pretty jammed-full,” he added. “We’re looking forward to another good year.”

The Prairie Livestock Expo takes place on Dec. 12 from 9 a.m. to 6 p.m. at the Victoria Inn Hotel & Convention Centre in Winnipeg. Admission and parking are free.

For more information, visit prairielivestockexpo.ca. **BP**

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by
**MOE AGOSTINO
& ABHINESH GOPAL**



HOG MARKET RECEIVES A LATE-YEAR BOOST

China's African swine fever epidemic serves as the main catalyst for the hog price rise.



Kelli Jo/Stock/Getty Images Plus photo

Kelli Jo/Stock/Getty Images Plus photo

Among the major export markets, U.S. pork faces retaliatory duties in China and Mexico.

Since the first quarter of the year, the lean hogs futures price chart leaned downwards. By early August, the slide lower reached its market bottom. Ever since, a barrage of supportive factors lifted the hog prices.

One of the major factors which weighed on hog futures early in the year was American President Donald Trump's trade wars with the country's key trade partners. Among the major

export markets, U.S. pork faces retaliatory duties in China and Mexico.

During the second half of the year, however, the Trump administration updated its trade agreements with Canada, Mexico and South Korea. These countries are among the top five destinations for American pork exports.

Although the U.S. government had

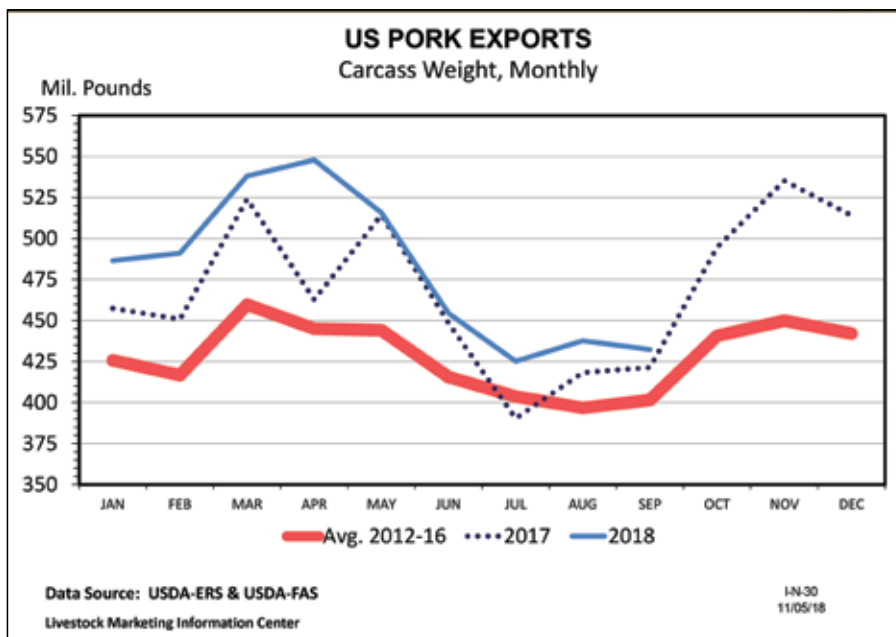
yet to reveal details on these re-vamped trade deals at the time of publication, the hog industry had some optimism that cross-border pork trade would benefit. The duty-free access of American pork to Mexico will be dependent on how the U.S. treats the steel and aluminum import tariffs it imposed on Mexico.

The real catalyst for the August hog price surge, though, was news of the outbreak of African swine fever (ASF) in China.

A large portion of the country's hog production happens on small-scale backyard farms. Since the biosecurity protocols on those farms is typically less stringent than the protocols on commercial farms, the spread of ASF among the Chinese hog herd was swift and rampant.

As of late October, China had culled an estimated 200,000 pigs due to ASF, government sources said. The country's ag ministry scrambled to fight the epidemic and urged swine producers to take proactive measures to prevent an ASF recurrence.

China is the world's largest pork-producing country. This year, it is expected to account for 48 per cent of world pork production, but that figure could drop due to the ASF outbreak.



In August, the U.S. exported a monthly record of 437.675 million pounds of pork.

In September, the country's pig herd dropped 1.8 per cent year-on-year (Y/Y) and sow numbers fell by 4.8 per cent, Chinese government data showed.

In 2018, global pork trade will be a record 8.5 million metric tons (MMT), which is 21.8 per cent higher than five years ago, the U.S. Department of Agriculture (USDA) forecast. Global pork trade will increase by almost 3 per cent Y/Y in 2019, the USDA predicted.

China's ASF epidemic and the resultant change in market dynamics will play an important role in the global pork trade next year. Chinese pork imports will increase 7 per cent Y/Y, the USDA forecast.

Unless resolved, the trade spat between the U.S. and China will limit the amount of American pork entering China. Market participants remain hopeful, however, that the two countries can return to the negotiating table and reach an agreement.

The USDA increased its total American pork exports forecast for 2019 to a record 6.2 billion pounds in the October World Agricultural Supply and Demand Estimates (WASDE). This figure climbed by 85 million pounds from the September estimate.

In August, the U.S. exported a



The USDA decreased its forecast for 2019 American pork production.

monthly record of 437.675 million pounds of pork, which was 4.7 per cent higher Y/Y and 3 per cent higher than the previous month. The country shipped most of these exports to Mexico, underlining the importance of this trade channel.

However, American pork exports in August accounted for only 18.9 per cent of the country's total monthly pork production. Notably, these production levels are the low end of the last eight years, and America's pork exports to China were the lowest since Feb. 2015. The retaliatory duties present a significant obstacle.

Positive supply factors also lent a

helping hand to market prices.

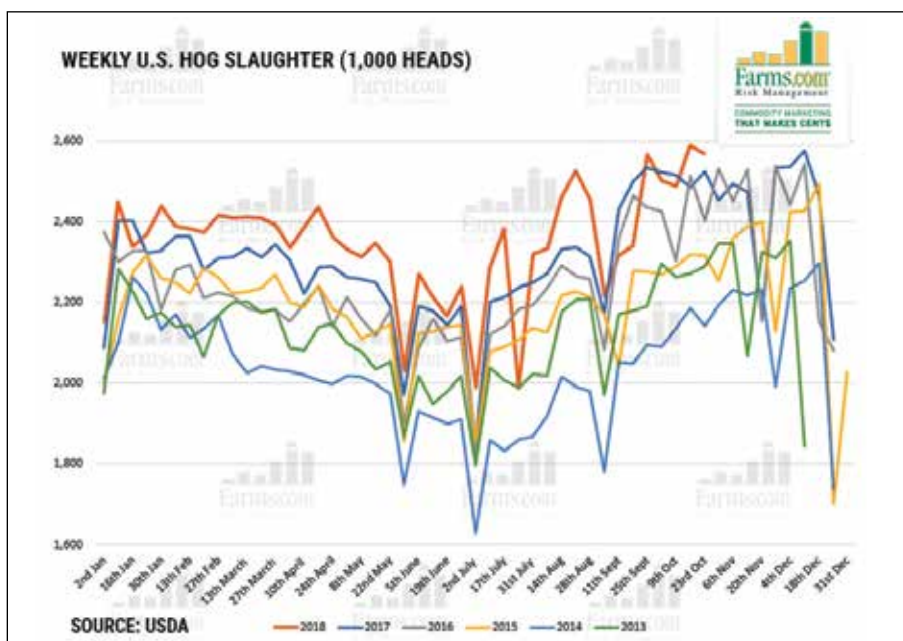
Although the USDA estimates 2018 American pork production to be 13.9 per cent higher than five years ago, the agency lowered the 2018 production figure in October to 26.425 billion pounds. This figure represents a drop of 250 million pounds from the September estimate.

The USDA also decreased its forecast for 2019 American pork production. While the figure of 27.810 billion pounds is up 5.2 per cent Y/Y, it is 65 million pounds lower than the September estimate.

Although American weekly hog slaughter weights gained in October, the month's slaughter pace was lower than market analysts expected, which was supportive for hog futures. Hog producers seemed to delay marketing and fed hogs to a higher weight.

Strong global demand has once again shown how it can support the hog market, underscoring the importance of maintaining and expanding export markets. In order to take advantage of situations like ASF outbreaks, the U.S. must have robust ties with its key trading partners. **BP**

Maurizio "Moe" Agostino is chief commodity strategist and Abhinesh Gopal is head of commodity research with Farms.com Risk Management. Risk Management is a member of the Farms.com group of companies. Visit RiskManagement.Farms.com for more information.



In October, the U.S. weekly hog slaughter pace was lower than market analysts' expectations.



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- › New content from writers in Alberta, Saskatchewan, Manitoba, Quebec and the Maritimes, in addition to the top Ontario content we have offered since 2000
- › We'll continue to provide our essential Pork News & Views, and stories from the top writing team in the industry

This magazine expansion aligns with our online national reach through the Farms.com swine web pages, Canadian Swine newsletter, and hog social media.

Please send us your ideas, thoughts and questions:

paul.nolan@farms.com

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pork**
The Business of Canadian Pork Production

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by
**RICHARD
SMELSKI**

PICK YOUR PATH FOR PORK PRODUCTION

As consumer preferences continue to evolve, farmers can consider their positioning within the marketplace.



Canada's pork industry is well-suited to be a major protein supplier for a growing and changing global population.

As a pork producer, are you in the food business or the amusement business, meaning you create a palate pleasure? Are you producing a desired protein source for the best value or are you competing for an entertaining and enjoyable meal? Is your business strategy aligned with a value chain?

On average, a person spends 10 per cent of his or her gross income on food. In 2017, domestic per capita pork consumption was 21.35 kilograms (46.97 pounds), Statistics Canada says. This figure fluctuated over the past decade but dropped 3.79 kg (8.34 lbs.) since 2007.

How do you interpret this decline? Do we attribute it to religion, convenience, vegetarianism and veganism, or other factors? How do we capture more of the value chain?

In the past, dinner time was a family occasion. Families celebrated food – especially the meat plate.

Now, we often take meals for granted. We rarely eat together as families anymore.

The average American eats one in five meals in the car. One in four eats at least one fast food meal daily. Most families eat meals together less than five times per week.

Teenagers who eat dinner with their parents, five or more days per week, have less trouble with drugs and alcohol than teens who eat supper with their parents less often, a study conducted by the National Centre on Addiction and Substance Abuse at Columbia University shows. Kids who eat family meals also consume healthier diets, have better academic performance, and report having closer relationships with their parents.

As a pork producer, what can you do to capture a bigger market share of pork on the dinner plate, especially with the changing lifestyles and food preferences?

Meat is not just a matter of taste. It's also a primary source of protein and other essential nutrients. In comparison to plant and dairy proteins, animal proteins like pork are "the predominant source of dietary protein," a 2015 study by Stefan M. Pasiakos and others found. Animal protein is valuable for supplementing staple foods, such as cereals – particularly for growing children.

Across the world, people eat more pork than any other type of meat. Pork accounts for just over a third of global meat intake, the Food and Agriculture Organization of the United Nations says.

As income grows in emerging economies, such as the Asia-Pacific region, quality proteins like pork will be needed to satisfy the increased protein demand. And about 800 million people still go to bed hungry every night. Meeting the protein demand is a global challenge.

Canada's pork industry is well-suited to be a major protein supplier for a growing and changing global population. We export 65 per cent of the pork we produce and we are the third-largest pork exporter in the world.

So, pick your path: a specialized domestic market with designated production parameters or a global path focused on nutritional value? **BP**

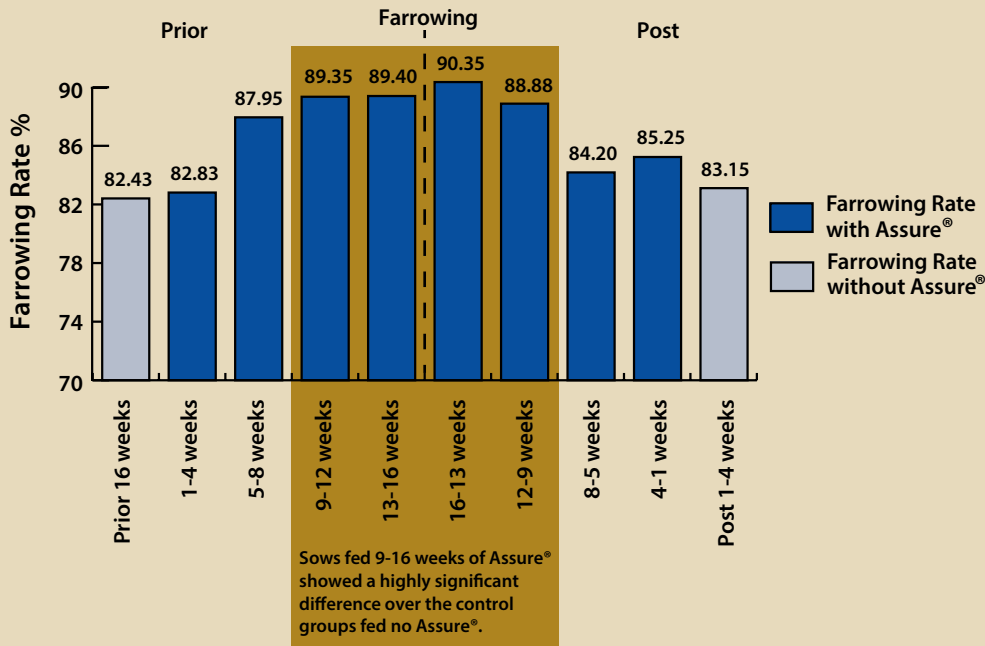
Richard Smelski has over 35 years of agribusiness experience and farms in the Shakespeare, Ont. area.

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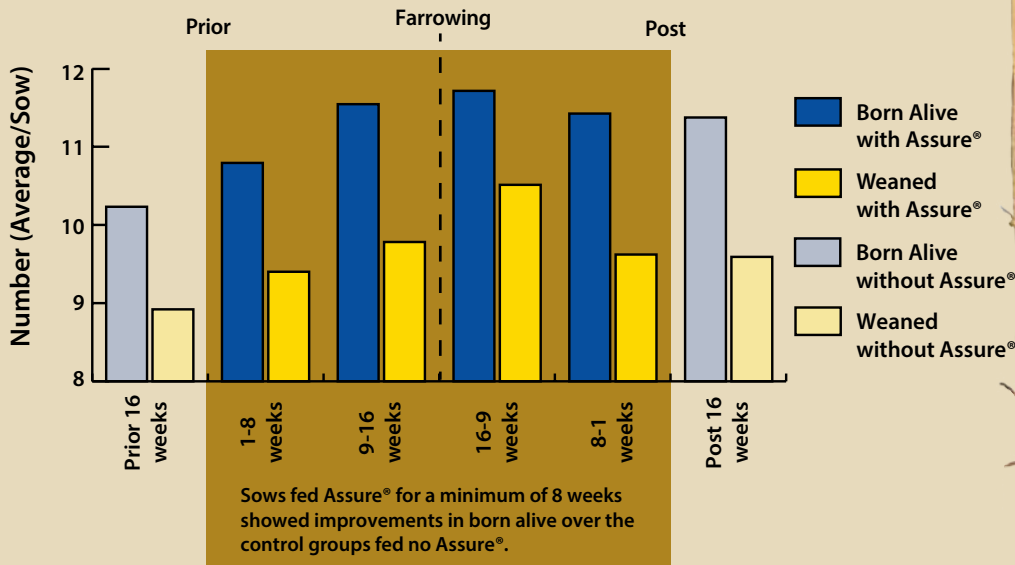
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